



Reading
Borough Council

Working better with you

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 Protection & Nuisance Team of Reading Borough Council with the support and agreement of the following officers and departments:

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Councillor John Ennis  Lead Member for Strategic Environment, Planning and Transport

This ASR has been signed off by a Director of Public Health.

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Executive Summary: Air Quality in Our Area

Air Quality in Reading 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.

Reading is a heavily built-up area, in which the roads get congested during peak times. The main air quality issue identified in Reading are vehicle emissions. NO₂ levels are still of concern due to being elevated in some busy roadside locations, but for the last couple of years NO₂ no longer exceeds the national annual mean objective. PM₁₀ and PM_{2.5} are also pollutants of concern due to their effects on health even at low concentrations.

Reading Borough Council's monitoring of these pollutants indicates that the levels are now falling. Levels of air pollution fell significantly during the COVID-19 pandemic because of less traffic being on the roads during the lockdown restrictions. Levels rose again in 2022 as people returned to normal routines. Since then NO₂ levels have fallen in successive years, this is most likely, predominantly due to the continuing gradual improvements in vehicle emissions as more older vehicles are replaced with EURO6 and electric vehicles.

There is currently 1 large AQMA in Reading covering all the major arterial roads in and out of the town as well as the central area. After bias and distance correction there are no longer monitoring locations where the AQMA exceeds the national objective levels. After adjustment the highest level monitored in 2024 was 34.5µg/m³. https://uk-air.defra.gov.uk/aqma/details?aqma_id=263

All monitoring results within existing AQMA have been below the air quality objectives for the past 2 years. If the downwards trend continues in 2025 and all the data collected is compliant with air quality objectives, Reading Borough Council will revoke the AQMA.

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 ₂)	Nitrogen dioxide is a gas which is generally emitted from high-temperature combustion processes such as road transport or energy generation.
Sulphur Dioxide (SO ₂)	Sulphur dioxide (SO ₂) is a corrosive gas which is predominantly produced from the combustion of coal or crude oil.
Particulate Matter (PM ₁₀ and PM _{2.5})	Particulate matter is everything in the air that is not a gas. Particles can come from natural sources such as pollen, as well as human made sources such as smoke from fires, emissions from industry and dust from tyres and brakes. PM₁₀ refers to particles under 10 micrometres. Fine particulate matter or PM_{2.5} are particles under 2.5 micrometres.

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.

Conclusions and Priorities

In 2024 no continuous monitoring sites exceeded any objective for NO₂. Diffusion tubes at Malcolm Place (40.7 µg/m³) and the Pinnacle (40.9 µg/m³) on the IDR exceeded the objective for NO₂, but after distance correction to the nearest receptor reduced to 33.1µg/m³ and 34.5µg/m³ respectively. Friar Street and Station Road are the other locations with diffusion tubes close to exceedance before bias and distance correction.

As all monitoring results within existing AQMA are below the air quality objectives, and have been for 2 years Reading Borough Council will recommend revoking the AQMA following 1 more year of data compliant with the air quality objectives. Even if the AQMA is revoked next year we are still committed to reducing NO₂ levels further by implementing the AQAP through to it's conclusion in 2029. PM₁₀ and PM_{2.5} are also pollutants of concern due to their effects on health even at low concentrations, although they do not exceed any objectives.

Priorities over the coming year are to complete measures listed in section 2.2, such as the procurement of a charge point operator for the rollout of EV infrastructure in residential areas without off street parking across the borough to encourage the uptake of EVs.

Last year we undertook an air quality assessment indicating that traffic signal optimisation near to the location of highest NO₂ on the IDR would lead to an improvement of 1.5 µg/m³ improvement. Subject to approval from the Joint Air Quality unit (JAQU) for the reallocation of surplus grant funding it is a priority to implement the proposed scheme to improve air quality on the most polluted road in Reading.

We will also carry out a joint project with Public Health to increase our particulate monitoring network. This will provide hyper-local data on the levels and sources of PM_{2.5} and other pollutants around the borough that can be used to inform further appropriate targeted interventions and used as part of public health engagement campaigns to help raise awareness and incentivise behavioural change to reduce exposure amongst local neighbourhoods.

How to get Involved

Local interest in air quality has never been higher; this is reflected in the number of enquiries that the Council is getting from interested local community groups and Councillors trying to find out more on the subject.

Reading has a good bus service, as well as dedicated cycle and walking routes. These options reduce the amount of pollutants an individual is responsible for emitting and are cheaper and often quicker than driving. Building a sustainable transport system that encourages walking, cycling and public transport, reducing the reliance on private cars, is key to Readings Transport Strategy. Anyone looking to reduce their own impact on air pollution is encouraged to use these options and help make Reading a healthier and more pleasant place to live.

If you are sensitive to the effects of air pollution, you may wish to take measures to minimise your exposure such as:

- Limiting the length of time spent in busy roadside locations where the highest pollution concentrations occur.
- Exercise in the morning when ozone levels are lower.

It is particularly important for those sensitive to pollution to take these actions on days when air pollution is forecast to be high. A five-day forecast can be found at: <https://uk-air.defra.gov.uk/>

Up to date local monitoring data can be found at:
https://www.airqualityengland.co.uk/local-authority/?la_id=278

More general up to date information on air quality can be found at:
<https://www.cleanairhub.org.uk/>

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1 Local Air Quality Management

This report provides an overview of air quality in Reading Borough Council 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 Reading 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 (AQMA) 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 AQMA declared by Reading Borough Council can be found in Table 2.1. The table presents a description of the AQMA that is currently designated within Reading Borough Council. Appendix D: Map(s) of Monitoring Locations and AQMA provides maps of AQMA and also the air quality monitoring locations in relation to the AQMA. The air quality objectives pertinent to the current AQMA designation are as follows:

- NO₂ annual 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
Reading AQMA	19/08/2009	NO2 Annual Mean	An area encompassing all the main arterial routes in and out of Reading and central area.	NO	52	34.5	2	Reading Borough Council AQAP 2024-29	https://images.reading.gov.uk/2024/05/Reading-AQAP-2024-2029-Final.pdf

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

☒ Reading Borough Council **confirm that all current AQAPs have been submitted to Defra.**

2.2 Progress and Impact of Measures to address Air Quality in Reading Borough Council

Defra's appraisal of last year's ASR concluded that overall the report is detailed, concise and satisfies the criteria of the relevant standards. The Council should continue their good work. The main comments made have been included below:

1. The Council have implemented their updated AQAP, the measures listed in the report are robust and detailed. This is an example of good practice and should continue in future reports.
2. QA/QC section was comprehensive and detailed with all decisions undertaken by the Council appropriately evidenced. The national and local bias adjustment factor was calculated, and the Council selected the more conservative factor of (0.83). The annualisation and fall of with distance calculations have also been completed appropriately and are explained in this section.
3. The Council have gained approval from the Director of Public Health within the last reporting year. This should continue in future reports.
4. The Council have updated the map and included labels which clearly illustrates the distribution of the monitoring network and allow trends in the data to be visually linked to a location.
5. There are minor formatting and grammar issue within the report, where template text remains in the executive summary section, under the public health approval paragraph. There is inconsistent formatting of pollutant names throughout the report, NO₂ and PM₁₀ are not subscripted in Appendix A.1. in Table C.1, The Council have not included the names of the annualisation sites used. The Council should rectify all formatting issues prior to submission.

Reading 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 2.2. 35 measures are included within Table 2.2, with the type of measure and the progress Reading 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 2.2.

Key completed measures are:

- The Whole Borough Smoke Control Area came into force on 1st December 2024. This was introduced to discourage burning of inappropriate solid fuel reducing PM_{2.5} levels in residential areas where solid fuel burning is prevalent:
<https://www.reading.gov.uk/climate-and-pollution/smoke-control-areas-smoke-control-areas/>

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

- Defra AQ grant funded CALM:ER programme, ([Clean Air Living Matters: Exploring Reading with Schools - Reading Borough Council](#)) raising awareness of air quality in schools and the wider community is due to finish at the end of June 2025.

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

- Procurement of a service provider under the LEVI scheme for the rollout of EV infrastructure in residential areas without off street parking across the borough to encourage the uptake of EVs.
- We will commence a joint project with Public Health to increase our particulate monitoring network to increase knowledge of the levels and sources of PM_{2.5} around the borough to enable appropriate future targeted interventions.
- Traffic Signal Upgrades – we will carry out an air quality assessment into the effectiveness of traffic signal optimisation on key locations in order to improve air quality.

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

- Defra
- Local Enterprise Partnership
- Neighbouring local authorities (West Berkshire, Wokingham, Slough, Bracknell, Windsor & Maidenhead)
- University of Reading
- Design Nature, Stantec

The principal challenges and barriers to implementation that Reading Borough Council anticipates facing are the competing pressures on time and resources to carry out the

work. Although the Local Electric Vehicle Infrastructure work is funded, work outside this is reliant on successfully being awarded funding, most likely from an external source.

Progress on the following measures has been slower than expected:

- Joint project with Public Health to increase our particulate monitoring network to increase knowledge of the levels and sources of PM_{2.5} around the borough to enable appropriate future targeted interventions. This was due to a delay in securing funding, resourcing the project and also a prolonged scoping phase to ensure that the project implemented to ensure the best possible outcomes.

Reading Borough Council anticipates that the measures stated above and in Table 2.2 will achieve compliance in Readings AQMA.

Table 2.2 – Progress on Measures to Improve Air Quality

Measure No.	Measure Title	Category	Classification	Year Measure Introduced in AQAP	Estimated / Actual Completion Date	Organisations Involved	Funding Source	Funding Status	Estimated Cost of Measure	Measure Status	Reduction in Pollutant / Emission from Measure	Key Performance Indicator	Progress to Date	Comments / Barriers to Implementation
RDAQ1_Transport	Vehicle access/speed management (road/ bridge access)	Traffic management	Reduction of speed limits, 20mph zones	2023	TBC	RBC	RBC(CIL)/DFT	Funded/partially funded/ not funded	<£1m	Implementation/Planning	Very minor benefits to PM on a select few kilometres of residential roads	No. of roads made 20mph		Smoother driving leading to a reduction of PM from tyre and brake wear. The scheme is likely to be limited to a handful of residential streets.
RDAQ2_Transport	Parking standards – diesel/ EV differential parking rates	Traffic Management	Emission based parking or permit charges	2024	2026	RBC	RBC	Not funded	< £100k	Planning	Alongside RDAQ5, reductions in NO2 concentrations of up to 2 µg/m3 estimated (b)	Implementation of scheme/ reduction of higher rate vehicles over time	Scheme approved at June 2025 Traffic Mgt Sub Committee	Encourages uptake of cleaner vehicles
RDAQ3_Transport	Reading Buses investment programme and support	Vehicle Fleet Efficiency	Public Transport Improvement	2024	2029	RBC/Reading Buses	Defra/ JAQU/DFT	Not funded	£1m-10m	Planning	Reductions in NO2 concentrations along heavily used bus routes of up to 0.3 µg/m3 (c)	Buses decarbonised	ZEBRA funding bid successful Reading Buses to take delivery of 24 zero emission electric buses in May and June 2025. Existing compressed national gas buses will be cascaded in the fleet with older diesels to be disposed of. A further 8 zero emission electric buses will be delivered in 2026 taking total to 32.	
RDAQ4_Transport	Neighbourhood and Highway Management	Traffic Management	UTC, Congestion management, traffic reduction	2024	2029	RBC	RBC/DFT	Not funded	< £100k	Planning	To be quantified at a later date, once further details become available	emission reductions at key locations. Traffic signals upgraded.	Air quality assessment undertaken into impact of traffic signal upgrades near location of highest NO2 on IDR. Indicates up	We have allocated surplus funding from the Bus Retrofit programme to complete this work, but

Measure No.	Measure Title	Category	Classification	Year Measure Introduced in AQAP	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
													to 1.5ug.m3 improvement can be achieved via optimisation works.	require signoff from JAQU.
RDAQ5_Transport	Implementation of EV Infrastructure Strategy	Promoting Low Emission Transport	Procuring alternative Refuelling infrastructure to promote Low Emission Vehicles, EV recharging, Gas fuel recharging	2024	2025	RBC	RBC/DFT/Private investment	Part funded	£10k - £50k	Implementation	Alongside RDAQ2, reductions in NO2 concentrations of up to 2 µg/m3 estimated (b)	Policy adoption	Reading's Electric Vehicle Charging Infrastructure (EVCI) Strategy adopted March 2024. Council proceeding with Local Electric Vehicle Infrastructure funded contract to implement on-street charging across borough - minimum of 1,500 on street charge points to be installed from 2026	Facilitating and encouraging EV vehicle uptake rates
RDAQ6_Transport	Improve taxi fleet emissions	Promoting low emission transport	Taxi licensing conditions	2024	2029	RBC	RBC	Not funded	£10k - £20k	Planning	On Caversham Road, NO2 reductions of up to 6 µg/m3 are considered possible (d)	Hackneys all EVs by 2029, key milestones achieved on way	Emissions policy in place for hackney fleet	
RDAQ7_Transport	School Streets	Promoting Travel Alternatives	Other	2024	2027	RBC/Schools	RBC/DFT/Schools	Part funded	< £10k	Implementation	Via RDAQ7 and RDAQ12, reductions in NO2 of 0.1 - 0.2 µg/m3 estimated (e) , more on the school streets themselves	New schemes investigated, new school streets implemented	6 schools streets implemented (2 experimental) covering 10 schools. Decision to be taken later this year on making last 2 permanent.	

Measure No.	Measure Title	Category	Classification	Year Measure Introduced in AQAP	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
RDAQ8_Transport	Continue to promote active and low emission travel options	Promoting Travel Alternatives	All	2024	2029	RBC	RBC/DFT	Part funded	£50-£100k per annum	Implementation	Via RDAQ8 and RDAQ16, reductions in NO2 concentrations of up to 0.3 µg/m3 estimated (f)		Council continuing with Active Travel Capability programme promoting walking and cycling including free cycle training and maintenance workshops, Dr Bike maintenance sessions, working with schools to promote active and sustainable transport and develop school travel plans, school streets and bike buses.	
RDAQ9_Transport	Multi-modal enhancements(Traffic corridor, IDR, Oxford Rd)	Traffic Management	Strategic highway improvements, Re-prioritising road space away from cars, inc Access management, Selective vehicle priority, bus priority, high vehicle occupancy lane	2024	2029	RBC	RBC/DFT	Part funded	£10-£15m (BSIP)	Implementation	Minimal impacts expected initially, with modal shift benefits likely cancelled out by slight increases in congestion of other vehicle types (g)	Implementation of schemes	Through Council's Bus Service Improvement Plan (BSIP) funding Council has already delivered two bus lanes on the Oxford Road and one bus lane on London Road. Plan to deliver 5 bus lanes in total across the borough including London Road and Southampton Street. Schemes involve mix of reallocation of highway to bus and cycle lane as well as additional bus lane	To improve wider connectivity with the outskirts of Reading, while reducing traffic congestion.

Measure No.	Measure Title	Category	Classification	Year Measure Introduced in AQAP	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
													where space permits.	
RDAQ11_Transport	Healthy Streets and Quiet Neighbourhoods	Traffic Management	Strategic highway improvements, Re-prioritising road space away from cars, inc Access management, Selective vehicle priority, bus priority, high vehicle occupancy lane	2025	2029	RBC	RBC/DFT	No funding	<1m	Planning	To be quantified at a later date, once further details become available	Investigation of potential schemes, implementation of schemes		Plan is to enable more direct routes between neighbourhoods, key mobility hubs and employment areas, hopefully via sustainable transport improvements, to reduce through travel on the IDR.
RDAQ12_Transport	Concessionary and Discounted Travel for Students	Promoting Low Emission Transport	School Travel Plans	2023	2025	RBC/DFT	DFT	Funded	<100k	Implementation	Via RDAQ7 and RDAQ12, reductions in NO2 of 0.1 - 0.2 µg/m ³ estimated (e), more on the school streets themselves	% Increase use of buses	Through Council's Bus Service Improvement Plan (BSIP) funding Council delivering reduced multi-operator daily bus ticket including reduced rate for Younger People and Children. Continuation of national governments £3 single scheme.	Discounted bus fares for young people, to discourage parents driving kids to schools
RDAQ13_Transport	Travel demand management charges	Traffic Management	Other	2024	2029	RBC	RBC/DFT	Unfunded	£100-£1m	planning	To be quantified once further feasibility studies have been carried out	Investigation of schemes, implementation of scheme.		Vehicles travelling through Reading ('rat-runs') without the need to be in Reading to be charged.

Measure No.	Measure Title	Category	Classification	Year Measure Introduced in AQAP	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
RDAQ14_Transport	Bus Rapid Transit Schemes	Traffic Management	Strategic highway improvements, Re-prioritising road space away from cars, inc Access management, Selective vehicle priority, bus priority, high vehicle occupancy lane	2024	2029	RBC	RBC/DFT	Part funded	£10-£15m (BSIP)	Implementation	Minimal impacts expected initially, with modal shift benefits likely cancelled out by slight increases in congestion of other vehicle types (g)	Implementation of schemes, % increase use of buses	Council continuing delivering Phase 5 of its South Reading (A33) Bus Rapid Transit Scheme due for completion Summer 2025.	Bus Rapid Transit Schemes from the South, Southeast, Southwest, East and West, to connect Central Reading to the wider town.
RDAQ15_Transport	Park and Ride Expansions	Alternatives to Private Vehicle Use	Bus based Park & Ride	2024	2029	RBC	RBC/DfT	Part Funded	£500k	Implementation	Associated air quality improvements likely to occur after the life cycle of this AQAP, so shall be quantified at a later date	Number of extra parking spacing, number of extra people using the buses	Winnersh Park and Ride site expanded with Monday-Friday services recommencing in August 2024 following introduction of Ldn Rd bus lane.	
													MereOak Park and Ride service continues.	
													Hospital and University Park and Ride service continues from MereOak and Thames Valley Park and Ride sites.	
RDAQ16_Transport	New pedestrian and cycling routes	Transport planning and Infrastructure	Cycle network/ Other	2024	2029	RBC	RBC/DFT	Part funded	£1-£5m (Active Travel England Tranche Funding))	Implementation	Via RDAQ8 and RDAQ16, reductions in NO2 concentrations of up to 0.3 µg/m3 estimated (f)	Completion of cycling routes, % increase in cycling	Active Travel Scheme under construction including ATF2 Shinfield Road - complete (future phases subject to funding) and ATF3 Bath	In line with Local Cycling and Walking Infrastructure Plan

Measure No.	Measure Title	Category	Classification	Year Measure Introduced in AQAP	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
													Road - due for construction later 2025. ATF4 Upper Redlands Road crossing constructed summer 2024.	
RDAQ17_Transport	Freight and Delivery. Investigate Introduction of last mile, low emission delivery	Freight and Delivery Management	Delivery and Service Plans	2024	2029	RBC	RBC/DFT	Not funded	<100K	Planning	To be quantified once feasibility studies have been carried out	Investigation of schemes	Through Council's new LTP4; Reading Transport Strategy 2040, commitment to produce Freight Strategy in co-ordination with neighbouring LAs	Such as encouraging 'last-mile' deliveries to be made by zero-emission vehicles
RDAQ18_Transport	Council Fleet Electrification	Promoting Low Emission Transport	Low Emission Vehicles	2024	2029	RBC	RBC	Not funded	100k-1m	Implementation	4000kg NOx per annum	Number of vehicles replaced by EV/ULEV, Reduction of NOx emissions.	Council continuing roll-out of Electric Vehicles within its fleet. 13x Refuse lorries 6x small vans, 4x large vans, 2x cars, 3x miscellaneous	
RDAQ19_Transport	Cross-Thames Travel Scheme	Traffic Management	Strategic highway improvements	2024	2029	RBC	RBC/DFT	Not funded	>10m	planning	Major benefits to NO2 and PM on the IDR and existing bridges. To be quantified once feasibility studies undertaken.	Investigate feasibility	Council has retained commitment to new Cross Thames Travel scheme in its new LTP4, the Reading Transport Strategy 2040.	Associated air quality improvements likely to occur after the life cycle of this AQAP, so shall be quantified at a later date
RDAQ20_Policy	Air quality planning guidance for construction sites and operational developments	Policy Guidance and Development Control	Air Quality Planning and Policy Guidance	2024	2026	RBC	RBC	Not funded	< £10k	Planning	No pollutant concentration reductions expected, but this will act to minimise incremental pollutant increases from new	Implementation of guidance/policy document		Government may phase out SPDs therefore we need to consider how best to achieve this aim.

Measure No.	Measure Title	Category	Classification	Year Measure Introduced in AQAP	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
											development emissions			
RDAQ21_Policy	Wood burning policy and expansion of Smoke Control Area	Policy Guidance and Development Control	Other	2024	2024	RBC	RBC	Not funded	< £10k	Implementation	PM emissions reductions of 10%	Expansion of SCA, Implementation of policy	. Whole Borough Smoke Control Area came into force on 1st December 2024	
RDAQ22_Policy	Use of Wood Burning Enforcement Powers	Policy Guidance and Development Control	Other	2024	ongoing	RBC	RBC/Defra	Not funded	<100k	Planning	PM emissions reductions of 10%	Number of enforcement actions taken	8 warning letters sent in response to complaints since 1 st December 2024, no fines issued.	Resourcing
RDAQ23_Policy	Retrofitting Buildings to support Net Zero Ambitions	Policy Guidance and Development Control	Other	2024	ongoing	RBC	RBC/DESNZ	Part funded	100k-1m	Implementation	NO2 background emission reductions of 5%	Number of retrofitting measures completed, % decarbonised	Decarbonisation of council buildings	In line with ambitions of Reading Climate Action Network. This should reduce the need to rely on gas boilers and solid fuel burning
RDAQ24_Policy	Encourage commercial cooking establishments to incorporate fine particulate filtration systems in their vents	Policy Guidance and Development Control	Other	2025	ongoing	RBC	RBC	Not funded	<10k	Planning	Minor regional benefits to PM	Number of businesses reached, percentage of businesses with filtration systems		
RDAQ25_Policy	Develop a Non-Road Mobile Machinery Emissions Policy	Policy Guidance and Development Control	Air Quality Planning and Policy Guidance	2025	2026	RBC	RBC	Not funded	<10k	Planning	Minor regional benefits to PM	Implementation of policy	Decarbonisation of Council buildings. Rivermead & Palmer Park Leisure Centres ASHP & solar 770 (296kWp) – 2023/24. Civic -ASHPs March 2025 +	London have stringent NRMM policies in place to ensure heavy construction vehicles use as low-emission technologies as practically

Measure No.	Measure Title	Category	Classification	Year Measure Introduced in AQAP	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
													Solar 650 (148kWp). The Hexagon Theatre - aquifer based water source heat pump project progressing, with boreholes already in place and water source heat pumps building works due to start this year.	possible, which could be replicated in Reading
RDAQ26_Policy	Tree Planting and greening	Policy Guidance and Development Control	Air Quality Planning and Policy Guidance	2024	ongoing	RBC	RBC	Not funded	<10k	Implementation	Minor local benefits	Number of trees planted	2023/24 Council trees Gains – 421, Losses – 104, Net gains - +317 Trees on development sites (estimated) Gains – 318, Losses- 132, Net Gains - +186	Align with Tree Strategy, maximise tree planting and greening in 'tree corridors' along the AQMA giving careful consideration to the choice of species to maximise the tolerance to and pollution trapping potential
RDAQ27_Public	airAlert service (pollution warning service)	Public information	Via other mechanisms	2024	2024	RBC	RBC/Defra	Not funded	£5k CAPEX, £5k OPEX	Planning	No direct influence on pollutant concentrations, but provides the public with the opportunity to better protect themselves from pollution spikes	Implementation, number of subscriptions.		Ongoing cost of running service. Link with RDAQ29 & RDAQ31
RDAQ28_Public	School awareness events	Promoting Travel Alternatives	Other	2023	2027	RBC/Design Nature/University of Reading/Stantec	AQ Grant	Funded	£100k-£300k	Implementation	No direct influence on pollutant concentrations, but increases awareness	Number of school/pupils reached	CALM:ER programme being delivered using Defra grant. over two years 2024-25.	

Measure No.	Measure Title	Category	Classification	Year Measure Introduced in AQAP	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
													Programme has delivered activities at 18 primary and 6 secondary schools, reaching over 7000 children.	
RDAQ29_Public	Health promotion work with NHS	Public information	Other	2024	2029	RBC/NHS/PH E		Not funded	£100k-£200k	Planning	No direct influence on pollutant concentrations, but increases awareness	Number of people/ patients reached		Link with better monitoring of PM2.5 (RQAQ31) develop stats on local health impact, increase understanding
RDAQ30_Public	Mobility as a Service (MaaS) scheme	Public Information	Via other mechanisms	2023	2027	RBC		Not funded		Planning	Minor regional benefits to NO2 and PM by encouraging public transport use	% increase in public transport		Enable travellers to reach destinations confidently and conveniently, without the need for private vehicles, utilising a user-friendly transport services mobile app
RDAQ31_Public	Increase PM2.5 Monitoring to help understanding of levels and sources in Reading	Public Information	Other	2024	2028	RBC/Defra/EA	RBC/EA	Not funded	100k-500k	Planning	No direct influence on pollutant concentrations, but enables greater understanding to better target measures in the future	Number of monitoring locations	EA has installed an additional PM2.5 monitor at part of AURN. We are currently scoping for a project to introduce a network of low cost sensors to help understand hyper-local levels and identify sources.	Carry out monitoring of PM2.5 at more locations in Reading, to better understand current situation and trends.

Measure No.	Measure Title	Category	Classification	Year Measure Introduced in AQAP	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
RDAQ32_Public	Smoke Control Area Awareness Campaign	Public Information	Other	2023	2025	RBC/Defra	RBC	Not funded	<10K	Planning	No direct influence on pollutant concentrations, but improves awareness	Publicity measures taken, surveys.	A web page has been developed and publicity was put out in the runup to the new SCA going live on 1st December 2024	Develop and deliver awareness campaign to educate residents of the adverse air quality impacts of solid fuel burning. Materials re-published every winter for maximum impact.
RDAQ33_Public	Bonfire/ garden waste fire awareness campaign	Public Information	Other	2024	2027	RBC	RBC	Not funded	<10K	Planning	No direct influence on pollutant concentrations, but improves awareness	Publicity measures taken, letters sent.		Develop and deliver awareness campaign to educate residents of the adverse air quality impacts of burning garden waste/ bonfires. Materials re-published every autumn for maximum impact.
RDAQ34_Public	Engagement in National Clean Air Day	Public information	Other	2024	ongoing	RBC	RBC	Not funded	<10k	Planning	No direct influence on pollutant concentrations, but improves awareness	Events held locally, Publicity of campaign.	Event held at UoR - workshop with 4 secondary schools. Part of CALM:ER programme. A video was released on social channels on the day.	Encourage schools to be engaged in the topic of air quality. Awareness raising for residents.
RDAQ35_Public	Indoor Air Quality Awareness Campaign	Public Information	Other	2025	ongoing	RBC	RBC	Not funded	<10k	Planning	No direct influence on pollutant concentrations, but improves awareness	Publicity measures taken, surveys.	The importance of good indoor air quality and what affects it is being covered in our CALM:ER programme	Knowledge of the importance of indoor air quality is starting to pick up traction, but public awareness remains limited. No targets or legislation in place.

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

As detailed in Policy Guidance LAQM.PG22 (Chapter 8) and the Air Quality Strategy¹, local authorities are expected to work towards reducing emissions and/or concentrations of fine particulate matter (PM_{2.5}). There is clear evidence that PM_{2.5} (particulate matter smaller 2.5 micrometres) has a significant impact on human health, including premature mortality, allergic reactions, and cardiovascular diseases.

Reading Borough Council is taking the following measures to address PM_{2.5}:

Reading Borough Council recently introduced a borough wide Smoke Control Area (SCA) that came into force on 1st December 2024. There was a publicity campaign in the leadup to the SCA going live to raise awareness around the requirements and the reasons for this. This along with enforcement action where breaches of the rules are identified will help reduce harmful emissions of particulate pollution, including PM_{2.5}. A number of complaints and enquiries were received following the introduction of the SCA, these were investigated, but did not result in any financial penalties being issued.

Reading Borough Council are planning a project to increase PM_{2.5} monitoring across the borough to further our understanding of levels and sources at a hyper local level. This information will be used to raise awareness of the harm to health that fine particulates can have, as well as enabling better targeted actions to be implemented.

A major road resurfacing programme is currently being undertaken. As the breakdown of road surfaces contributes to the suspension of particulates in the air, this work will help to reduce PM_{2.5} from this source.

Although the primary focus of action plan is to address exceedances of NO₂ objectives, we have included actions targeting PM_{2.5} reduction to align with the increasing evidence around PM_{2.5} being extremely harmful to health. The following non transport related measures from table 2.2 above may more directly help to address mortality from anthropogenic PM_{2.5}:

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

Measure No. RDAQ21 – (wood burning policy & SCA expansion,) RDAQ22 – (wood burning enforcement,) RDAQ24 – (fine particulate filters at commercial kitchens,) RDAQ25 – (NRMM emission policy,) RDAQ30 – (Increase PM_{2.5} monitoring,) RDAQ31 – (SCA awareness campaign,) RDAQ32 – (Bonfire awareness campaign.)

In addition to the direct measures we are taking to reduce the impact of particulates on health in Reading, PM_{2.5} is a pollutant that is emitted from many of the same sources as NO₂, so where an action reduces emissions of NO₂, PM_{2.5} will also be reduced.

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

This section sets out the monitoring undertaken within 2024 by Reading 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

Reading Borough Council undertook automatic (continuous) monitoring at 4 sites during 2024. Table A.1 in Appendix A shows the details of the automatic monitoring sites. NB. Local authorities do not have to report annually on the following pollutants: 1,3 butadiene, benzene, carbon monoxide and lead, unless local circumstances indicate there is a problem. The [AQE](#) page present automatic monitoring results for Reading Borough Council, with automatic monitoring results also available through the UK-Air website .

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

3.1.2 Non-Automatic Monitoring Sites

Reading Borough Council undertook non- automatic (i.e. passive) monitoring of NO₂ at 58 sites during 2024. Table A.2 in Appendix A presents the details of the non-automatic sites.

Maps showing the location of the monitoring sites are provided in Appendix D. 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 (NO₂)

Table A.3 and Table A.4 in Appendix A compare the ratified and adjusted monitored NO₂ annual mean concentrations for the past five years with the air quality objective of 40µg/m³. Note that the concentration data presented represents the concentration at the location of the monitoring site, following the application of bias adjustment and annualisation, as required (i.e. the values are exclusive of any consideration to fall-off with distance adjustment).

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

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

As can be seen from figure A.3 below, levels of nitrogen dioxide fell significantly in 2020 and 2021 due to COVID-19 restrictions. Data from 2022 shows that levels did increase again as people adjusted back to a new normal after the restrictions were lifted, although levels were still significantly lower than in 2019. This is likely to be due to a combination of the change to working patterns since COVID-19 resulting in lower numbers of vehicles on the roads and improving vehicle emissions standards. The levels monitored at our AQMS have fallen in successive years since 2022. This indicates that levels have stabilised since COVID-19 restrictions were lifted and that the improving emissions standards of vehicles and other measures taken are resulting in falling levels of NO₂.

All three continuous monitoring stations were significantly below the annual mean objective for NO₂. Concentrations at the Caversham Road AQMS fell from 24µg/m³ in 2023 to 23µg/m³ in 2024. The Kings Road AQMS was moved to London Road to become DEFRA affiliated in 2016. This site has continued to monitor levels of NO₂ below the

annual average NAQO for NO₂ (18µg/m³). NO₂ levels at Oxford Road (20µg/m³) our other roadside monitoring station is also below the annual mean NAQO for NO₂.

The diffusion tube monitoring results follow a similar pattern, being generally lower than in 2023. There were two exceedances in 2024, at Malcolm Place (40.7 µg/m³) and The Pinnacle (40.9 µg/m³) although when distance corrected to the nearest exposure both no longer exceeded the objective (distance corrected levels are 34.5 µg/m³ and 33.1µg/m³ respectively.)

None of the continuous monitoring stations or diffusion tube locations indicate an exceedence of the 1- hour mean objective.

3.2.2 Particulate Matter (PM₁₀)

Table A.6 in Appendix A: Monitoring Results compares the ratified and adjusted monitored PM₁₀ annual mean concentrations for the past five years with the air quality objective of 40µg/m³.

Table A.7 in Appendix A compares the ratified continuous monitored PM₁₀ daily mean concentrations for the past five years with the air quality objective of 50µg/m³, not to be exceeded more than 35 times per year.

3.2.3 Particulate Matter (PM_{2.5})

Table A.8 in Appendix A presents the ratified and adjusted monitored PM_{2.5} annual mean concentrations for the past five years. Following a period of fluctuations, concentrations now appear to be gradually decreasing.

Appendix A: Monitoring Results

Table A.1 – Details of Automatic Monitoring Sites

Site ID	Site Name	Site Type	X OS Grid Ref (Easting)	Y OS Grid Ref (Northing)	Pollutants Monitored	In AQMA?	Which AQMA? ⁽¹⁾	Monitoring Technique	Distance to Relevant Exposure (m) ⁽²⁾	Distance to kerb of nearest road (m) ⁽¹⁾	Inlet Height (m)
Reading AURN	AURN	Urban Background	473441	173198	NO ₂ ; PM ₁₀ ; PM _{2.5} ; O ₃	NO	N/A	Chemiluminescent; TEOM FDMS; UV Photometrics	N/A	100	2.5
RD1	Caversham Rd	Roadside	471153	174429	NO ₂ , PM ₁₀	YES	Reading AQMA	Chemiluminescent; Beta-Attenuation Mass	2	3	1.5
RD3	Oxford Rd	Roadside	468700	174126	NO ₂ , PM ₁₀	YES	Reading AQMA	Chemiluminescent; Beta-Attenuation Mass	9	6	1.5
RD4	London Rd	Roadside	473703	173409	NO ₂ , PM ₁₀	YES	Reading AQMA	Chemiluminescent; Beta-Attenuation Mass	16	3.5	1.5

Notes:

(1) N/A if not applicable

(2) 0m if the monitoring site is at a location of exposure (e.g. installed on the façade of a residential property).

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

Diffusion Tube ID	Site Name	Site Type	X OS Grid Ref (Easting)	Y OS Grid Ref (Northing)	Pollutants Monitored	In AQMA? Which AQMA?	Distance to Relevant Exposure (m) ⁽¹⁾	Distance to kerb of nearest road (m) ⁽²⁾	Tube Co-located with a Continuous Analyser?	Tube Height (m)
RD002	108 Caversham Rd	Roadside	471293	174236	NO2	Reading AQMA	0.0	6.5	No	2.3
RD003	128 Castle Hill	Roadside	470987	173016	NO2	Reading AQMA	0.0	2.5	No	2.3
RD005	14 Church Road	Roadside	471103	174774	NO2	Reading AQMA	0.0	2.5	No	2.3
RD007	162a Castle Hill	Roadside	470835	172992	NO2	Reading AQMA	0.0	8.0	No	2.3
RD008	165 Oxford Rd	Roadside	470717	173373	NO2	Reading AQMA	0.0	4.0	No	2.3
RD009	17 Church Rd Earley	Roadside	474425	172053	NO2	Reading AQMA	0.0	3.0	No	2.3
RD011	181 Kings road	Roadside	472513	173281	NO2	Reading AQMA	12.0	2.0	No	2.3
RD012	197 Caversham Rd	Roadside	471161	174379	NO2	Reading AQMA	0.0	7.0	No	2.3
RD013	21A Friars Walk, Friars Street	Roadside	471373	173584	NO2	Reading AQMA	3.0	1.0	No	2.3
RD014	241 Gosbrook Road	Roadside	471942	174600	NO2	Reading AQMA	0.0	6.0	No	2.3
RD015	252 Oxford Rd	Roadside	470081	173517	NO2	Reading AQMA	0.0	3.5	No	2.3
RD016	276 Kings Road	Roadside	472715	173227	NO2	Reading AQMA	0.0	10.0	No	2.3
RD018	31a Vastern Rd	Roadside	471420	174129	NO2	Reading AQMA	3.0	3.0	No	2.3

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)
RD019	327 Oxford Rd	Roadside	470057	173489	NO2	Reading AQMA	0.0	7.5	No	2.3
RD020	33 Caversham Rd	Roadside	471123	173734	NO2	Reading AQMA	0.0	3.0	No	2.3
RD022	40 George Street	Roadside	471909	174543	NO2	Reading AQMA	0.0	3.5	No	2.3
RD024	419 London Rd	Roadside	473729	173432	NO2	Reading AQMA	0.0	9.0	No	2.3
RD025	42 Shinfield Rd (Opposite)	Kerbside	472953	171764	NO2	Reading AQMA	20.0	1.0	No	2.3
RD026	44 Crown Street	Roadside	471717	172856	NO2	Reading AQMA	0.0	4.5	No	2.3
RD027	45 Prospect Street	Roadside	471558	174919	NO2	Reading AQMA	0.0	1.5	No	2.3
RD029	60 Prospect Street	Roadside	471557	174944	NO2	Reading AQMA	0.0	3.0	No	2.3
RD030	68 George Street	Roadside	471913	174490	NO2	Reading AQMA	0.0	3.0	No	2.3
RD031	689 Oxford Rd	Roadside	468978	173895	NO2	Reading AQMA	0.0	2.5	No	2.3
RD032	744 Oxford Rd	Roadside	468967	173935	NO2	Reading AQMA	0.0	2.5	No	2.3
RD034	Amity Road	Kerbside	473233	173244	NO2	Reading AQMA	1.0	0.5	No	2.3
RD035	Baron Cadagon/Clays	Roadside	471461	174840	NO2	Reading AQMA	0.0	5.0	No	2.3

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)
RD036	Blenheim Terrace, Castle Hill	Roadside	471061	173018	NO2	Reading AQMA	2.0	3.0	No	2.3
RD037 , RD038, RD039	Caversham AQMS	Roadside	471156	174424	NO2	Reading AQMA	5.0	5.0	Yes	1.5
RD040	Caversham Road (Old Post Office)	Roadside	471246	173869	NO2	Reading AQMA	25.0	4.0	No	2.3
RD041	Caversham Road (Pinnacle)	Roadside	471202	173869	NO2	Reading AQMA	3.0	2.0	No	2.3
RD042	Caversham Café	Roadside	471401	174790	NO2	Reading AQMA	0.0	2.0	No	2.3
RD043	Charles Place, 246 Kings Road	Roadside	472592	173253	NO2	Reading AQMA	8.5	2.5	No	2.3
RD044	Christchurch Road (Cintra)	Roadside	472706	172047	NO2	Reading AQMA	4.0	3.0	No	2.3
RD046	Friar St (Nandos)	Roadside	471437	173589	NO2	Reading AQMA	7.0	5.0	No	2.3
RD047	King Oak Flats	Roadside	472015	173223	NO2	Reading AQMA	0.0	5.5	No	2.3
RD048	Malcolm Place	Roadside	471174	173846	NO2	Reading AQMA	4.0	2.0	No	2.3
RD049	Malmaison	Roadside	471509	173705	NO2	Reading AQMA	0.0	2.0	No	2.3
RD050	Malthouse Lane	Roadside	470808	173512	NO2	Reading AQMA	0.0	2.5	No	2.3

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)
RD051	Marlborough House Christchurch Road	Roadside	472742	172024	NO2	Reading AQMA	10.0	4.0	No	2.3
RD052	Red Cow	Roadside	471685	172853	NO2	Reading AQMA	0.0	1.5	No	2.3
RD054	Sackville Street	Roadside	471177	173641	NO2	Reading AQMA	0.0	0.5	No	2.3
RD055	Sainsburys 52-55 Friar Street	Kerbside	471320	173577	NO2	Reading AQMA	3.0	1.0	No	2.3
RD056	Shinfield Rd/Cedar Rd	Kerbside	473363	170479	NO2	Reading AQMA	5.0	1.0	No	2.3
RD057	Shinfield Rd/Whitley Wood Rd	Roadside	473329	170269	NO2	Reading AQMA	10.0	5.0	No	2.3
RD058	Sidmouth Street - Trinity Hall	Roadside	472071	173157	NO2	Reading AQMA	3.0	3.0	No	2.3
RD059	Station Hill (Near Bus stop WN)	Roadside	471324	173820	NO2	Reading AQMA	25.0	1.0	No	2.3
RD060	Station Hill (Near Taxi Rank)	Roadside	471413	173808	NO2	Reading AQMA	20.0	1.0	No	2.3
RD061	Tamar House	Roadside	471508	173663	NO2	Reading AQMA	3.0	2.0	No	2.3
RD062	The Butler	Roadside	470906	173517	NO2	Reading AQMA	5.0	3.5	No	2.3
RD064	Wycliffe Baptist Church	Roadside	473068	173204	NO2	Reading AQMA	20.0	3.5	No	2.3

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)
RD065	Burrcroft Rd	Roadside	468421	172195	NO2	Reading AQMA	6.5	6.0	No	2.3
RD066	Beldivere Court	Kerbside	471964	172922	NO2	Reading AQMA	3.0	1.5	No	2.3
RD067	Constitution Road	Roadside	468825	174012	NO2	Reading AQMA	6.0	4.0	No	2.3
RD068	Raffles House (1a London Rd)	Kerbside	471889	172900	NO2	Reading AQMA	3.0	1.0	No	2.3
RD069	Wokingham Rd	Roadside	473202	173157	NO2	Reading AQMA	5.0	3.0	No	2.3
RD070	Street Sign St Barts Rd	Roadside	473595	173043	NO2	Reading AQMA	21.0	5.0	No	2.3
RD071	Palmer Park Avenue	Kerbside	473880	172850	NO2	Reading AQMA	5.0	1.0	No	2.3
RD072	Music Man Oxford Rd	Kerbside	470538	173422	NO2	Reading AQMA	8.5	1.0	No	2.3

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 NO₂ Monitoring Results: Automatic Monitoring (µg/m³)

Site ID	X OS Grid Ref (Easting)	Y OS Grid Ref (Northing)	Site Type	Valid Data Capture for Monitoring Period (%) ⁽¹⁾	Valid Data Capture 2024 (%) ⁽²⁾	2020	2021	2022	2023	2024
AURN	473441	173198	Urban Background	99	99	15	20	22*	13	11
RD1	471153	174429	Roadside	98	98	25	26	27	24	23
RD3	468700	174126	Roadside	98	98	20	22	23	23	20
RD4	473703	173409	Roadside	98	98	18	21	21	19	18

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

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

☒ Where exceedances of the NO₂ annual mean objective occur at locations not representative of relevant exposure, the fall-off with distance concentration has been calculated and reported concentration provided in brackets for 2024.

Notes:

The annual mean concentrations are presented as µg/m³.

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

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

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 NO₂ Monitoring Results: Non-Automatic Monitoring (µg/m³)

Diffusion Tube ID	X OS Grid Ref (Easting)	Y OS Grid Ref (Northing)	Site Type	Valid Data Capture for Monitoring Period (%) ⁽¹⁾	Valid Data Capture 2024 (%) ⁽²⁾	2020	2021	2022	2023	2024
RD002	471293	174236	Roadside	100.0	100.0	26.5	28.7	29.4	27.6	27.8
RD003	470987	173016	Roadside	100.0	100.0	26.0	32.2	30.3	27.5	26.4
RD005	471103	174774	Roadside	100.0	100.0	24.0	26.1	25.3	24.2	24.1
RD007	470835	172992	Roadside	100.0	100.0	25.3	29.6	26.3	25.0	25.0
RD008	470717	173373	Roadside	100.0	100.0	28.2	30.5	29.9	23.9	29.0
RD009	474425	172053	Roadside	100.0	100.0	27.7	31.5	30.1	28.7	23.3
RD011	472513	173281	Roadside	83.0	83.0	27.9	35.2	32.7	31.7	30.8
RD012	471161	174379	Roadside	100.0	100.0	25.0	29.7	29.3	26.2	26.1
RD013	471373	173584	Roadside	83.0	83.0	30.6	37.6	38.8	33.9	28.7
RD014	471942	174600	Roadside	100.0	100.0	22.9	24.1	24.1	21.9	21.7
RD015	470081	173517	Roadside	92.5	92.5	23.3	27.5	26.0	24.4	24.3

Diffusion Tube ID	X OS Grid Ref (Easting)	Y OS Grid Ref (Northing)	Site Type	Valid Data Capture for Monitoring Period (%) ⁽¹⁾	Valid Data Capture 2024 (%) ⁽²⁾	2020	2021	2022	2023	2024
RD016	472715	173227	Roadside	100.0	100.0	18.7	21.4	22.0	20.8	19.4
RD018	471420	174129	Roadside	100.0	100.0	23.7	25.4	24.8	23.9	23.2
RD019	470057	173489	Roadside	100.0	100.0	28.5	31.1	31.0	29.9	30.3
RD020	471123	173734	Roadside	81.1	81.1	27.0	32.4	30.1	32.9	34.1
RD022	471909	174543	Roadside	100.0	100.0	27.2	32.0	33.6	29.5	29.1
RD024	473729	173432	Roadside	100.0	100.0			20.0	26.4	25.7
RD025	472953	171764	Kerbside	92.5	92.5				15.5	15.6
RD026	471717	172856	Roadside	100.0	100.0	22.3	26.8	24.2	21.7	22.6
RD027	471558	174919	Roadside	100.0	100.0	24.6	26.9	25.1	24.2	23.2
RD029	471557	174944	Roadside	100.0	100.0	21.3	24.9	22.9	23.0	21.3
RD030	471913	174490	Roadside	90.6	90.6	18.5	21.9	23.3	24.2	22.6
RD031	468978	173895	Roadside	100.0	100.0	28.8	28.7	30.9	27.9	28.9
RD032	468967	173935	Roadside	83.0	83.0	32.6	33.1	32.3	30.2	30.7

Diffusion Tube ID	X OS Grid Ref (Easting)	Y OS Grid Ref (Northing)	Site Type	Valid Data Capture for Monitoring Period (%) ⁽¹⁾	Valid Data Capture 2024 (%) ⁽²⁾	2020	2021	2022	2023	2024
RD034	473233	173244	Kerbside	100.0	100.0	21.1	24.1	22.6	22.6	20.2
RD035	471461	174840	Roadside	100.0	100.0	28.5	31.5	27.2	25.2	25.2
RD036	471061	173018	Roadside	100.0	100.0	26.8	29.8	27.6	26.8	28.4
RD037 , RD038, RD039	471156	174424	Roadside	90.6	90.6				24.3	24.2
RD040	471246	173869	Roadside	83.0	83.0				37.1	31.7
RD041	471202	173869	Roadside	81.1	81.1				36.1	40.9
RD042	471401	174790	Roadside	100.0	100.0	25.6	29.8	27.8	25.9	25.9
RD043	472592	173253	Roadside	90.6	90.6	28.2	30.6	32.1	30.9	27.8
RD044	472706	172047	Roadside	83.0	83.0				22.8	22.7
RD046	471437	173589	Roadside	100.0	100.0	28.5	35.9	38.0	36.7	37.7
RD047	472015	173223	Roadside	100.0	100.0	20.1	24.1	22.5	21.1	20.2
RD048	471174	173846	Roadside	100.0	100.0	40.0	42.1	43.3	42.6	40.7
RD049	471509	173705	Roadside	100.0	100.0	29.1	33.6	35.0	33.2	34.5

Diffusion Tube ID	X OS Grid Ref (Easting)	Y OS Grid Ref (Northing)	Site Type	Valid Data Capture for Monitoring Period (%) ⁽¹⁾	Valid Data Capture 2024 (%) ⁽²⁾	2020	2021	2022	2023	2024
RD050	470808	173512	Roadside	90.6	90.6	23.7	25.1	24.9	23.2	22.9
RD051	472742	172024	Roadside	100.0	100.0				18.1	21.1
RD052	471685	172853	Roadside	100.0	100.0	24.5	28.7	26.9	24.6	24.3
RD054	471177	173641	Roadside	100.0	100.0	23.6	27.3	26.8	25.8	24.3
RD055	471320	173577	Kerbside	100.0	100.0	30.0	38.2	37.6	38.9	35.0
RD056	473363	170479	Kerbside	100.0	100.0	23.8	30.7	28.7	26.9	24.7
RD057	473329	170269	Roadside	100.0	100.0	20.1	24.3	22.2	20.9	19.1
RD058	472071	173157	Roadside	90.6	90.6	23.2	25.2	25.2	25.0	24.5
RD059	471324	173820	Roadside	100.0	100.0	31.3	32.6	29.0	31.9	32.7
RD060	471413	173808	Roadside	90.6	90.6	26.9	29.1	27.4	29.8	26.0
RD061	471508	173663	Roadside	92.5	92.5				36.5	39.6
RD062	470906	173517	Roadside	81.1	81.1	24.7	28.8	30.4	27.2	26.6
RD064	473068	173204	Roadside	90.6	90.6	28.5	33.3	31.5	31.3	29.4

Diffusion Tube ID	X OS Grid Ref (Easting)	Y OS Grid Ref (Northing)	Site Type	Valid Data Capture for Monitoring Period (%) ⁽¹⁾	Valid Data Capture 2024 (%) ⁽²⁾	2020	2021	2022	2023	2024
RD065	468421	172195	Roadside	100.0	92.5					17.3
RD066	471964	172922	Kerbside	100.0	92.5					21.8
RD067	468825	174012	Roadside	100.0	92.5					19.8
RD068	471889	172900	Kerbside	100.0	92.5					24.6
RD069	473202	173157	Roadside	50.0	25.0					26.4
RD070	473595	173043	Roadside	100.0	50.9					15.4
RD071	473880	172850	Kerbside	100.0	50.9					18.7
RD072	470538	173422	Kerbside	100.0	50.9					24.7

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

☒ Diffusion tube data has been bias adjusted.

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

Notes:

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

Exceedances of the NO₂ annual mean objective of $40\mu\text{g}/\text{m}^3$ are shown in **bold**.

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

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 NO₂ Concentrations

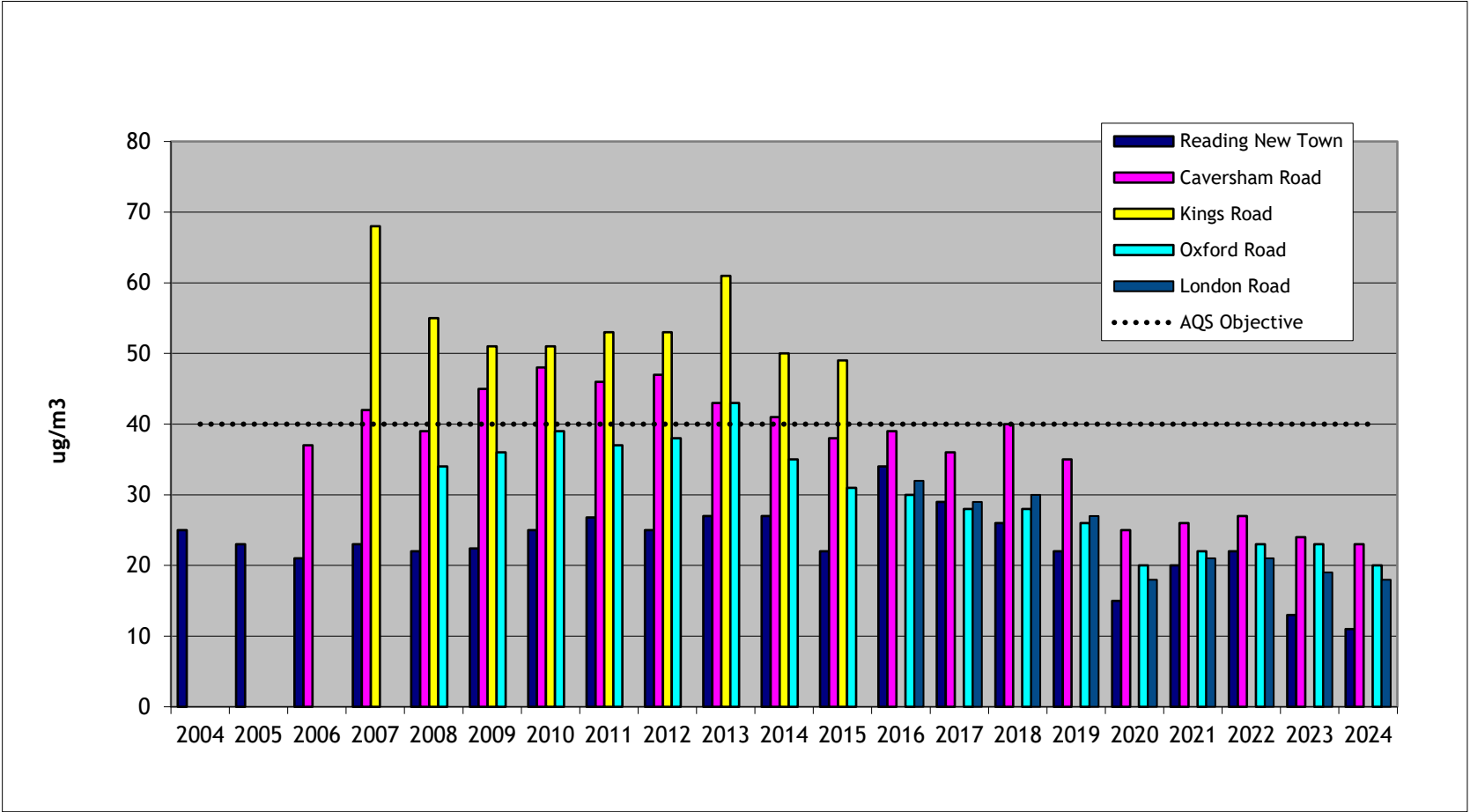


Table A.5 – 1-Hour Mean NO₂ Monitoring Results, Number of 1-Hour Means > 200µg/m³

Site ID	X OS Grid Ref (Easting)	Y OS Grid Ref (Northing)	Site Type	Valid Data Capture for Monitoring Period (%) ⁽¹⁾	Valid Data Capture 2024 (%) ⁽²⁾	2020	2021	2022	2023	2024
AURN	473441	173198	Urban Background	92.5	92.5	0	0	0(95)	0	0
RD1	471153	174429	Roadside	95.5	95.5	0	0	1	0	0
RD3	468700	174126	Roadside	96.9	96.9	0	0	0	0	0
RD4	473703	173409	Roadside	99.5	99.5	0	0	0	0	0

Notes:

Results are presented as the number of 1-hour periods where concentrations greater than 200µg/m³ have been recorded.

Exceedances of the NO₂ 1-hour mean objective (200µg/m³ 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 PM₁₀ Monitoring Results (µg/m³)

Site ID	X OS Grid Ref (Easting)	Y OS Grid Ref (Northing)	Site Type	Valid Data Capture for Monitoring Period (%) ⁽¹⁾	Valid Data Capture 2024 (%) ⁽²⁾	2020	2021	2022	2023	2024
AURN	473441	173198	Urban Background	100	100	15	15	16	12	10
RD1	471153	174429	Roadside	99	99	20	20	25	21	21
RD3	468700	174126	Roadside	97	97	18	17	20	17	16
RD4	473703	173409	Roadside	95	95	19	17	18	18	15

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

Notes:

The annual mean concentrations are presented as µg/m³.

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

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

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

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

Figure A.2 – Trends in Annual Mean PM₁₀ Concentrations

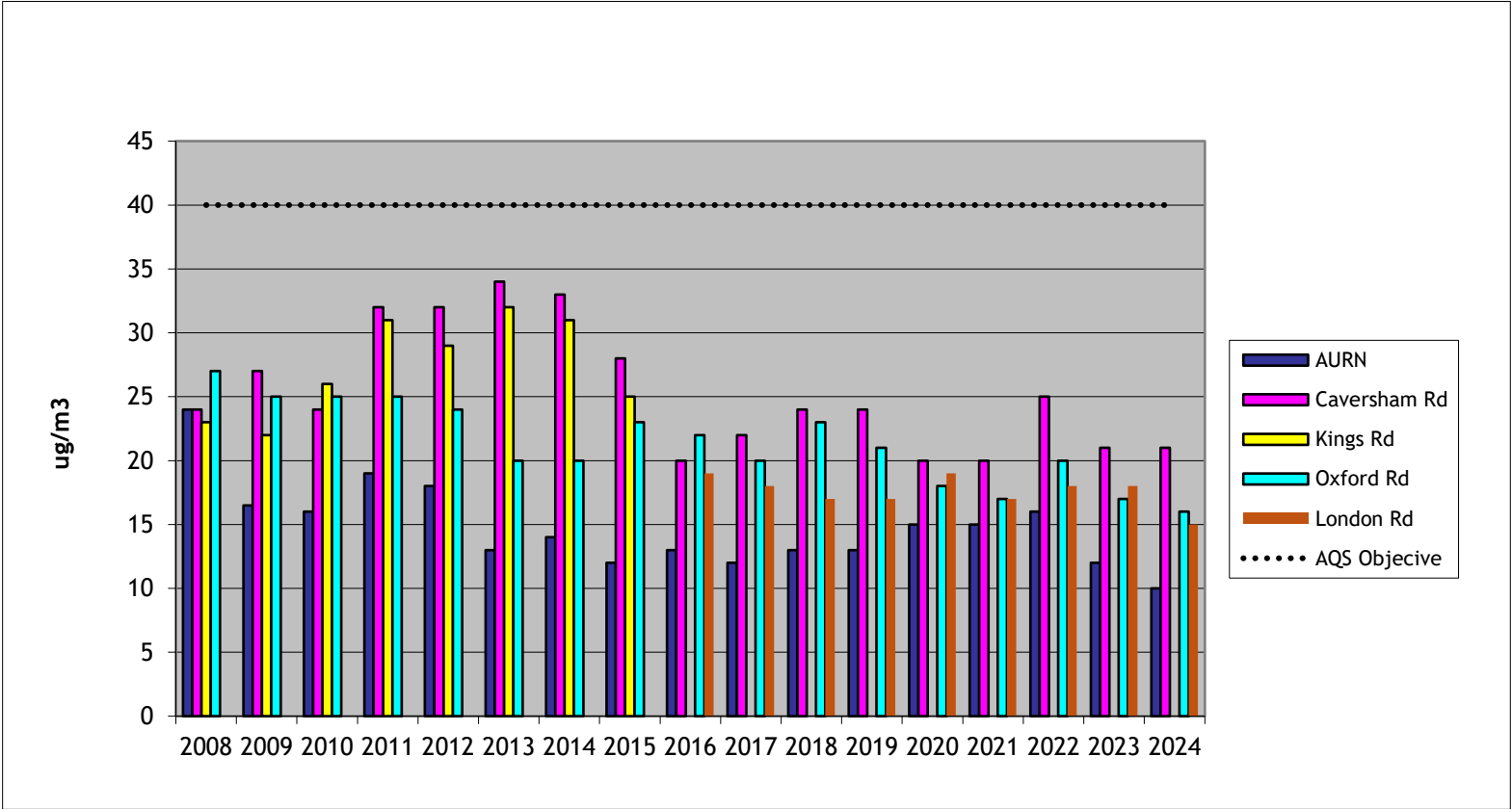


Table A.7 – 24-Hour Mean PM₁₀ Monitoring Results, Number of PM₁₀ 24-Hour Means > 50µg/m³

Site ID	X OS Grid Ref (Easting)	Y OS Grid Ref (Northing)	Site Type	Valid Data Capture for Monitoring Period (%) ⁽¹⁾	Valid Data Capture 2024 (%) ⁽²⁾	2020	2021	2022	2023	2024
AURN	473441	173198	Urban Background	100	100	0	1	0	0	0
RD1	471153	174429	Roadside	99	99	5	2	6	0	2
RD3	468700	174126	Roadside	97	97	2	0	1	0	0
RD4	473703	173409	Roadside	95	95	3	2	0	2	0

Notes:

Results are presented as the number of 24-hour periods where daily mean concentrations greater than 50µg/m³ have been recorded.

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

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

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

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

Table A.8 – Annual Mean PM_{2.5} Monitoring Results (µg/m³)

Site ID	X OS Grid Ref (Easting)	Y OS Grid Ref (Northing)	Site Type	Valid Data Capture for Monitoring Period (%) ⁽¹⁾	Valid Data Capture 2024 (%) ⁽²⁾	2020	2021	2022	2023	2024
AURN	473441	173198	Urban Background	100	100	8	8	8	7	7

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

Notes:

The annual mean concentrations are presented as µg/m³.

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 2024

Table B.1 – NO₂ 2024 Diffusion Tube Results (µg/m³)

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
RD002	471293	174236	33.9	25.3	29.1	26.2	35.1	29.9	30.6	25.7	35.9	40.6	36.8	29.3	31.5	27.8		
RD003	470987	173016	32.4	26.6	24.1	26.9	30.8	30.2	28.8	25.9	34.2	33.6	37.9	28.9	30.0	26.4	-	
RD005	471103	174774	31.1	28.6	25.7	24.5	25.6	24.9	27.5	25.6	25.6	29.9	33.7	26.4	27.4	24.1	-	
RD007	470835	172992	34.6	29.8	25.0	23.4	27.7	27.8	25.4	24.2	32.3	28.8	35.1	26.9	28.4	25.0	-	
RD008	470717	173373	27.2	37.8	37.2	30.6	34.7	31.1	32.6	29.8	31.1	34.6	35.1	33.5	32.9	29.0	-	
RD009	474425	172053	27.3	30.4	29.5	25.6	27.4	31.9	20.2	16.4	22.9	25.7	33.6	26.7	26.5	23.3	-	
RD011	472513	173281	38.8	34.7	34.0	34.4	38.7	33.4	33.1	31.5			40.7	30.9	35.0	30.8	-	
RD012	471161	174379	34.7	37.5	38.4	28.9	28.2	26.4	22.7	20.2	21.9	29.2	38.1	29.4	29.6	26.1	-	
RD013	471373	173584			31.7	26.6	33.5	30.1	28.0	28.5	38.9	36.2	40.7	31.5	32.6	28.7	-	
RD014	471942	174600	30.0	27.5	25.9	24.3	22.0	19.9	24.7	20.5	20.2	28.0	30.0	22.9	24.7	21.7	-	
RD015	470081	173517	30.4	29.4	24.6		28.7	23.4	26.3	21.8	26.9	34.9	31.0	26.6	27.6	24.3	-	
RD016	472715	173227	24.5	17.9	25.0	18.4	21.5	18.2	21.5	17.7	22.8	27.7	28.6	20.5	22.0	19.4	-	
RD018	471420	174129	28.8	30.6	28.3	21.8	23.1	21.9	25.9	22.9	20.7	30.4	34.5	27.8	26.4	23.2	-	
RD019	470057	173489	31.7	36.1	38.6	32.6	35.7	31.8	34.3	34.1	32.7	40.0	39.5	26.4	34.5	30.3	-	
RD020	471123	173734	56.8		37.1	33.0	34.7	32.6	33.9		38.1	44.6	38.9	37.9	38.8	34.1	-	
RD022	471909	174543	39.9	34.7	36.5	34.4	30.7	38.2	36.2	20.0	31.5	34.4	43.0	17.0	33.0	29.1	-	
RD024	473729	173432	28.6	27.2	27.2	26.0	29.6	29.8	31.6	28.7	31.9	30.0	29.6	29.8	29.2	25.7	-	
RD025	472953	171764	21.1	21.3	16.6	13.1	15.7		13.4	11.4	14.9	23.1	27.2	17.7	17.8	15.6	-	

RD026	471717	172856	29.6	24.0	22.8	19.9	26.0	23.1	23.1	21.0	27.9	31.1	35.3	24.5	25.7	22.6	-	
RD027	471558	174919	33.6	32.0	27.4	23.9	21.2	20.5	25.4	21.1	25.3	29.0	33.9	23.3	26.4	23.2	-	
RD029	471557	174944	31.5	25.6	18.9	20.4	22.3	22.9	22.2	21.0	25.5	28.0	30.5	21.6	24.2	21.3	-	
RD030	471913	174490	29.6	24.2	24.1	21.1	22.6	21.2	23.5	35.1	23.7	28.3	28.9		25.6	22.6	-	
RD031	468978	173895	34.8	33.0	36.9	30.4	31.8	27.5	32.0	31.1	31.2	34.9	41.1	29.3	32.8	28.9	-	
RD032	468967	173935	36.0	37.8	34.7	30.7			36.7	30.3	37.3	38.3	40.1	26.8	34.9	30.7	-	
RD034	473233	173244	24.6	27.8	23.4	18.0	18.6	19.9	22.4	19.3	21.7	29.4	29.5	21.0	23.0	20.2	-	
RD035	471461	174840	37.7	15.0	29.9	31.3	28.5	31.4	31.0	25.3	27.6	22.0	36.4	27.1	28.6	25.2	-	
RD036	471061	173018	39.1	31.2	29.6	28.8	32.6	30.5	31.2	28.4	28.6	32.0	43.1	32.3	32.3	28.4	-	
RD037	471156	174424	28.9	26.7	26.5	23.5	27.9	22.3	28.3	28.3	29.3				-	-	-	Triplicate Site with RD037 , RD038 and RD039 - Annual data provided for RD039 only
RD038	471156	174424	24.4	24.2	27.0	22.0	28.0	23.7	29.8	28.5	28.9	34.4	29.9		-	-	-	Triplicate Site with RD037 , RD038 and RD039 - Annual data provided for RD039 only
RD039	471156	174424	26.8	27.0	22.3	20.6	29.5	24.1	27.1	28.7	27.5	31.6	35.4		27.5	24.2	-	Triplicate Site with RD037 , RD038 and RD039 - Annual data provided for RD039 only
RD040	471246	173869	40.8	40.9	34.2	32.1	31.0		32.9	32.5	32.7	35.3	48.4		36.1	31.7	-	
RD041	471202	173869	48.1	48.0	46.9	42.4	40.7	40.4	48.0		48.7	48.9	52.4		46.5	40.9	34.5	
RD042	471401	174790	36.6	27.8	24.6	26.0	30.7	28.6	26.7	23.1	34.3	31.1	35.6	28.4	29.5	25.9	-	
RD043	472592	173253	37.6	36.2	31.3	28.6	30.2	33.1	29.8	25.0	32.4		33.1	30.5	31.6	27.8	-	
RD044	472706	172047	29.2	27.9	25.1	20.2	25.5		22.6	20.8	28.1		33.5	24.9	25.8	22.7	-	
RD046	471437	173589	45.6	42.4	36.6	40.6	42.9	39.2	43.6	36.0	52.9	40.6	50.7	43.1	42.8	37.7	30.7	
RD047	472015	173223	25.5	25.1	20.6	21.7	23.3	21.5	21.6	18.0	24.7	25.4	25.6	22.5	23.0	20.2	-	
RD048	471174	173846	41.3	51.8	54.2	43.4	44.5	43.6	52.0	43.5	41.4	37.9	56.6	45.0	46.3	40.7	33.1	
RD049	471509	173705	43.1	38.6	37.6	37.3	35.9	32.0	40.1	37.6	38.6	47.8	47.4	35.0	39.3	34.5	-	
RD050	470808	173512	29.9	26.6	27.9	21.1	24.7	19.7	23.7	23.6	27.0	31.0	30.7		26.0	22.9	-	
RD051	472742	172024	29.0	27.5	26.5	17.4	21.3	19.9	21.3	17.6	19.4	26.7	36.7	24.2	24.0	21.1	-	

RD052	471685	172853	32.2	27.5	25.5	26.3	29.5	24.0	24.1	20.8	30.7	32.8	36.5	20.8	27.6	24.3	-	
RD054	471177	173641	34.1	33.9	26.3	23.7	27.9	25.2	27.9	25.0	22.1	29.9	30.6	25.0	27.6	24.3	-	
RD055	471320	173577	48.0	40.0	33.9	39.0	45.1	39.0	40.9	36.5	27.8	44.1	40.6	42.1	39.7	35.0	-	
RD056	473363	170479	31.3	29.7	27.3	24.4	26.3	26.9	28.8	24.8	28.2	31.8	32.1	24.7	28.0	24.7	-	
RD057	473329	170269	26.0	22.4	23.6	19.8	20.7	19.4	19.6	18.3	20.9	22.9	27.9	18.6	21.7	19.1	-	
RD058	472071	173157	30.5	28.4	28.8	23.5	26.4	26.2	25.9		26.9	30.7	35.7	23.4	27.9	24.5	-	
RD059	471324	173820	45.6	34.2	32.7	34.0	43.0	38.5	36.0	30.1	41.3	38.0	43.0	29.1	37.1	32.7	-	
RD060	471413	173808	30.0	29.1	23.0	28.3	29.2	32.2	26.9		29.0	35.8	34.9	26.6	29.6	26.0	-	
RD061	471508	173663	42.1	42.0	46.2	43.6	43.9	44.0		49.0	44.4	44.5	51.2	44.8	45.1	39.6	33.5	
RD062	470906	173517	33.7	29.7	32.2	29.9	29.6	23.9	29.0	24.8	34.4		35.2		30.2	26.6	-	
RD064	473068	173204	38.7	37.6	27.9	31.7	31.0	28.2	31.9		29.4	36.4	44.7	29.9	33.4	29.4	-	
RD065	468421	172195		22.5	20.3	14.6	17.5	14.3	15.5	15.4	19.8	27.3	28.1	20.9	19.7	17.3	-	
RD066	471964	172922		27.5	24.0	19.2	24.2	23.8	23.3	20.9	24.7	30.8	34.1	20.6	24.8	21.8	-	
RD067	468825	174012		23.4	24.6	21.6	24.0	24.6	22.6	19.7	23.8	26.0	14.2	22.8	22.5	19.8	-	
RD068	471889	172900		30.0	26.5	23.2	30.4	27.0	26.4	22.5	28.2	33.1	36.4	23.5	27.9	24.6	-	
RD069	473202	173157							23.6	25.0	26.4				25.0	26.4	-	
RD070	473595	173043							15.4	13.1	16.2	20.9	25.1	17.8	18.1	15.4	-	
RD071	473880	172850							20.6	17.6	22.4	25.4	25.4	20.3	21.9	18.7	-	
RD072	470538	173422							27.1	19.8	32.1	32.4	39.5	23.3	29.0	24.7	-	

☒ All erroneous data has been removed from the NO₂ 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.

☒ Reading Borough Council confirm that all 2024 diffusion tube data has been uploaded to the Diffusion Tube Data Entry System.

Notes:

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

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

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 Reading Borough Council During 2024

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

Additional Air Quality Works Undertaken by Reading Borough Council During 2024

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

QA/QC of Diffusion Tube Monitoring

Reading Borough Council operate a network of NO₂ passive diffusion tubes, the tubes are supplied and analysed by Gradko International using the preparation method 50% TEA in acetone. The tubes are exposed for approximately one month following the standard exposure calendar, all sites use single tubes other than the co-location studies where triplicate tubes are deployed.

The Gradko laboratory is UKAS accredited, follows the procedures set out in the harmonisation practical guidance and participates in the AIR-PT NO₂ proficiency testing scheme.

Under the AIR-PT scheme AIR-PT round 55-68, (Feb 2023 – Feb 2025) Gradko tubes were found to have 100% satisfactory results for samples tested using Z- score performance in all but round 68 where they achieved 50% satisfactory results.

Distance correction has been applied to NO₂ diffusion tube results where monitoring sites are not representative of public exposure using the NO₂ fall-off with distance calculator.

Diffusion Tube Annualisation

Annualisation is required for any site with data capture less than 75% but greater than 25%. Annualisation was required at diffusion tube locations in 2024. This was calculated in accordance with LAQM TG (22) using the diffusion Tube Data Processing Tool and is presented in Table C.1 below

Table C.1 – Annualisation Summary (concentrations presented in µg/m³)

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
RD069	1.1691	1.2773	1.1346	1.2163	1.1993	25.0	30.0
RD070	0.9665	0.9608	0.9877	0.9566	0.9679	18.1	17.5
RD071	0.9665	0.9608	0.9877	0.9566	0.9679	21.9	21.2
RD072	0.9665	0.9608	0.9877	0.9566	0.9679	29.0	28.1

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_x/NO₂ continuous analysers. Alternatively, the national database of diffusion tube co-location surveys provides bias factors for the relevant laboratory and preparation method.

Reading Borough Council have applied a national bias adjustment factor of 0.88 to the 2024 monitoring data. A summary of bias adjustment factors used by Reading Borough Council 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
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2024	National	04/25	0.88
2023	National	03/23	0.83
2022	National	03/22	0.82
2021	National	03/21	0.83
2020	National	03/21	0.82

Table C.3 – Local Bias Adjustment Calculation

	Local Bias Adjustment Input 1	Local Bias Adjustment Input 2	Local Bias Adjustment Input 3	Local Bias Adjustment Input 4	Local Bias Adjustment Input 5
Periods used to calculate bias	11				
Bias Factor A	0.86 (0.8 - 0.92)				
Bias Factor B	17% (8% - 25%)				
Diffusion Tube Mean ($\mu\text{g}/\text{m}^3$)	27.5				
Mean CV (Precision)	5.9%				
Automatic Mean ($\mu\text{g}/\text{m}^3$)	23.6				
Data Capture	98%				
Adjusted Tube Mean ($\mu\text{g}/\text{m}^3$)	24 (22 - 25)				

Notes:

Reading carried out one local co-location study at the RBC owned continuous roadside monitor on Caversham Road (combined adjustment factor 0.85). The average bias correction factor from the national dataset was 0.88. We have used the national figure, (as in the previous 17 years) in order to create a consistent approach, enabling trends in the historic data to be more easily identified. This year the national figure is also more conservative than the local figure.

NO₂ Fall-off with Distance from the Road

Wherever possible, monitoring locations are representative of exposure. However, where this is not possible, the NO₂ concentration at the nearest location relevant for exposure has been estimated using the Diffusion Tube Data Processing Tool/NO₂ fall-off with distance calculator available on the LAQM Support website. Where appropriate, non-automatic annual mean NO₂ concentrations corrected for distance are presented in Table B.1.

Table C.4 – Non-Automatic NO₂ Fall off With Distance Calculations (concentrations presented in µg/m³)

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
RD041	2.0	5.0	40.9	11.0	34.5	
RD046	5.0	12.0	37.7	11.0	30.7	
RD048	2.0	6.0	40.7	11.0	33.1	
RD061	2.0	5.0	39.6	11	33.5	

QA/QC of Automatic Monitoring

The data management and Local Site Operator (LSO) duties for any automatic monitoring sites within Reading Borough Council are completed by Ricardo Energy and Environment. Calibrations, audits and servicing are all carried out in accordance with Defra best practice. The data ratification process is fully LAQM TG (22) compliant. All data presented in the report has been ratified. Live and historic data is available at the [Air Quality England](#) website.

PM₁₀ and PM_{2.5} Monitoring Adjustment

The type of PM₁₀/PM_{2.5} monitors utilised within Reading Borough Council do not require the application of a correction factor.

Automatic Monitoring Annualisation

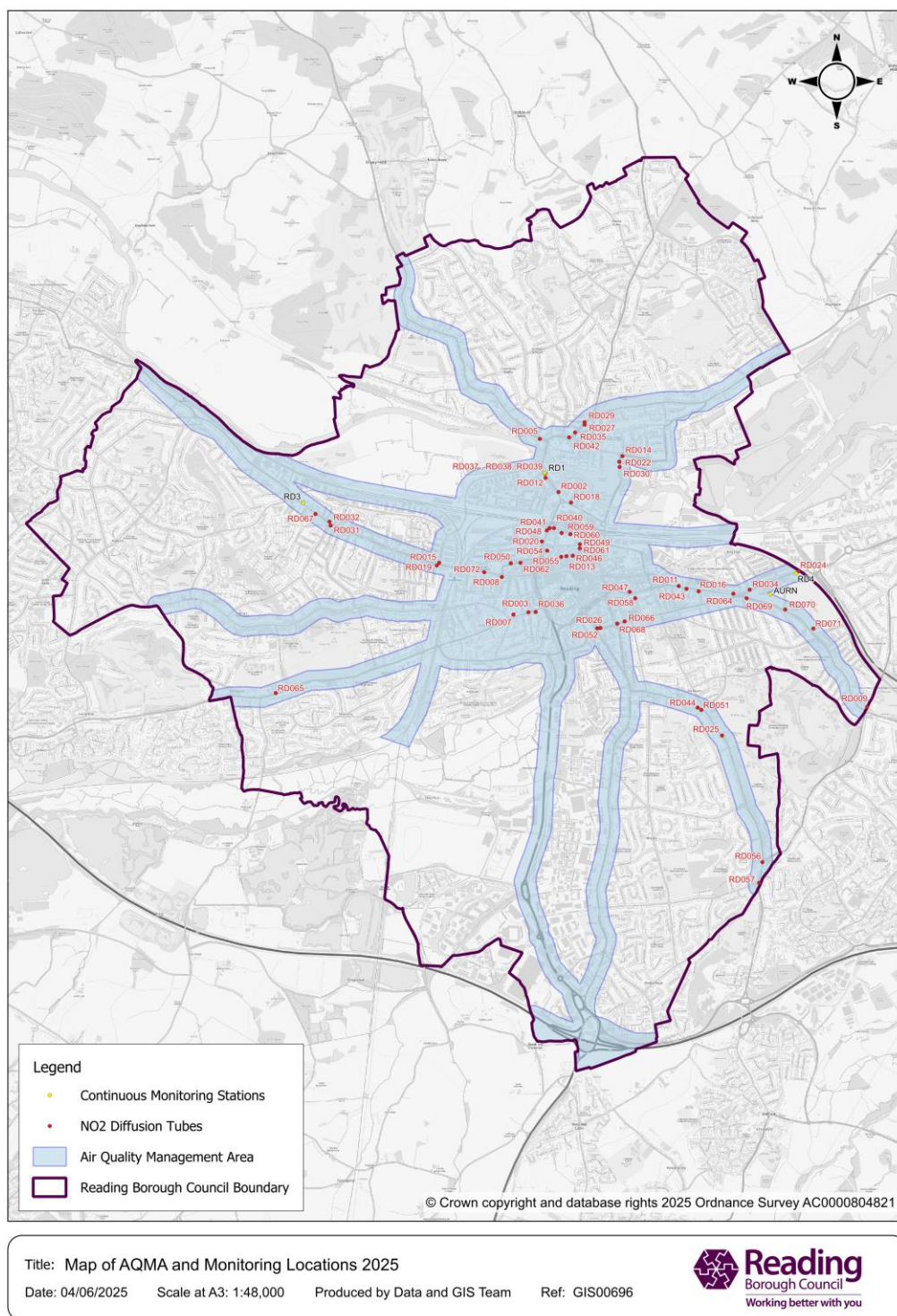
All automatic monitoring locations within Reading Borough Council recorded data capture of greater than 75% therefore it was not required to annualise any monitoring data.

NO₂ Fall-off with Distance from the Road

Wherever possible, monitoring locations are representative of exposure. However, where this is not possible, the NO₂ concentration at the nearest location relevant for exposure has been estimated using the NO₂ fall-off with distance calculator available on the LAQM Support website. Where appropriate, automatic annual mean NO₂ concentrations corrected for distance are presented in Table A.3.

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

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



Appendix E: Summary of Air Quality Objectives in England

Table E.1 – Air Quality Objectives in England²

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

² The units are in microgrammes of pollutant per cubic metre of air (µg/m³).

Glossary of Terms

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

References

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