Broxbourne Borough Council

2025 Annual Status Report

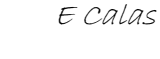
November 2025

Document Control Sheet

Identification	
Client	Broxbourne Borough Council
Document Title	Broxbourne Borough Council 2025 Air Quality Annual Status Report
Bureau Veritas Ref No.	AIR21830894

Contact Details		
Company Name	Bureau Veritas UK Limited	Broxbourne Borough Council
Contact Name	Ellénore Calas	Daniel Piggott
Position	Senior Consultant	Environment Health
Address	5th Floor, 100 Lower Thames, London, EC3R 6DL	Broxbourne Borough Council Bishops' College Churchgate Cheshunt EN8 9XQ
Email	ellenore.calas@bureauveritas.com	Daniel.piggott@broxbourne.gov.uk

Version Control				
Version	**Date**	**Author**	**Reason for Issue/Summary of Changes**	**Status**
1.0	June 2025	J Cai	Draft for Comment	Draft
2.0	July 2025	J Cai	Updated	Draft
3.0	November 2025	J Cai	Updated	Final

	Name	Job Title	Signature
Prepared By	J Cai	Air Quality Consultant	
Approved By	E Calas	Senior Consultant	

BOROUGH OF BROXBOURNE

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: November, 2025

Information	Broxbourne Borough Council Details
Local Authority Officer	Daniel Piggott
Department	Environment Health
Address	Broxbourne Borough Council Bishops' College Churchgate Cheshunt EN8 9XQ
Telephone	01992 785555
E-mail	envhealth@broxbourne.gov.uk
Report Reference Number	Broxbourne 2025 ASR
Date	November 2025

Local Responsibilities and Commitment

This ASR was prepared by Bureau Veritas on behalf of the Environmental Health Department of Broxbourne Borough Council with the support and agreement of the following officers and departments:

Rebecca Broadbelt – Head of Environmental Health & Licensing

Daniel Piggott – Environmental Health Technical Officer

This ASR has been approved by Danielle Emery, Director, Broxbourne Borough Council.

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

If you have any comments on this ASR please send them to Environmental Health Team at:

Address: Environmental Health, Broxbourne Borough Council, Bishops' College Churchgate, Cheshunt, EN8 9XQ

Telephone: 01992 785 555

Email: envhealth@broxbourne.gov.uk

Executive Summary: Air Quality in Our Area

Air Quality in Broxbourne 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_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. PM_{10} refers to particles under 10 micrometres. Fine particulate matter or $PM_{2.5}$ are particles under 2.5 micrometres.

Broxbourne is a unitary council in the Southeast of England, with a population of approximately 99,007[1] (2021). It is located in the southeast of Hertfordshire.

There are currently three Air Quality Management Areas (AQMAs) declared within the borough. All have been designated due to exceedances of the annual mean air quality objective (AQO) for nitrogen dioxide (NO_2) and NO_2 1 hour mean AQO. The elevated concentrations are caused primarily by road traffic emissions. The AQMAs are:

- AQMA 1 Arlington Crescent to Abbey Road, first declared in February 2004 and amended in March 2016;
- AQMA 4 Eleanor Cross Road/Monarchs Way, declared in March 2016; and
- AQMA 6 Great Cambridge Road (A10) & College Road, declared in May 2017.

In 2024, Broxbourne Borough Council undertook passive monitoring (non-automatic monitoring) for nitrogen dioxide (NO_2) at 44 sites across the district. No automatic monitoring was carried out.

During 2024, there was one exceedance of the annual mean AQS Objective recorded at Site BB54 with an annual mean of 40.6 µg/m^3. One site (BB51) recorded concentration within 10% of the NO_2 annual mean AQS objective (above 36µg/m^3). Both sites are located within AQMAs 4. Both sites are however not located at a site of relevant exposure, and following fall-off with distance correction calculations, all concentrations were below 36µg/m^3.

The current monitoring locations are constantly reviewed with respect to any hotspot area(s) of pollution being identified.

No sites reported a concentration in excess of 60µg/m^3, in line with LAQM guidance it is not likely there were any exceedances of the 1-hour NO_2 AQS objective in 2024.

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.

[1] ONS. Estimates of the population for the UK, England, Wales, Scotland and Northern Ireland. Available at: https://www.ons.gov.uk/peoplepopulationandcommunity/populationandmigration/populationestimates/datasets/populationestimatesforukenglandandwalesscotlandandnorthernireland

The Environmental Improvement Plan[2] sets out actions that will drive continued improvements to air quality and to meet the new national interim and long-term targets for fine particulate matter ($PM_{2.5}$), the pollutant of most harmful to human health. The Air Quality Strategy[3] provides more information on local authorities' responsibilities to work towards these new targets and reduce fine particulate matter in their areas.

The Road to Zero[4] details the Government's approach to reduce exhaust emissions from road transport through a number of mechanisms, in balance with the needs of the local community. This is extremely important given that cars are the most popular mode of personal travel and the majority of Air Quality Management Areas (AQMAs) are designated due to elevated concentrations heavily influenced by transport emissions.

The key measure in 2024 was the adoption and publication of the Air Quality Action Plan (AQAP) which is available on the Council webpage. The AQAP includes measures focused on the following topics:

- Alternatives to private vehicle use;
- Policy guidance and development control;
- Promoting low emission transport;
- Promoting travel alternatives;
- Public information;
- Transport planning and infrastructure; and
- Traffic management.

Conclusions and Priorities

The AQMA 1 Arlington Crescent to Abbey Road has achieved full compliance for the past two years (2023 to 2024). Diffusion Tube BB52 within AQMA 1 recorded annual mean

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

[3] Defra. Air Quality Strategy – Framework for Local Authority Delivery, August 2023

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

concentration within 10% of the NO_2 annual mean objective in 2021 and 2022. The maximum concentration recorded in 2024 was 28.9µg/m^3 at BB52.

The AQMA 4 Eleanor Cross Road/Monarchs Way has achieved full compliance for the past two years (2023 to 2024) after distance correction to nearest relevant exposure. The maximum concentration recorded in 2024 was 34.0µg/m^3 at BB54 after distance correction to nearest relevant exposure.

The AQMA 6 Great Cambridge Road (A10) & College Road has achieved full compliance for the past five years (2020 to 2024) after distance correction to nearest relevant exposure, with maximum concentrations of 33.8µg/m^3 recorded at triplicate site BB28, BB59, BB60.

Within AQMA No. 6, all concentrations at receptors are below 36µg/m^3 from 2020 to 2024. Therefore, the council will revoke the AQMA No. 6 as it achieved five consecutive years of compliance.

No exceedances were identified outside the current AQMAs, thus no new AQMAs will be studied or declared.

In 2024, Broxbourne Borough Council has adopted and published the final AQAP covering the three AQMAs in the borough. The AQAP is available on the Council website. Broxbourne Borough Council will continue to assess new developments submitted through the planning process to ensure that any proposed developments are not detrimental to local air quality specially within the AQMAs. In addition, any new industrial processes will be regulated in line with The Environmental Permitting (England and Wales) Regulations 2016 (as amended).

Priorities and future commitments are:

- Continue to provide electric vehicles (EV) charging points that are accessible and efficient by maintaining the existing 27 EV charging points;
- Consider air quality as part of planning procedures and policy. The Council's Planning Team have incorporated air quality into the Local plan.
- Encourage sustainable methods of travel by engaging with the workforce.
- Provide clear communication around sustainable travel to the residents.
- Actively engage with residents on Social media to encourage behaviour change to help improve air quality.
- Encourage remote/flexible working to reduce car usage.

- Engage with National campaigns, where appropriate to do so, such as Clean Air Day.
- Conduct anti-idle interventions around local schools. Continue working with local schools in the Borough to raise the profile of poor air quality and respiratory health impacts.
- Reduce idling at taxi ranks. Taxi ranks are regularly inspected, a newsletter goes out to remind the trade.
- Review the taxi licensing policy to consider sustainability.
- Collaborating with bus operators to introduce ultra-low emission vehicles into the bus fleet (new or retrofit). Target use of ULEV into the problem areas.
- Procure low emission vehicles for use by staff.
- Alternative fuel (EV) infrastructure development.
- Install rapid EV charging points within all Council-owned Car Parks.
- City link shuttle service to key towns, e.g. various proposals from the Broxbourne Transport Strategy (High Leigh, Brookfield/Cheshunt Lakeside, Park Plaza enhancements), Broxbourne borough – Enfield cross-boundary services; extending one or more TfL services to Park Plaza; extending the Brookfield service down into Enfield.
- Incentivise public transport usage, by provision of information about existing services, campaigns, season ticket loan/discounts and subsidised tickets. To provide the public with clear information, so that informed choices can be made.

How to get Involved

Informing people about local air quality, in particular when pollution is elevated can help to protect those members of the community who are most sensitive to the health impacts associated with air pollution. Increasing public understanding of the sources and effects of air pollution can also motivate lifestyle changes which can help improve air quality, for example promoting sustainable travel as method of reducing air pollution.

Real-time monitoring data throughout Hertfordshire and Bedfordshire can be accessed via the Herts+Beds Air Quality Network. Free subscription to the Hertfordshire and Bedfordshire Air Pollution Alert System can also be carried out on the website, whereby alert messages will be sent to registered users if the air pollution in their area is forecast or measured to be moderate, high, or very high (based upon the UK's Air Quality Banding System).

Further information on Air Quality within Broxbourne, but also the ability to submit a nuisance report, is available on the Broxbourne Borough Council website. Broxbourne Borough Council also operates a Twitter account, whereby live updates are frequently posted.

There are numerous simple measures which the public may adopt in order to improve the air quality around them. Such measures include:

- Making short trips and journeys on foot or by bike instead of by car, or using public transport;
- Car sharing with colleagues, or with other parents on the school run;
- Avoid idling whilst your vehicle is stationary;
- Purchasing low-emission electric and/or hybrid vehicles, with government funding and grants available;
- Upgrading boilers to newest and most efficient gas condensing boilers with lowest NO_x (and carbon) emissions;
- Conserving fuel efficiency of vehicles through ensuring correct tyre pressure is maintained;
- Ensuring your home is sufficiently insulated; and
- Installing sources of renewable energy such as solar panel electricity systems, also known as solar photovoltaics or wind turbines.

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1 Local Air Quality Management

This report provides an overview of air quality in Broxbourne 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 Broxbourne 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.

A summary of AQMAs declared by Broxbourne Borough Council can be found in Table 2.1. The table presents a description of the three AQMAs that are currently designated within Broxbourne Borough Council. Appendix D: Map(s) of Monitoring Locations and AQMAs provides maps of AQMAs and also the air quality monitoring locations in relation to the AQMAs. The air quality objectives pertinent to the current AQMA designations are as follows:

- **AQMA No. 1** – Declared for exceedances of the annual mean air quality objective for Nitrogen Dioxide (NO_2);
- **AQMA No. 4** – Declared for exceedances of the annual mean air quality objective for NO_2; and
- **AQMA No.6** – Declared for exceedances of the annual mean and 1-hour mean air quality objectives for NO_2.

We propose to revoke AQMA No. 6 as five consecutive years of compliance have been achieved within AQMA No. 6 (see monitoring section).

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
AQMA 1 Arlington Crescent to Abbey Road	Declared 01/11/2001 Amended 04/02/2004 Amended 10/03/2016	NO_2 Annual Mean	Within a residential Cul-de-sac adjacent to the M25. The AQMA was further extended in March 2016 to include residential properties along Lodge Crescent, Abbey Rd and High Street.	YES	63µg/m^3	28.9 µg/m^3	2 years	The Borough of Broxbourne's Single Air Quality Action Plan (April 2024)	https://www.broxbourne.gov.uk/downloads/file/4502/bbc-aqap-2024-final-v2-1
AQMA 4 Eleanor Cross Road/Monarchs Way	Declared 10/03/2016	NO_2 Annual Mean	An area encompassing residential properties on Abbey Rd, King's Rd and Queen's Rd and including the Monarch's Way and Eleanor Cross Rd roundabout.	NO	78µg/m^3	34.0µg/m^3	2 years	The Borough of Broxbourne's Single Air Quality Action Plan (April 2024)	https://www.broxbourne.gov.uk/downloads/file/4502/bbc-aqap-2024-final-v2-1

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
AQMA 6 Great Cambridge Road (A10) & College Road	Declared 05/05/2017	NO_2 1 Hour Mean and Annual Mean	Encompassing dozens of residential properties and a school along the (A10) and College Rd, from Theobalds Lane junction up to the Brookfield Centre (B156 Flyover and B156/A10 Slip Rd.	NO	Exceedances of the 60µg/m^3 Hourly Mean and the 40µg/m^3 Annual Mean	33.8 µg/m^3	5 years	The Borough of Broxbourne's Single Air Quality Action Plan (April 2024)	https://www.broxbourne.gov.uk/downloads/file/4502/bbc-aqap-2024-final-v2-1

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

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

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

Defra's appraisal of last year's ASR concluded:

1. It appears that the diffusion tube data processing tool was used to calculate the data capture for the monitoring sites. This resulted in monitoring location BB29 and BB36 having a data capture of just below 75% (74.5% and 73.4%, respectively). However, these monitoring locations have not been annualised as only three months of monitoring data is missing. This discrepancy is a result of the diffusion tube data processing tool where it calculates the data capture based on the number of days (266/365 = 73%) but determines annualisation based on the number of months (9/12 = 75%). It is recommended to add this explanation in the text of the diffusion tube annualisation chapter before publishing the ASR to clarify/explain this caveat.
2. The Council have not confirmed that all 2023 diffusion tube data has been uploaded to the Diffusion Tube Entry System. It is assumed that the tick was missed in error below Table B.1. This should be corrected before publishing the ASR.
3. In Table 2.1 appear to be some inconsistencies regarding the declaration date of the AQMAs and the number of years the AQMAs have been compliant. AQMA No. 1 and No.4 have been reported to be declared/amended on 10/03/2016, however, on the portal the date is 15/03/2024. This should be amended in next year's ASR i.e. either update the dates in the ASR or on the portal, whichever is correct. Furthermore, AQMA No. 4 and No. 6 are reported to not being compliant, however, they have been compliant for 1 year now i.e. 2023 was the first compliant year. This should be corrected before publishing the ASR.
4. The trend figures show the wrong year labels, the labels currently read 2018 – 2022. This should be corrected to 2019 – 2023 before publishing the ASR.
5. It is understood that the updated AQAP is published in 2024. Links to the updated AQAP should be included in next year's ASR.

6. Clear maps are presented to highlight the locations of AQMAs and monitoring locations. It is commented that the Council have implemented the feedback provided in last year's ASR to further improve the maps.
7. A good discussion regarding $PM_{2.5}$ concentrations has been provided, including estimations of $PM_{2.5}$ concentrations from Defra background maps, and information regarding the indicator D01 (fraction of mortality attributable to $PM_{2.5}$ pollution).
8. It is clear that the Council have addressed comments from the previous ASR appraisal and have included additional information where possible. The Council should continue to act upon the responses.

In this year's ASR, the tick has been checked and ticked to confirm the upload of data to the data entry system. The AQMA declaration data and amendment date have been updated on the LAQM portal. The compliant year of AQMA has been updated accordingly. The trend figures use correct year labels. The link of AQAP is updated and included in this year's ASR.

Broxbourne 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. 28 measures are included within Table 2.2, with the type of measure and the progress Broxbourne 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.

More detail on these measures can be found in their respective Action Plans - Broxbourne Borough Council Air Quality Action Plan - 2024. Key progress of measures are:

Anti-Idling Campaign – Goff's Churchgate

As part of broader air quality efforts, an anti-idling campaign was conducted at Goff's Churchgate School, selected for its proximity to the A10 and existing air quality monitoring infrastructure. Over multiple visits in May 2025, officers engaged with drivers during school drop-off and pick-up times, successfully encouraging engine switch-offs and reducing illegal parking through visible enforcement.

Key observations included frequent 'drop and dash' behaviours and repeated vehicle idling in areas with deteriorated safety barriers near a brook, posing a significant risk to children.

The campaign resulted in short-term improvements in driver behaviour and identified urgent infrastructure and safety issues requiring intervention.

Next steps include raising these concerns with the Highways team at the upcoming Air Quality meeting, particularly the need to restore physical barriers and review traffic management measures to support long-term improvements in air quality and pupil safety.

Clean Air Day Campaign

Clean Air Day communications scheduled leading up to and on the actual date 19 June 2025.

Air Quality Alerts

Air Quality alerts are available and there has been a good take up of this so that the public has this data that wants it.

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

- The Council will continue to provide clear communication around travel;
- The Council will actively engage with residents on Social media to encourage behaviour change to help Air Quality;
- The Council are encouraging remote/flexible working to reduce car usage;
- The Council are committed to raising the profile with our businesses of how they can improve Air Quality;
- The Council will continue to engage with National campaigns, where appropriate to do so, such as Clean Air day;
- The Council will conduct anti-idle interventions around Educational establishments, e.g. Schools;
- The Council are committed to reduce anti-idling at taxi ranks;
- The Council actively encourage staff to car share to reduce the number of cars on the road;
- The Council actively encourage different modes of transport for staff to get to and from work;
- Consider new technologies and their application to improve air quality in AQMAs.

Broxbourne Borough Council's priorities for the coming year are to continue to progress the measures to improve the air quality in the region.

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

- Hertfordshire County Council;

The principal challenges and barriers to implementation that Broxbourne Borough Council anticipates facing are that implementation of several measures are subject to funding confirmation.

Broxbourne Borough Council anticipates that the measures stated above and in Table 2.2 will help achieve compliance in all AQMAs.

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
1b	The Council fully consider air quality as part of planning procedures and policy.	Policy Guidance and Development Control	Air Quality Planning and Policy Guidance	Ongoing / review	2027	Planning Team (Local Plan)	TBC	TBC	< £10k	Implementation	< 0.5µg/m³	No. of implemented policies and planning procedures.	The Council do consider Air Quality as part of planning applications and policy on a case by case basis.	The Planning team have incorporated Air Quality into the Local plan.
2a	Improved traffic signal control for smoother traffic movement, e.g. install Smart Traffic Lights at the Church Lane and College Road Junctions	Traffic Management	UTC, Congestion Management, traffic reduction	2025 (subject to funding)	2025	HCC Network and infrastructure team leader	TBC	TBC	£50k - £100k	Planning	1 - 2 µg/m³	Percentage of reduction of NO_2 concentrations.	This is managed by Hertfordshire County Council.	These improvements are subject to funding. If the funding is received from the Government, this can be implemented and this is likely to commence in 2025.
5d	Alternative fuel (EV) infrastructure development	Promoting Low Emission Transport	Procuring alternative Refuelling infrastructure to promote Low Emission Vehicles, EV recharging, gas fuel recharge	Ongoing	2025	Sustainability Officer	TBC	TBC	< £10k	Implementation	< 0.5µg/m³	No. EV charge points	A Sustainability working group meets regularly to review the promotion of such topics.	This is considered as part of our Environmental Strategy.
1a	The Council will continue to provide EV charging points that are accessible and efficient.	Promoting Low Emission Transport	Procuring alternative Refuelling infrastructure to promote Low Emission Vehicles, EV recharging, gas fuel recharge	Ongoing /review	2027	Parking Services Manager	TBC	TBC	£50k - £100k	Implementation	< 0.5µg/m³	No. charge points and uptake in EVs, in total and per population.	This is reviewed on an ongoing basis to ensure that charging points for EV are available.	The Council are committed to maintaining the existing 27 EV charging points.
1b	The Council fully consider Air quality as part of planning procedures and policy.	Policy Guidance and Development Control	Air Quality Planning and Policy Guidance	Ongoing /review	2027	Planning Team (Local Plan)	TBC	TBC	< £10k	Implementation	< 0.5µg/m³	No. of implemented policies and planning procedures.	The Council do consider Air Quality as part of planning applications and policy on a case by case basis.	The Planning team have incorporated Air Quality into the Local plan.
2a	Improved traffic signal control for smoother traffic movement, e.g. install Smart Traffic Lights at the Church Lane and College Road Junctions	Traffic Management	UTC, Congestion Management, traffic reduction	2025 (subject to funding)	2025	HCC Network and infrastructure team leader	TBC	TBC	£50k - £100k	Planning	1 - 2 µg/m³	Percentage of reduction of NO_2 concentrations.	This is managed by Hertfordshire County Council and links in with the wider transport strategy.	These improvements are subject to funding. If the funding is received from the Government, this can be implemented and this is likely to commence in 2025.
2b	At grade improvements at College Road/A10 junction, providing additional northbound and southbound lanes at the junction and increased length of northbound left filter into College Road, and banning all right turns. The outline design for the scheme can be found as part of the Broxbourne Transport Strategy.	Traffic Management	UTC, Congestion Management, traffic reduction	2025 (subject to funding)	2025	HCC Network and infrastructure team leader	TBC	TBC	£50k - £100k	Planning	< 0.5 µg/m³	Percentage of reduction of NO_2 concentrations.	This is managed by Hertfordshire County Council and links in with the wider transport strategy.	These improvements are pending funding from the Government (as outlined above).
3a	The Council will encourage sustainable methods of travel by	Promoting Travel Alternatives	Workplace Travel Planning	Ongoing	2025	Sustainability Officer	TBC	TBC	< £10k	Implementation	< 0.5µg/m³	Workforce engaged with sustainability	The Council regularly put articles into Staff News to encourage	A staff survey was sent out to all staff to gather information re: modes of travel.

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
	engaging with the workforce											methods. In total and percentage.	staff to travel in a sustainable way.	
3b	The Council also consider the provision for signage and ability to park bicycles across the Borough.	Promoting Travel Alternatives	Promotion of cycling	Jan-25	2025	Planning Policy Officer	TBC	TBC	< £10k	Planning	< 0.5µg/m³	No. of bicycles parking spaces. Bicycles AADT within the AQMAs.	This is encouraged to ensure that there is adequate provision for cyclists.	The Planning team consider this factor for all new developments.
3c	The Council have considered new cycle routes alongside major developments.	Promoting Travel Alternatives	Promotion of cycling	Jan-25	2025	Director of Place/Planning Officers	TBC	TBC	£50k - £100k	Planning	0.5-1 µg/m³	Bicycles AADT within the AQMAs.	This is particularly encouraged with all of the new developments in the Borough.	Scheme A has commenced and it is hoped this will be completed in 23/24. Scheme C will take longer and it is hoped to be completed 26/27.
4a	The Council will strive to provide clear communication around travel.	Public Information	Other	Apr-23	2024	Communications Team	TBC	TBC	< £10k	Implementation	< 0.5µg/m³	Uptake of sustainable travel methods.	The Council Communications team put out regular posts around Air Quality on the Council social media so that the public are kept informed.	The Communications team provide regular/relevant information for our residents.
4b	The Council will actively engage with residents on Social media to encourage behaviour change to help Air Quality.	Public Information	Via the internet	Apr-23	2024	Communications Team	TBC	TBC	< £10k	Implementation	< 0.5µg/m³	Uptake of sustainable travel methods.	This is ongoing. The Council continue to try and encourage good public behaviour and highlight key points.	The Communications team have put information onto Social media around Air Quality.
4c	The Council are encouraging remote/flexible working to reduce car usage.	Promoting Travel Alternatives	Encourage / Facilitate home-working	Apr-23	2024	Head of Environmental Health & Licensing	TBC	TBC	< £10k	Implementation	< 0.5µg/m³	No. of AADT from cars reduced and No. of remote work days	The Head of Service actively encourages flexible working so that the use of cars is reduced, to help Air Quality.	This is subject to HR Policy and strives to improve Air Quality with less traffic.
4d	The Council are committed to raising the profile with our businesses of how they can improve Air Quality.	Public Information	Other	Jun-23	2024	Sustainability Officer	TBC	TBC	< £10k	Implementation	< 0.5µg/m³	Sustainable Business.	This is linked in with the Sustainable working group which considers residents and businesses, and how the Council can improve air quality.	The sustainability officer continues to engage with our Customers to improve AQ.
4e	The Council will engage with National campaigns, where appropriate to do so, such as Clean Air day	Other	Other	Mar-23	2024	Head of Environmental Health & Licensing	TBC	TBC	< £10k	Implementation	< 0.5µg/m³	No. of successful bids	Clean Air Day communications scheduled leading up to and on the actual date 19 June 2025	Several successful interventions have already taken place/raising the profile of AQ.
4f	The Council will conduct anti-idle interventions around Educational establishments e.g. Schools	Public Information	Other	Mar-23	2024	Head of Environmental Health & Licensing	TBC	TBC	< £10k	Implementation	< 0.5µg/m³	Percentage of reduction of NO_2 concentrations.	**Anti-Idling Campaign – Goff's Churchgate** As part of broader air quality efforts, an anti-idling campaign was conducted at Goff's Churchgate School, selected for its proximity to the A10 and existing air quality monitoring infrastructure. Over	The Council have worked with local schools in the Borough to raise the profile of poor Air Quality and respiratory health impacts.

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
													multiple visits in May 2025, officers engaged with drivers during school drop-off and pick-up times, successfully encouraging engine switch-offs and reducing illegal parking through visible enforcement.	
4g	The Council are committed to reduce anti-idling at taxi ranks	Traffic Management	Anti-idiling enforcement	Jul-23	2024	Head of Environmental Health & Licensing	TBC	TBC	< £10k	Implementation	< 0.5µg/m³	Percentage of reduction of NO_2 concentrations.	The Licensing team conduct regular visits to the taxi ranks to ensure that the drivers are operating in an environmentally sustainable way.	The taxi ranks are regularly inspected and a newsletter goes out to remind the trade.
5a	The Council will review taxi licensing fees to consider sustainability.	Traffic Management	Testing vehicles emissions	Apr-23	2024/25	Licensing officer	TBC	TBC	< £10k	Implementation	< 0.5µg/m³	Percentage of electric taxi	Fees are reviewed on an annual basis alongside our finance team.	The Council taxi policy has been reviewed to consider environmental impacts.
5b	Collaborating with bus operators to introduce ultra-low emission vehicles into the bus fleet (new or retrofit). Target use of ULEV into the problem areas.	Promoting Low Emission Transport	Other	Apr-23	2025	HCC/Transport Policy Team	TBC	TBC	£50k - £100k	Implementation	< 0.5µg/m³	No. of zero emission buses Percentage of fleet that reach Euro V Percentage of fleet that reach VI standard	This element is dealt with by Hertfordshire County Council (two tier Authority)	The Council works in partnership to support HCC with public transport options via the introduction of 27 zero emission buses and increasing the proportion of the fleet reaching Euro V and Euro VI standards.
5c	The Council are committed to procure low emission vehicles for use by staff.	Promoting Low Emission Transport	Company vehicle procurement – Prioritising uptake of low emission vehicles	Feb-23	2025	Treasury Insurance Risk Manager	TBC	TBC	< £10k	Implementation	< 0.5µg/m³	No. of EV provided for use by staff	Current pool vehicles are EV x 3	EV contracts are reviewed regularly to ensure they are sustainable. The council provides 3 electric vehicles to the staff.
5d	Alternative fuel (EV) infrastructure development	Promoting Low Emission Transport	Procuring alternative Refuelling infrastructure to promote Low Emission Vehicles, EV recharging, gas fuel recharge	Ongoing	2025	Sustainability Officer	TBC	TBC	< £10k	Implementation	< 0.5µg/m³	No. EV charge points	This is considered by the Sustainability working group across the Council.	This is considered as part of our Environmental Strategy.
5e	Install rapid EV charging points within all Council-owned Car Parks	Promoting Low Emission Transport	Procuring alternative Refuelling infrastructure to promote Low Emission Vehicles, EV recharging, gas fuel recharge	Ongoing	2025	Parking Services Manager	TBC	TBC	< £10k	Implementation	< 0.5µg/m³	Percentage EV charge points in Council car parks	There are EV charging points in the Council Staff car park to aid air quality and lead by example.	Parking Services are currently reviewing Eleanor cross car park for improvements.
6a	City link shuttle service to key towns, e.g. various proposals from the Broxbourne Transport Strategy (High Leigh, Brookfield/Cheshunt Lakeside, Park Plaza enhancements),	Transport Planning and Infrastructure	Bus route improvements	Apr-23	2025	Local Comms/HCC Comms cell	TBC	TBC	£50k - £100k	Implementation	< 0.5µg/m³	No. of new services provided. No. of public transport users.	This is directed by HCC and part of the overall transport strategy.	HCC comms use Social media to get AQ messages out to the Public.

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
	Broxbourne borough – Enfield cross-boundary services; extending one or more TfL services to Park Plaza; extending the Brookfield service down into Enfield.													
6b	Council funding to provide free buses for all schools	Transport Planning and Infrastructure	Public transport improvements-interchanges stations and services	Pending	2025	HCC/Transport Policy Team	TBC	TBC	£50k - £100k	Planning	< 0.5µg/m³	No. and percentage of schools with free buses provided	This is directed by HCC and part of the overall transport strategy.	HCC
6c	Public transport infrastructure improvements, e.g. - Enhanced bus shelters - Accurate electronic timetables - m-tickets / contactless payment options	Transport Planning and Infrastructure	Public transport improvements-interchanges stations and services	Ongoing	2026	HCC/Transport Policy Team	TBC	TBC	£50k - £100k	Implementation	< 0.5µg/m³	No. of public transport users.	This is directed by HCC and part of the overall transport strategy.	Awaiting confirmation of whether the funding has been successful to implement this measure
6d	Incentivise public transport usage, e.g. - Provision of information about existing services - Campaigns - Season ticket loan/discounts - Subsidised tickets	Transport Planning and Infrastructure	Public transport improvements-interchanges stations and services	Ongoing	2026	HCC/Transport Policy Team	TBC	TBC	£50k - £100k	Implementation	< 0.5µg/m³	No. of public transport users.	This is directed by HCC and part of the overall transport strategy.	To provide the public with clear information so that informed choices can be made.
7a	The Council will consider the availability of charging points across the Borough	Promoting Low Emission Transport	Procuring alternative Refuelling infrastructure to promote Low Emission Vehicles, EV recharging, gas fuel recharge	Ongoing.	2026	Parking Services Manager	TBC	TBC	< £10k	Implementation	< 0.5µg/m³	No. of EV charging points and No. of EV	This is reviewed on a regular basis to ensure the infrastructure can support this.	The Council have reviewed the current amount and will keep under review.
7b	The Council actively encourage staff to car share to reduce the number of cars on the road	Alternatives to private vehicle use	Car &lift sharing schemes	Ongoing.	2024	Communication Team	TBC	TBC	< £10k	Implementation	< 0.5µg/m³	No. of workforce engaged with the measure and AADT reduced for cars	Regular articles in Staff News on the best ways to travel sustainably.	Regular messaging takes place to encourage staff to consider their behaviour/
7c	The Council actively encourage different modes of transport for staff to get to and from work	Promoting Travel Alternatives	Promotion of cycling	Apr-23	2024	Communication Team	TBC	TBC	< £10k	Implementation	< 0.5µg/m³	No. of workforce engaged with the measure and AADT reduced for cars	Regular articles in Staff News on the best ways to travel sustainably.	The Council held a recent 'ride your bike' to work day to encourage staff to cycle.
8	Air quality alerts to promote information to the most vulnerable.	Public Information	Other	Ongoing	2024	Communication Team / HCC	HCC	TBC	< £10k	Implementation	< 0.5µg/m³	No. of subscriptions to the air quality alert system.	Air Quality alerts are available and there has been a good take up of this so that the public has this data that wants it.	
9	Consider new technologies and their application to improve air quality in AQMAs	Other	Other	Ongoing	2024		TBC	TBC	< £10k	Implementation	< 0.5µg/m³		Road vents were considered alongside HCC but the cost was prohibitive.	

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 Strategy[5], 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.

Currently there is no monitoring of $PM_{2.5}$ or PM_{10} completed within Broxbourne Borough Council.

The Defra 2024 background maps (based on 2021 monitored concentrations) can be used to identify the predicted background $PM_{2.5}$ concentrations across the UK. For Broxbourne Borough Council, all predicted $PM_{2.5}$ background concentrations are well below the annual mean limit value for $PM_{2.5}$ (20µg/m^3)[6]. The maximum predicted concentration is 8.3 µg/m^3, located within the 1 x 1km grid square with the centroid grid reference of 535500, 200500. This is an area to the southwest of Cheshunt and includes a section of the M25 and junction 25, the A10, some light industrial units, and a section of the West Anglia Main Line railway. The background maps also provide a breakdown of sources. For this grid square, the majority of the $PM_{2.5}$ concentrations is estimated to arise from secondary $PM_{2.5}$ formation, which forms following chemical reactions of other gaseous atmospheric pollutants, such as NO_X, ammonia (NH_3), and volatile organic compounds (VOCs).

The Public Health Outcomes Framework data tool[7] compiled by Public Health England quantifies the mortality burden of $PM_{2.5}$ within England on a county and local authority scale. The 2023 fraction of mortality attributable to $PM_{2.5}$ pollution (indicator D01) across England is 5.6%, and in contrast the fraction within Broxbourne is above the England average at 5.2%.

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[5] Defra. Air Quality Strategy – Framework for Local Authority Delivery, August 2023

[6] Defra. National air quality objectives. Available at: https://uk-air.defra.gov.uk/assets/documents/Air_Quality_Objectives_Update.pdf

[7] Public Health Outcomes Framework. Available at: https://fingertips.phe.org.uk/profile/public-health-outcomes-framework

Measures to improve air quality often have shared wins with other public health indicators, a good example being the encouragement of active travel and commuting leading to increased physical activity and increased wellbeing.

Some of the actions carried out by Broxbourne Borough Council which are shown in Table 2.2 will focus on reducing traffic volumes, improving traffic flow, switching to alternative modes of transport, and promoting the uptake of alternative fuels. Although not designed specifically for the reduction of $PM_{2.5}$, improvements in NO_2 concentrations will lead to a net reduction of $PM_{2.5}$ concentrations from combustion-based sources where both pollutants arise.

Some parts of the borough of Broxbourne are designated as a smoke control area. Smoke control areas are a defined geographical region within which smoke cannot be legally emitted from a chimney, unless using authorised fuels or using exempt appliances. Broxbourne Council does not recommend bonfires in any circumstance. You can be fined if smoke drifts onto roads, action can be taken against nuisance odours, and all fires have a risk of spreading and causing a danger to life. Under new smoke control area rules, Broxbourne Borough Council is able to issue fixed penalty charge notices up to £300 to owners of chimneys where it is deemed too much smoke is being emitted, as well as issuing fines up to £1,000 where it is identified that unauthorised fuels are being burnt without an exempt appliance. The Defra has published a practical guide on these rules.

An example measure taken by Broxbourne Borough Council to address $PM_{2.5}$ include that all new residential parking spaces, including communal parking spaces shall have active Electric Vehicle charging points, or passive charging points where it can be demonstrated that provision of active charging points is not reasonable. Also, for commercial Parking Spaces, at least 20% of all new parking spaces associated with the commercial parts of the development shall be fitted with active EV charging points, with passive provision for all the remaining spaces. All cabling and charging points for commercial parking spaces must be capable of supplying a rapid charging service.

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

This section sets out the monitoring undertaken within 2024 by Broxbourne 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

Broxbourne Borough Council did not undertake any automatic monitoring during 2024.

3.1.2 Non-Automatic Monitoring Sites

Broxbourne Borough Council undertook non-automatic (i.e. passive) monitoring of NO_2 at 44 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.

Monitoring was completed in line with the Defra Calendar with a variation of two days or less.

3.2 Individual Pollutants

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

3.2.1 Nitrogen Dioxide (NO_2)

Table A.2 in Appendix A compare the ratified and adjusted monitored NO_2 annual mean concentrations for the past five years with the air quality objective of 40µg/m^3. Note that the concentration data presented represents the concentration at the location of the monitoring site, following the application of bias adjustment and annualisation, as required (i.e. the values are exclusive of any consideration to fall-off with distance adjustment).

For diffusion tubes, the full 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.

During 2024, there was one exceedance of the annual mean AQS Objective recorded at Site BB54 with an annual mean of 40.6 µg/m^3. One site BB51 recorded concentration within 10% of the NO_2 annual mean AQS objective (above 36µg/m^3). Both sites are located within AQMA 4. Both sites are however not located at a site of relevant exposure, and following fall-off with distance correction calculations, all concentrations remained below 36µg/m^3.

A summary of the concentrations within AQMA No. 6 is provided in

Table 3.1. Concentrations at receptor (after distance correction) are reported for site BB28, BB59, BB60 from 2020 to 2024 as the monitored concentrations were above 36µg/m^3 and the site is located 11.5 m from the nearest receptor. Within AQMA No. 6, all concentrations at receptors are below 36µg/m^3 from 2020 to 2024. Therefore, the council will revoke the AQMA No. 6 as it achieved five consecutive years of compliance.

Table 3.1 – Summary of Annual Mean NO_2 Concentration within AQMA No.6

Site ID	Address	Annual Mean NO_2 Concentration (µg/m^3)				
		2020	2021	2022	2023	2024
BB09	100 Great Cambridge Road	34.5	34.2	31.7	29.6	27.7
BB27	59 College Road, Cheshunt	24.8	26.5	26.2	23.0	20.2
BB34	Farm Close	12.5	11.8	11.7	10.1	10.4
BB39	College Road / Goffs Churchgate Academy,	20.8	19.8	19.5	19.1	18.2
BB40	A10/College Road Junction	33.7	35.1	32.4	29.0	25.7
BB41	37 Beltona Gardens,	25.3	24.8	24.1	21.1	19.7
BB42	48 Hobbs Close	23.9	22.2	21.2	18.2	17.1

BB28, BB59, BB60	214 Great Cambridge Road (Triplicate)	32.2	32.4	31.3	27.5	33.8
Concentrations at receptor are reported for site BB28, BB59, BB60 from 2020 to 2024 as the monitored concentrations were above 36µg/m^3 and the site is located 11.5 m from the nearest receptor.						

Concentrations have generally decreased over the past five years, as illustrated on Figure A.1 to Figure A.5, with five sites recording slight increases in 2024 compared to 2023 (BB16, BB33, BB44, BB51 and BB54). BB16 is located outside any AQMAs and recorded an increase of 4.3 µg/m^3 to 17.6 µg/m^3 in 2024. BB54 is located within AQMA 4 and recorded an increase of 2.6 µg/m^3 to 40.6 µg/m^3 in 2024. The other three sites recorded an increase of less than 0.5 µg/m^3.

At monitoring locations outside of any of the declared AQMAs, all NO_2 annual mean concentrations are below the AQS objective of 40µg/m^3, with the maximum being 27.1µg/m^3 reported at BB49.

As per LAQM.TG(22), an annual mean NO_2 concentration greater than 60µg/m^3 can be used as a proxy to indicate whether there is an exceedance of the NO_2 1-hour mean AQS objective (no more than 18 hourly mean concentrations in exceedance of 200µg/m^3). None of the monitoring locations reported an annual mean concentration greater than 60µg/m^3, therefore it is not believed that there has been an exceedance of the hourly objective within Broxbourne.

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) (1)	Distance to kerb of nearest road (m) (2)	Tube Co-located with a Continuous Analyser?	Tube Height (m)
BB04	43 Winford Drive	Background	536954	206432	NO_2	No	5.0	2.0	No	2.3
BB07	Molesworth Hoddesdon	Background	537300	210500	NO_2	No	9.0	1.0	No	2.3
BB09	100 Great Cambridge Rd	Kerbside	535314	202312	NO_2	Y - AQMA 6 Great Cambridge Road	12.4	3.5	No	2.3
BB10	53 Teresa Gardens Waltham Cross	Background	535400	200100	NO_2	No	5.0	69.0	No	2.3
BB11	35 High Street Waltham Cross	Kerbside	536055	200090	NO_2	Y - AQMA 1 Arlington Crescent to Abbey Road	6.5	7.8	No	2.3
BB12	15 High Rd Wormley	Kerbside	536611	205768	NO_2	No	12.5	2.0	No	2.3
BB16	Normandy Way	Background	538540	209497	NO_2	No	7.0	1.0	No	2.3
BB18	20 Mylne Close Cheshunt	Background	535500	203740	NO_2	No	8.5	2.5	No	2.3
BB19	10 Great Stockwood Road	Background	532916	204109	NO_2	No	11.0	1.5	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)
BB20	1 The Chase Goffs Oak	Background	531956	203091	NO_2	No	10.0	0.3	No	2.3
BB22	Sturlas Way Waltham Cross	Kerbside	536000	200750	NO_2	No	3.0	3.0	No	2.3
BB23	Wickes Car Park	Background	536000	200680	NO_2	No	13.0	20.0	No	2.4
BB25	Jones Road	Kerbside	531556	200869	NO_2	No	68.0	41.0	No	2.3
BB27	59 College Road, Cheshunt	Kerbside	535727	202236	NO_2	Y - AQMA 6 Great Cambridge Road	3.0	1.5	No	2.3
BB29	Brookfield Allotments, Halfhide Lane	Kerbside	535466	202982	NO_2	No	N/A	2.0	No	2.3
BB30	Winnipeg Way, Turnford	Kerbside	535895	204232	NO_2	No	24.0	1.0	No	2.3
BB31	Wormley Sports Club, Church Lane	Kerbside	536008	204805	NO_2	No	360.0	68.0	No	2.3
BB32	11 Baas Hill Close, Broxbourne	Kerbside	536037	205815	NO_2	No	14.0	1.0	No	2.3
BB33	High Leigh Farm, Box Lane	Kerbside	536042	206769	NO_2	No	22.0	4.0	No	1.0
BB34	Farm Close, Cheshunt	Kerbside	536191	208841	NO_2	Y - AQMA 6 Great Cambridge Road	5.8	16.0	No	2.3
BB35	86 College Road, Cheshunt	Kerbside	535323	202036	NO_2	No	10.0	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)
BB36	Essex Rd at the rear of 6 Parrotts Field,	Roadside	535526	202276	NO_2	No	15.0	2.0	No	2.4
BB37	Junction of Burford St/Dinant Link Rd	Kerbside	537747	209054	NO_2	No	19.5	0.5	No	2.3
BB39	College Rd/Goffs Churchgate Academy, Cheshunt	Kerbside	537448	209135	NO_2	Y - AQMA 6 Great Cambridge Road	40.5	1.0	No	2.4
BB40	A10/College Rd Junction, Cheshunt	Roadside	535107	202160	NO_2	Y - AQMA 6 Great Cambridge Road	6.5	2.0	No	2.3
BB41	37 Beltona Gardens, Cheshunt	Roadside	535314	202244	NO_2	Y - AQMA 6 Great Cambridge Road	4.0	17.0	No	2.5
BB42	48 Hobbs Close, Cheshunt	Kerbside	535910	203822	NO_2	Y - AQMA 6 Great Cambridge Road	3.0	22.0	No	2.3
BB43	24 Westside, Turnford	Roadside	535516	202989	NO_2	No	11.0	1.5	No	2.5
BB44	High Rd/Bell Lane Roundabout (163 High Rd) Broxbourne	Kerbside	536434	205004	NO_2	No	2.0	8.0	No	2.0
BB45	High Rd/Station Rd Junction, Broxbourne	Kerbside	536673	206608	NO_2	No	5.0	0.5	No	2.0
BB46	High Rd/Springfields Junction, Broxbourne	Kerbside	536847	207237	NO_2	No	5.9	1.3	No	2.4

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)
BB47	Turners Hill 2, Cheshunt	Kerbside	536883	207545	NO_2	No	8.0	0.9	No	2.3
BB48	Parkside, outside Greenwich Court (Flats 13-24),Waltham Cross	Background	535931	202197	NO_2	Y - AQMA 1 Arlington Crescent to Abbey Road	7.0	22.7	No	2.2
BB49	Winston Churchill Way/High Street	Kerbside	536213	200113	NO_2	No	11.0	0.7	No	2.3
BB50	St Catherines School, Hoddesdon	Urban Background	535990	200800	NO_2	No	N/A	21.6	No	2.0
BB51	28 Eleanor Cross Road Waltham Cross	Kerbside	537646	208979	NO_2	Y - AQMA 4 Eleanor Cross Road / Monarchs Way	4.6	2.5	No	1.8
BB52	27/28 Arlington Crescent, Waltham Cross	Roadside	536265	200375	NO_2	Y - AQMA 1 Arlington Crescent to Abbey Road	0.0	13.0	No	2.2
BB53	Lamp Post 22: Outside Block 33-36 Teresa Gardens, Waltham Cross, EN8 8EQ	Urban Background	536224	200027	NO_2	No	7.0	3.0	No	2.3
BB54	Post outside Waltham House, Eleanor Road, Waltham Cross, EN8	Kerbside	535434	200090	NO_2	Y - AQMA 4 Eleanor Cross Road / Monarchs Way	5.0	3.0	No	2.3
BB55	Traffic Light No 4, Monarchs Way/Eleanor Cross	Kerbside	536250	200391	NO_2	Y - AQMA 4 Eleanor Cross Road /	5.0	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)
	Road Roundabout, Waltham Cross					Monarchs Way				
BB56	Sign Post 1, York Road/Eleanor Road Junction, Waltham Cross	Roadside	536312	200436	NO_2	Y - AQMA 4 Eleanor Cross Road / Monarchs Way	7.0	3.0	No	2.3
BB57	53 Church Lane, Cheshunt, Lampost 13	Roadside	536414	200399	NO_2	No	5.0	3.0	No	2.3
BB58	Lamp post by Athenia Close - Cuffley Hill	Roadside	535325	202913	NO_2	No	5.0	3.0	No	2.3
BB28, BB59, BB60	214 Great Cambridge Road, Cheshunt (3)	Kerbside	535466	202982	NO_2	Y - AQMA 6 Great Cambridge Road	11.5	3.0	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.2 – Annual Mean NO_2 Monitoring Results: Non-Automatic Monitoring (µg/m^3)

Diffusion Tube ID	X OS Grid Ref (Easting)	Y OS Grid Ref (Northing)	Site Type	Valid Data Capture for Monitoring Period (%) (1)	Valid Data Capture 2024 (%) (2)	2020	2021	2022	2023	2024
BB04	536954	206432	Background	100.0	100.0	13.8	13.0	13.3	11.5	10.8
BB07	537300	210500	Background	100.0	100.0	14.8	13.9	14.3	12.2	11.7
BB09	535314	202312	Kerbside	100.0	100.0	34.5	34.2	31.7	29.6	27.7
BB10	535400	200100	Background	100.0	100.0	22.3	21.0	21.1	19.4	17.0
BB11	536055	200090	Kerbside	100.0	100.0	30.3	31.2	30.6	25.3	24.9
BB12	536611	205768	Kerbside	100.0	100.0	24.6	26.9	26.2	23.0	20.6
BB16	538540	209497	Background	58.5	58.5	16.2	15.4	16.6	13.3	17.6
BB18	535500	203740	Background	100.0	100.0	13.3	13.0	13.3	11.6	10.8
BB19	532916	204109	Background	92.5	92.5	14.0	13.2	13.5	12.1	11.2
BB20	531956	203091	Background	100.0	100.0	14.0	13.7	13.8	13.0	11.1
BB22	536000	200750	Kerbside	100.0	100.0	27.9	28.4	29.8	24.7	24.4
BB23	536000	200680	Background	100.0	100.0	22.4	22.2	22.2	18.8	18.6

Diffusion Tube ID	X OS Grid Ref (Easting)	Y OS Grid Ref (Northing)	Site Type	Valid Data Capture for Monitoring Period (%) (1)	Valid Data Capture 2024 (%) (2)	2020	2021	2022	2023	2024
BB25	531556	200869	Kerbside	100.0	100.0	18.4	15.0	16.5	13.7	12.1
BB27	535727	202236	Kerbside	100.0	100.0	24.8	26.5	26.2	23.0	20.2
BB29	535466	202982	Kerbside	100.0	100.0	22.7	24.4	23.6	23.4	20.5
BB30	535895	204232	Kerbside	90.6	90.6	17.5	17.5	16.7	15.8	14.3
BB31	536008	204805	Kerbside	100.0	100.0	15.4	14.6	15.4	12.9	12.3
BB32	536037	205815	Kerbside	100.0	100.0	15.6	15.7	15.8	13.1	12.2
BB33	536042	206769	Kerbside	92.5	92.5	12.5	11.8	11.7	10.1	10.4
BB34	536191	208841	Kerbside	100.0	100.0	25.0	22.7	23.5	20.0	19.3
BB35	535323	202036	Kerbside	90.6	90.6	23.5	23.6	22.3	20.8	18.4
BB36	535526	202276	Roadside	90.6	90.6	26.4	20.6	18.5	16.6	15.4
BB37	537747	209054	Kerbside	100.0	100.0	33.5	32.8	33.2	28.9	26.7
BB39	537448	209135	Kerbside	83.0	83.0	20.8	19.8	19.5	19.1	18.2
BB40	535107	202160	Roadside	100.0	100.0	33.7	35.1	32.4	29.0	25.7

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
BB41	535314	202244	Roadside	100.0	100.0	25.3	24.8	24.1	21.1	19.7
BB42	535910	203822	Kerbside	100.0	100.0	23.9	22.2	21.2	18.2	17.1
BB43	535516	202989	Roadside	100.0	100.0	26.0	31.7	24.0	22.3	21.2
BB44	536434	205004	Kerbside	90.6	90.6	21.5	21.5	21.5	18.3	18.7
BB45	536673	206608	Kerbside	58.5	58.5	21.4	22.8	21.2	16.9	15.0
BB46	536847	207237	Kerbside	92.5	92.5	26.5	26.0	24.1	21.2	20.3
BB47	536883	207545	Kerbside	83.0	83.0	26.7	27.8	27.3	24.3	22.5
BB48	535931	202197	Background	100.0	100.0	25.5	26.5	26.4	23.0	21.7
BB49	536213	200113	Kerbside	100.0	100.0	32.6	34.4	30.1	28.8	27.1
BB50	535990	200800	Urban Background	92.5	92.5	18.6	20.2	19.3	17.6	15.2
BB51	537646	208979	Kerbside	100.0	100.0	39.4	**41.3**	**41.4**	37.9	38.3
BB52	536265	200375	Roadside	100.0	100.0	-	36.5	36.2	33.2	28.9
BB53	536224	200027	Urban Background	100.0	100.0	-	-	17.2	17.6	15.9

Diffusion Tube ID	X OS Grid Ref (Easting)	Y OS Grid Ref (Northing)	Site Type	Valid Data Capture for Monitoring Period (%) (1)	Valid Data Capture 2024 (%) (2)	2020	2021	2022	2023	2024
BB54	535434	200090	Kerbside	92.5	92.5	-	-	**43.5**	38.0	**40.6**
BB55	536250	200391	Kerbside	100.0	100.0	-	-	28.2	32.9	30.0
BB56	536312	200436	Roadside	75.0	75.0	-	-	31.4	25.4	23.2
BB57	536414	200399	Roadside	100.0	100.0	-	-	24.0	20.6	18.6
BB58	535325	202913	Roadside	100.0	100.0	-	-	22.1	19.2	18.1
BB28, BB59, BB60	535466	202982	Kerbside	100.0	100.0	**43.2**	**44.1**	**42.7**	36.6	33.8

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

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

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

Notes:

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

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

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

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

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

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

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

Figure A.1 – Trends in Annual Mean NO_2 Concentrations in AQMA No.1

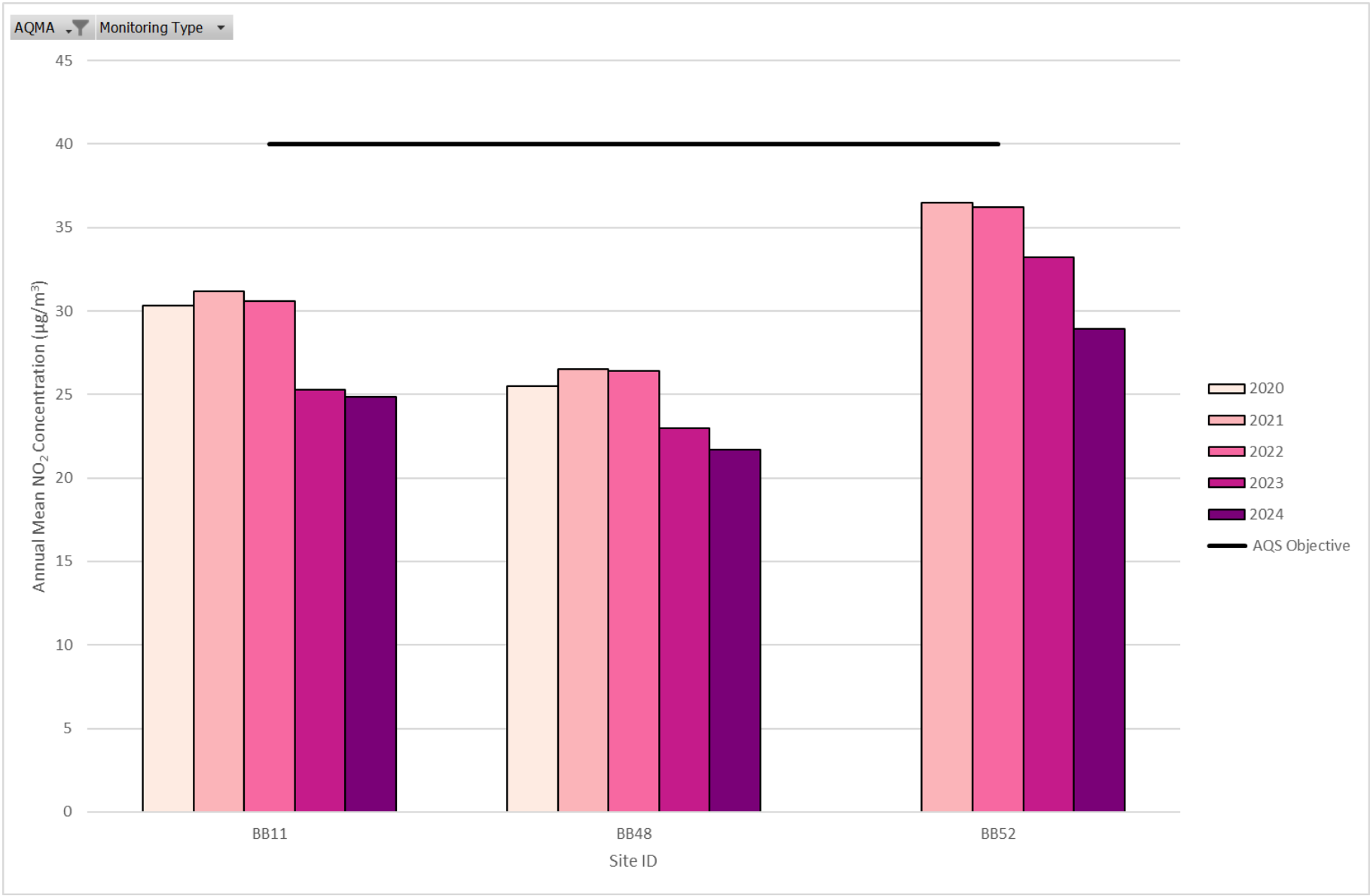


Figure A.2 – Trends in Annual Mean NO_2 Concentrations in AQMA No.4

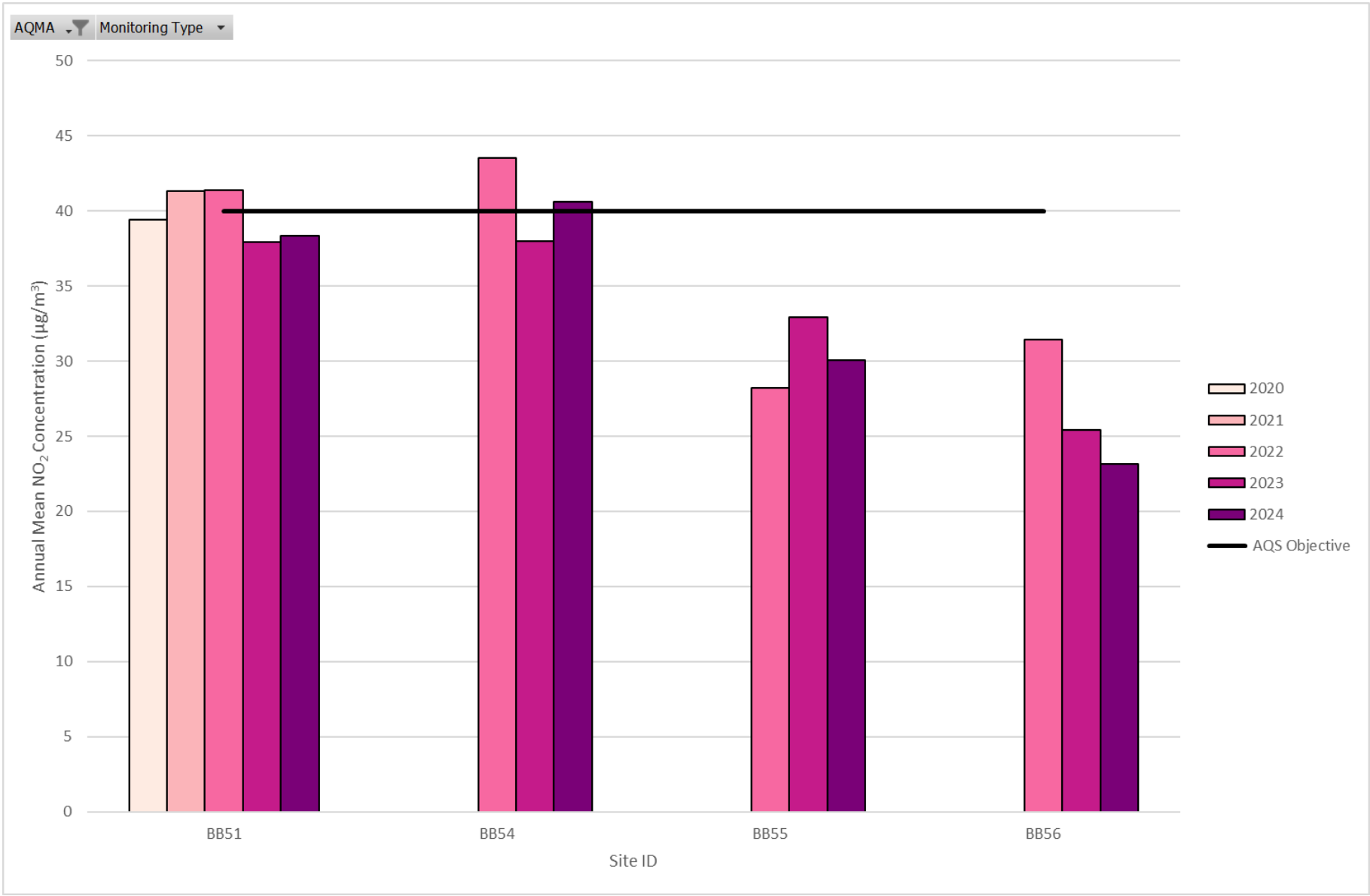


Figure A.3 – Trends in Annual Mean NO_2 Concentrations in AQMA No.6

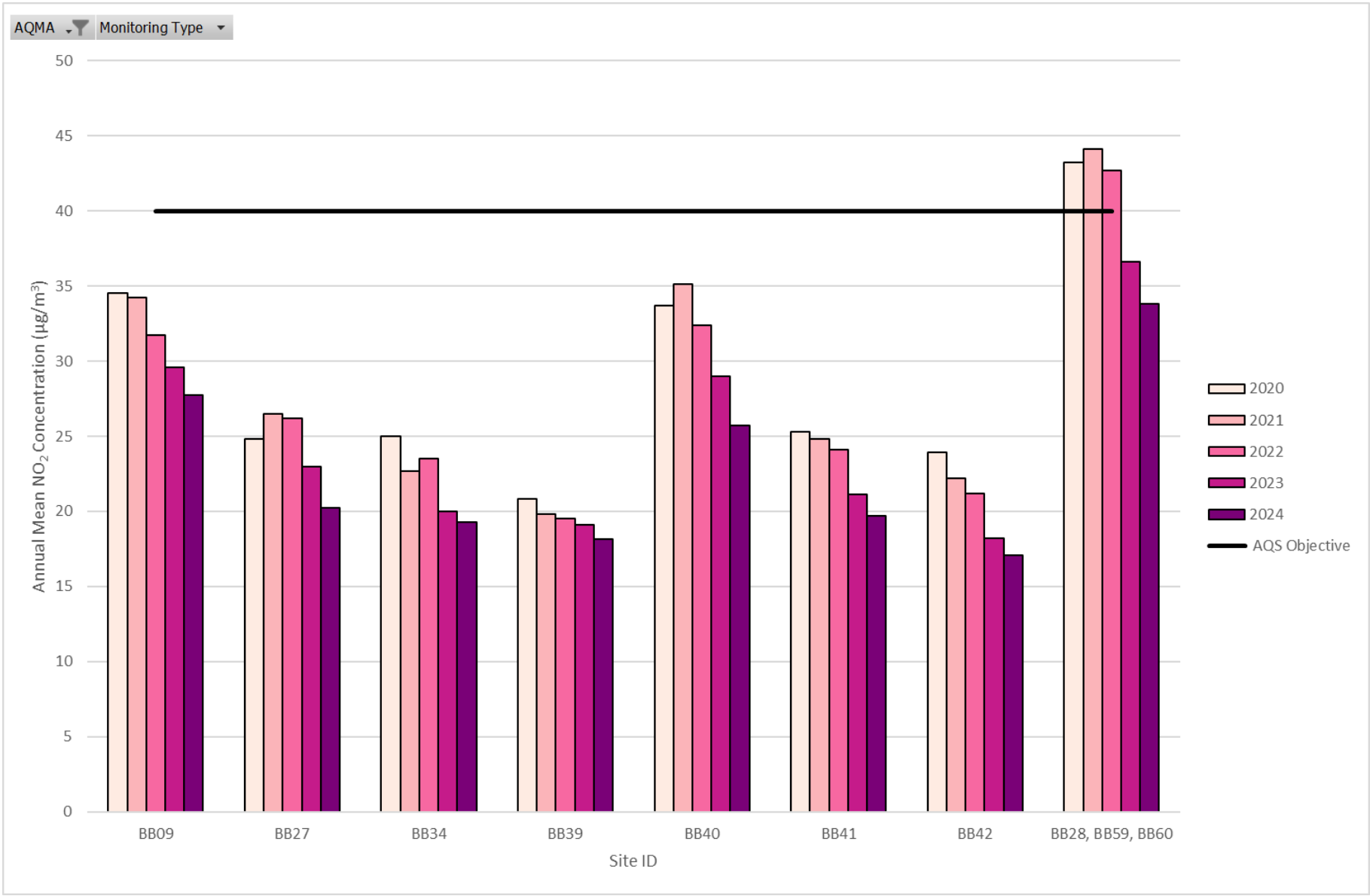


Figure A.4 – Trends in Annual Mean NO_2 Concentrations Outside any AQMA: Part 1

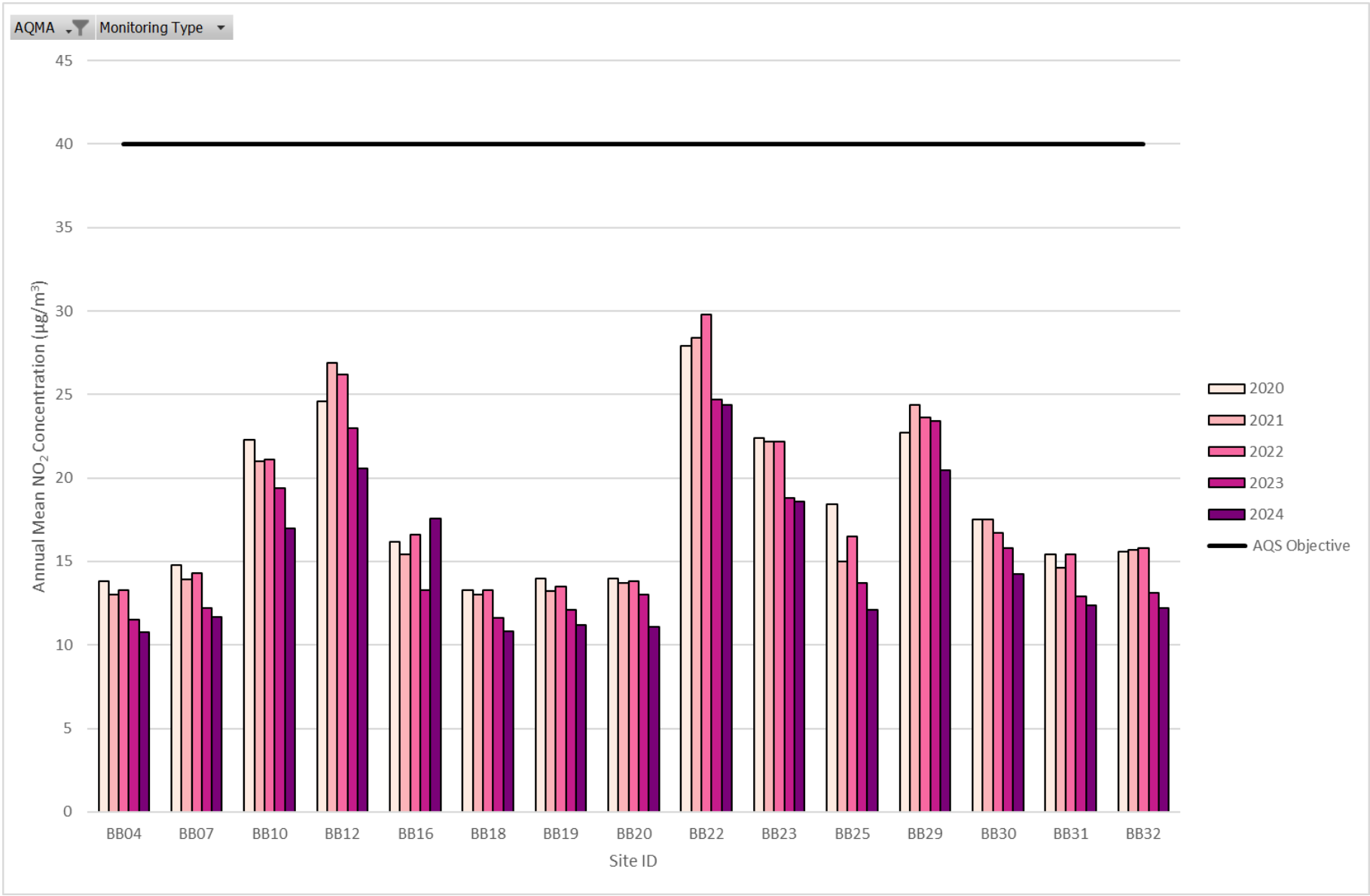
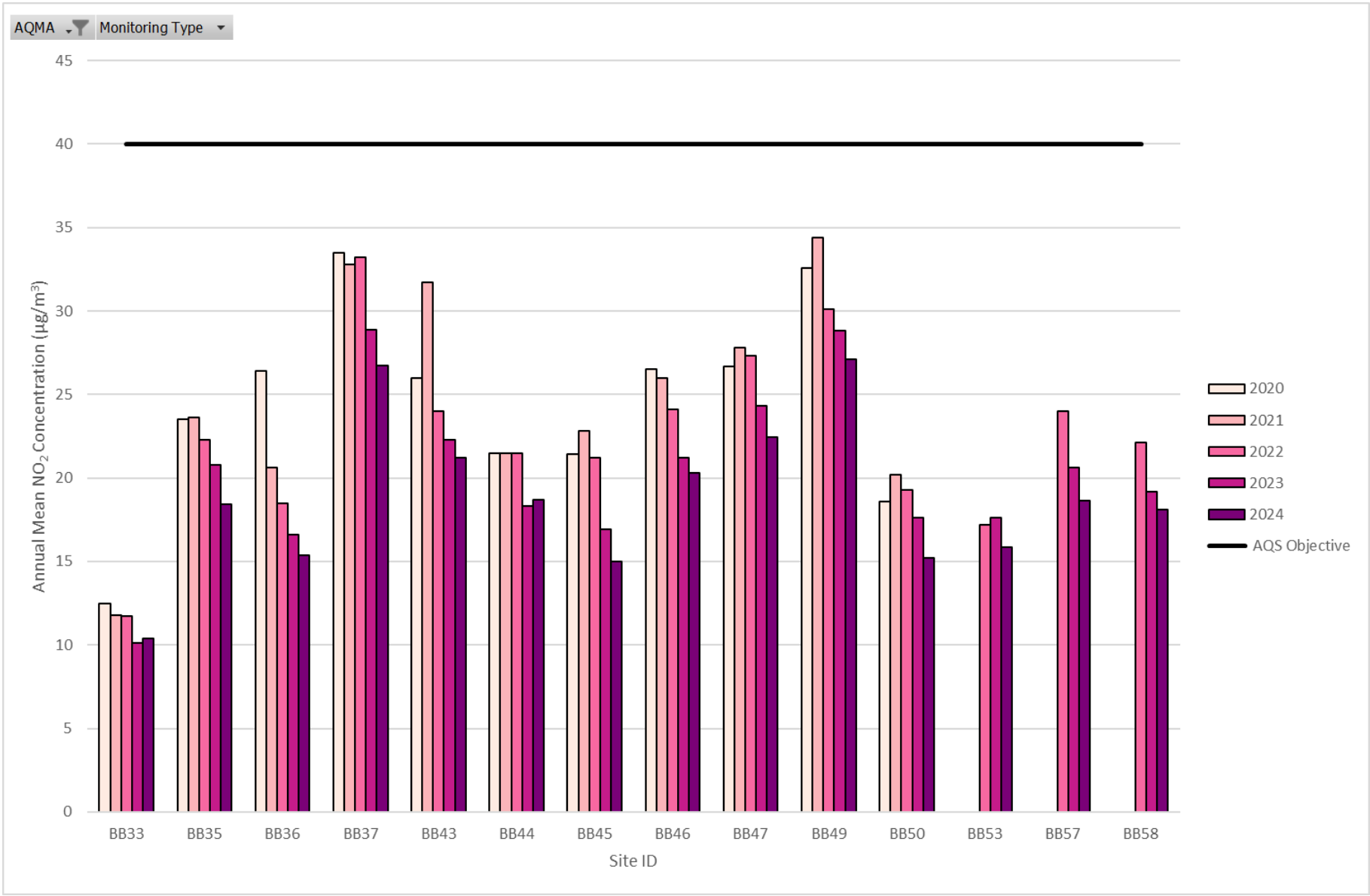


Figure A.5 – Trends in Annual Mean NO_2 Concentrations Outside any AQMA: Part 2



Appendix B: Full Monthly Diffusion Tube Results for 2024

Table B.1 – NO_2 2024 Diffusion Tube Results (µg/m^3)

DT ID	X OS Grid Ref (Easting)	Y OS Grid Ref (Northing)	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual Mean: Raw Data	Annual Mean: Annualised and Bias Adjusted <(0.84)>	Annual Mean: Distance Corrected to Nearest Exposure	Comment
BB04	536954	206432	19.4	16.2	14.2	8.9	9.3	7.7	9.4	9.4	10.5	13.6	18.6	16.8	12.8	10.8		
BB07	537300	210500	19.6	17.3	15.4	9.9	9.9	8.6	10.2	10.6	11.6	16.7	21.7	15.6	13.9	11.7	-	
BB09	535314	202312	36.4	36.3	37.0	28.4	33.0	29.9	27.9	28.6	32.7	37.0	40.1	29.0	33.0	27.7	-	
BB10	535400	200100	26.7	28.0	23.6	17.8	15.6	17.4	15.3	15.7	16.9	19.7	25.8	20.2	20.2	17.0	-	
BB11	536055	200090	32.8	29.5	34.2	25.3	27.6	24.6	25.5	27.4	27.0	34.1	36.7	30.6	29.6	24.9	-	
BB12	536611	205768	31.4	29.3	26.3	22.0	24.0	19.6	19.7	19.0	22.0	25.4	29.7	25.7	24.5	20.6	-	
BB16	538540	209497			17.1				17.1	16.7	17.9	27.4	28.1	23.6	21.1	17.6	-	
BB18	535500	203740	19.0	16.2	16.0	9.3	9.0	6.7	8.1	8.9	11.3	15.8	18.1	15.8	12.9	10.8	-	
BB19	532916	204109	19.0	16.1	14.8	9.4	9.9		9.8	9.6	10.9	15.3	17.9	13.9	13.3	11.2	-	
BB20	531956	203091	18.5	17.4	15.6	7.7	9.6	7.6	9.6	8.9	10.5	16.6	20.7	15.6	13.2	11.1	-	
BB22	536000	200750	31.6	31.3	36.1	25.9	24.8	23.6	30.3	27.6	24.3	29.7	34.0	29.2	29.0	24.4	-	
BB23	536000	200680	28.0	25.7	24.4	17.6	19.7	17.3	19.6	18.9	20.2	25.3	25.2	23.5	22.1	18.6	-	
BB25	531556	200869	18.5	19.7	17.7	12.1	9.6	11.3	13.8	14.1	11.8	13.5	14.5	16.1	14.4	12.1	-	
BB27	535727	202236	27.3	25.4	29.4	19.7	22.7	18.1	20.4	18.8	22.5	27.7	32.2	24.5	24.1	20.2	-	
BB29	535466	202982	30.2	30.8	29.4	23.2	24.3	21.8	23.3	24.8	22.3	29.6	6.2	26.8	24.4	20.5	-	
BB30	535895	204232	21.5		40.4	12.3	13.0	11.4	11.1	12.2	12.7	17.2	18.7	16.5	17.0	14.3	-	
BB31	536008	204805	20.7	17.1	15.4	10.2	11.3	11.9	12.5	12.0	12.7	15.8	21.3	15.6	14.7	12.3	-	
BB32	536037	205815	20.3	16.4	16.0	10.6	11.9	10.8	11.3	11.2	12.9	15.8	21.1	16.0	14.5	12.2	-	

BB33	536042	206769	16.2	13.6	12.0		9.4	7.9	8.3	9.8	10.4	13.7		22.5	12.4	10.4	-	
BB34	536191	208841	29.9	27.4	24.2	21.1	20.3	20.3	20.2	19.3	21.0	20.1	27.6	23.9	22.9	19.3	-	
BB35	535323	202036	31.0	25.0	26.6	14.3	20.3	17.1	20.0	18.3	20.5	19.8	28.1		21.9	18.4	-	
BB36	535526	202276	24.3	23.6	21.4	13.7		14.9	14.2	5.0	20.2	20.2	24.8	18.8	18.3	15.4	-	
BB37	537747	209054	36.4	34.3	35.6	25.9	30.4	29.3	30.1	29.1	30.4	33.7	37.5	28.9	31.8	26.7	-	
BB39	537448	209135		36.1	21.9	18.2		19.6	17.6	15.9	18.8	21.9	24.9	21.2	21.6	18.2	-	
BB40	535107	202160	33.7	25.1	35.1	27.7	29.5	30.0	30.3	29.3	31.7	33.0	33.0	28.7	30.6	25.7	-	
BB41	535314	202244	30.1	27.8	24.5	20.0	21.2	19.0	20.6	19.3	21.7	22.1	31.4	24.0	23.5	19.7	-	
BB42	535910	203822	28.9	24.2	22.9	18.1	19.5	18.7	6.0	14.2	18.9	21.3	28.4	23.0	20.3	17.1	-	
BB43	535516	202989	34.0	31.5	27.6	22.3	21.1	18.2	20.1	20.8	20.9	25.7	32.5	28.5	25.3	21.2	-	
BB44	536434	205004	32.3	24.8	25.2	18.8		16.7	15.9		18.5	22.2	27.5	21.4	22.3	18.7	-	
BB45	536673	206608						14.6	13.7	16.9	17.7	24.3	13.6	18.9	17.1	15.0	-	
BB46	536847	207237		29.7	28.2	20.8	22.2	20.1	21.1	19.8	24.4	22.2	31.4	25.9	24.2	20.3	-	
BB47	536883	207545			30.4	24.7	25.3	23.3	23.0	23.6	26.8	31.8	30.8	27.7	26.7	22.5	-	
BB48	535931	202197	32.0	30.1	31.0	24.3	23.6	16.6	21.1	21.6	24.7	26.8	32.2	25.6	25.8	21.7	-	
BB49	536213	200113	36.1	34.3	36.1	28.2	31.7	28.1	26.9	29.3	30.6	36.7	39.2	30.2	32.3	27.1	-	
BB50	535990	200800		19.7	19.2	14.3	17.5	13.6	13.9	14.6	19.3	22.1	25.9	18.9	18.1	15.2	-	
BB51	537646	208979	47.6	45.6	45.9	37.6	43.9	40.4	45.1	45.7	48.0	53.4	50.1	44.1	45.6	38.3	32.1	
BB52	536265	200375	39.9	40.6	46.7	35.2	33.1	27.8	31.2	31.4	27.7	33.2	34.6	31.9	34.4	28.9	-	
BB53	536224	200027	25.2	24.5	19.7	14.8	14.9	15.3	15.9	16.1	15.7	18.9	24.5	21.1	18.9	15.9	-	
BB54	535434	200090	51.1	48.1	43.3	46.0	47.4	48.0	47.5			48.5	57.9	45.9	48.4	**40.6**	34.0	
BB55	536250	200391	39.3	43.0	45.0	31.5	32.1	30.8	34.7	34.4	31.1	29.7	40.7	36.8	35.8	30.0	-	
BB56	536312	200436		29.6	31.3		23.8	23.0	24.8	25.0	22.2	38.1	30.4		27.6	23.2	-	

BB57	536414	200399	29.4	28.7	25.8	17.8	18.7	18.0	18.1	18.7	20.1	22.4	28.4	20.2	22.2	18.6	-	
BB58	535325	202913	26.6	23.3	20.5	15.5	18.3	16.6	16.7	20.0	25.4	26.1	25.7	24.2	21.6	18.1	-	
BB28	531516	202874	42.4	41.8	43.5	34.8	38.1	40.2	34.0	38.3	39.2	42.4	44.6	38.1	-	-	-	Triplicate Site with BB28, BB59 and BB60 - Annual data provided for BB60 only
BB59	535466	202982	44.3	45.3	43.8	35.8	38.5	40.2	41.3	40.9	38.7	35.7	45.4	36.8	-	-	-	Triplicate Site with BB28, BB59 and BB60 - Annual data provided for BB60 only
BB60	535466	202982	47.1	46.4	36.8	36.7	41.6	40.7	40.7	40.4	32.9	39.5	44.9	38.1	40.3	33.8	-	Triplicate Site with BB28, BB59 and BB60 - Annual data provided for BB60 only

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

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

☐ **Local bias adjustment factor used.**

☒ **National bias adjustment factor used.**

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

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

Notes:

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

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

See Appendix C for details on bias adjustment and annualisation.

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

New or Changed Sources Identified Within Broxbourne Borough Council During 2024

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

Additional Air Quality Works Undertaken by Broxbourne Borough Council During 2024

In 2024, the Council adopted and published the Air Quality Action Plan (AQAP) 2024 covering all three AQMA.

QA/QC of Diffusion Tube Monitoring

Broxbourne Borough Council's diffusion tubes in 2024 were supplied and analysed by Gradko International Ltd., using the 20% Triethanolamine (TEA) in water preparation method. Gradko's laboratory is UKAS accredited, participating in the AIR-PT Scheme (a continuation of the Workplace Analysis Scheme for Proficiency (WASP)) for NO_2 tube analysis and the Annual Field Inter-Comparison Exercise. These provide strict performance criteria for participating laboratories to meet, thereby ensuring NO_2 concentrations reported are of a high calibre. The lab follows the procedures set out in the Harmonisation Practical Guidance. In the latest available AIR-PT results for 2024, AIR PT AR062 to AR066 (covering January to October 2024), Gradko scored 100%. The percentage score reflects the results deemed to be satisfactory based upon the z-score of $< \pm 2$, which indicates satisfactory laboratory performance.

All local authority co-location studies which use tubes supplied by Gradko with the 20% TEA in water preparation method in 2024 were rated as 'good', as shown by the precision summary results. This precision reflects the laboratory's performance and consistency in preparing and analysing the tubes, as well as the subsequent handling of the tubes in the field. Tubes are considered to have a "good" precision where the coefficient of variation of duplicate or triplicate diffusion tubes for eight or more monitoring periods during a year is less than 20%.

Further information on the precision summary results can be found on the LAQM website.

Monitoring in 2024 had been completed in adherence with the 2024 Diffusion Tube Monitoring Calendar, whereby most changeovers were completed within ±2 days of the specified date.

Diffusion Tube Annualisation

Annualisation was required at two sites BB16 and BB45 which recoded a data capture below 75%. Urban background AURN sites used to complete this were Borehamwood Meadow Park, London Bloomsbury, London Haringey Priory Park South and North Kensington. These were selected as they were the nearest AURN urban background monitoring locations with greater than 85% data capture in 2024. Annualisation was completed using the latest version of the LAQM Diffusion Tube Data Processing Tool, and the outputs are presented in the below table.

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

Site ID	Annualisation Factor Borehamwood Meadow Park	Annualisation Factor London Bloomsbury	Annualisation Factor London Haringey Priory Park South	Annualisation Factor London N. Kensington	Average Annualisation Factor	Raw Data Annual Mean	Annualised Annual Mean
BB16	0.9320	0.9966	1.0362	0.9965	0.9903	21.1	20.9
BB45	0.9918	1.0513	1.1050	1.0285	1.0442	17.1	17.8

Diffusion Tube Bias Adjustment Factors

The diffusion tube data presented within the 2025 ASR have been corrected for bias using an adjustment factor. Bias represents the overall tendency of the diffusion tubes to under or over-read relative to the reference chemiluminescence analyser. LAQM.TG22 provides guidance with regard to the application of a bias adjustment factor to correct diffusion tube monitoring. Triplicate co-location studies can be used to determine a local bias factor based on the comparison of diffusion tube results with data taken from NO_x/NO_2 continuous analysers. Alternatively, the national database of diffusion tube co-location surveys provides bias factors for the relevant laboratory and preparation method.

Broxbourne Borough Council have applied a national bias adjustment factor of 0.84 to the 2024 monitoring data. The council does not undertake automatic monitoring and therefore is not able to calculate a local bias adjustment factor.

A summary of bias adjustment factors used by Broxbourne 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
2024	National	09/25	0.84
2023	National	03/24	0.81
2022	National	03/23	0.84
2021	National	03/22	0.84
2020	National	03/21	0.81

A single national bias adjustment factor has been used to bias adjust the 2024 diffusion tube results.

Figure C.1 – National Bias Adjustment Selection

National Diffusion Tube Bias Adjustment Factor Spreadsheet — Spreadsheet Version Number: 09/25

Follow the steps below in the correct order to show the results of relevant co-location studies
Data only apply to tubes exposed monthly and are not suitable for correcting individual short-term monitoring periods
Whenever presenting adjusted data, you should state the adjustment factor used and the version of the spreadsheet
This spreadsheet will be updated every few months: the factors may therefore be subject to change. This should not discourage their immediate use.

This spreadsheet will be updated at the end of March 2026
LAQM Helpdesk Website

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.

Spreadsheet maintained by the National Physical Laboratory. Original compiled by Air Quality Consultants Ltd.

Step 1: Select the Laboratory that Analyses Your Tubes from the Drop-Down List
If a laboratory is not shown, we have no data for this laboratory.

Step 2: Select a Preparation Method from the Drop-Down List
If a preparation method is not shown, we have no data for this method at this laboratory.

Step 3: Select a Year from the Drop-Down List
If a year is not shown, we have no data

Step 4:
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 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 (To undo your selection, choose (All) from the pop-up list)	Year (To undo your selection, choose (All))	Site Type	Local Authority	Length of Study (months)	Diffusion Tube Mean Conc. (Dm) (µg/m³)	Automatic Monitor Mean Conc. (Cm) (µg/m³)	Bias (B)	Tube Precision	Bias Adjustment Factor (A) (Cm/Dm)
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	R	Cheshire West And Chester	12	33	27	21.7%	G	**0.82**
Gradko	20% TEA in water	2024	R	Cheshire West And Chester	11	30	27	12.9%	G	**0.89**
Gradko	20% TEA in water	2024	R	The Highland Council	12	19	18	6.9%	G	**0.94**
Gradko	20% TEA in water	2024	R	The Highland Council	11	15	11	35.3%	G	**0.74**
Gradko	20% TEA in water	2024		**Overall Factor (31 studies)**				Use		**0.84**

NO_2 Fall-off with Distance from the Road

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

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

Table C.3 – Non-Automatic NO_2 Fall off With Distance Calculations (concentrations presented in µg/m^3)

Site ID	Distance (m): Monitoring Site to Kerb	Distance (m): Receptor to Kerb	Monitored Concentration (Annualised and Bias Adjusted	Background Concentration	Concentration Predicted at Receptor	Comments
BB51	2.5	7.1	38.3	14.3	32.1	
BB54	3.0	8.0	40.6	14.3	34.0	

QA/QC of Automatic Monitoring

Broxbourne Borough Council does not undertake any automatic monitoring during 2024.

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

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

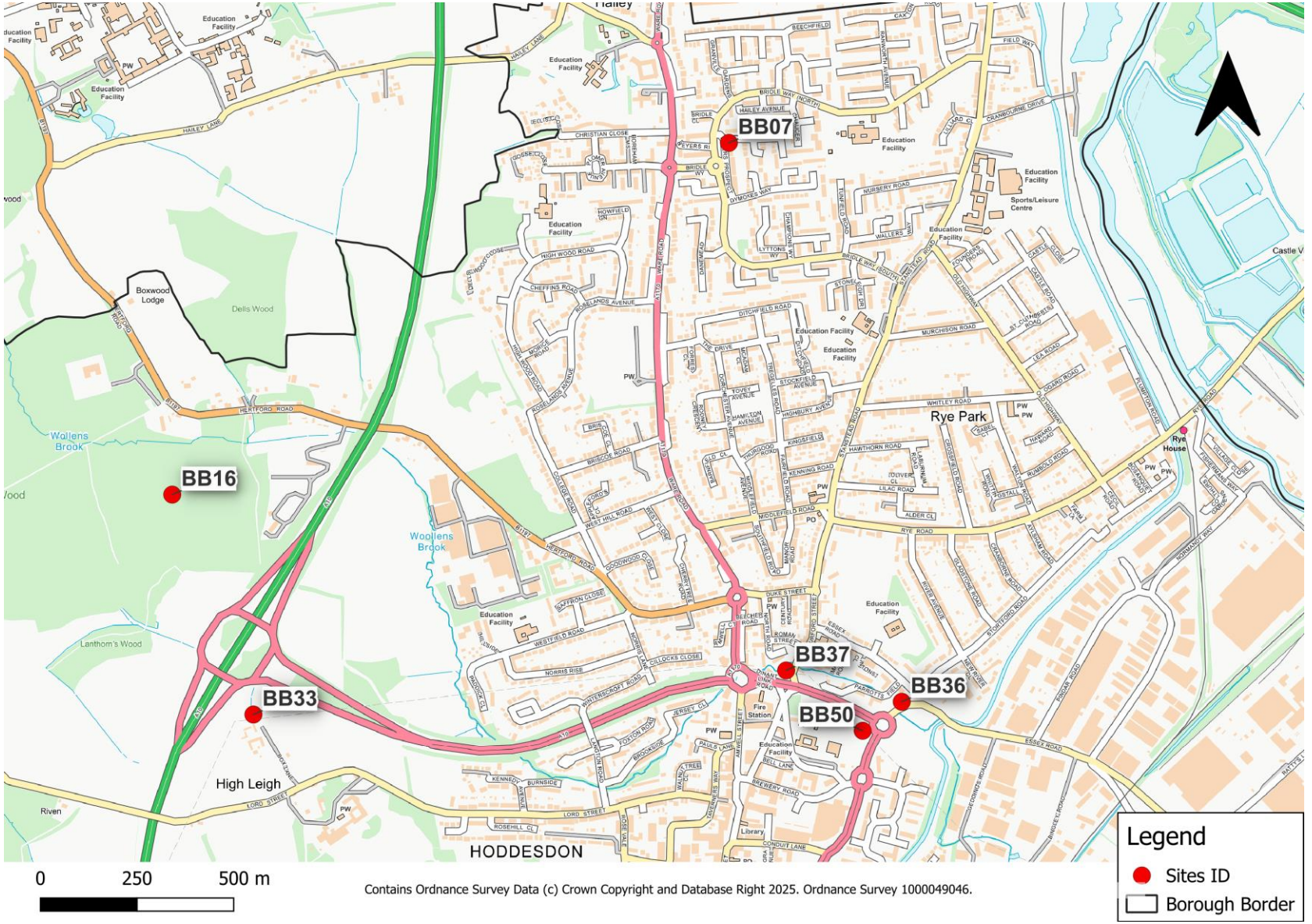


Figure D.2 – Map of Non-Automatic Monitoring Site – Hoddesdon

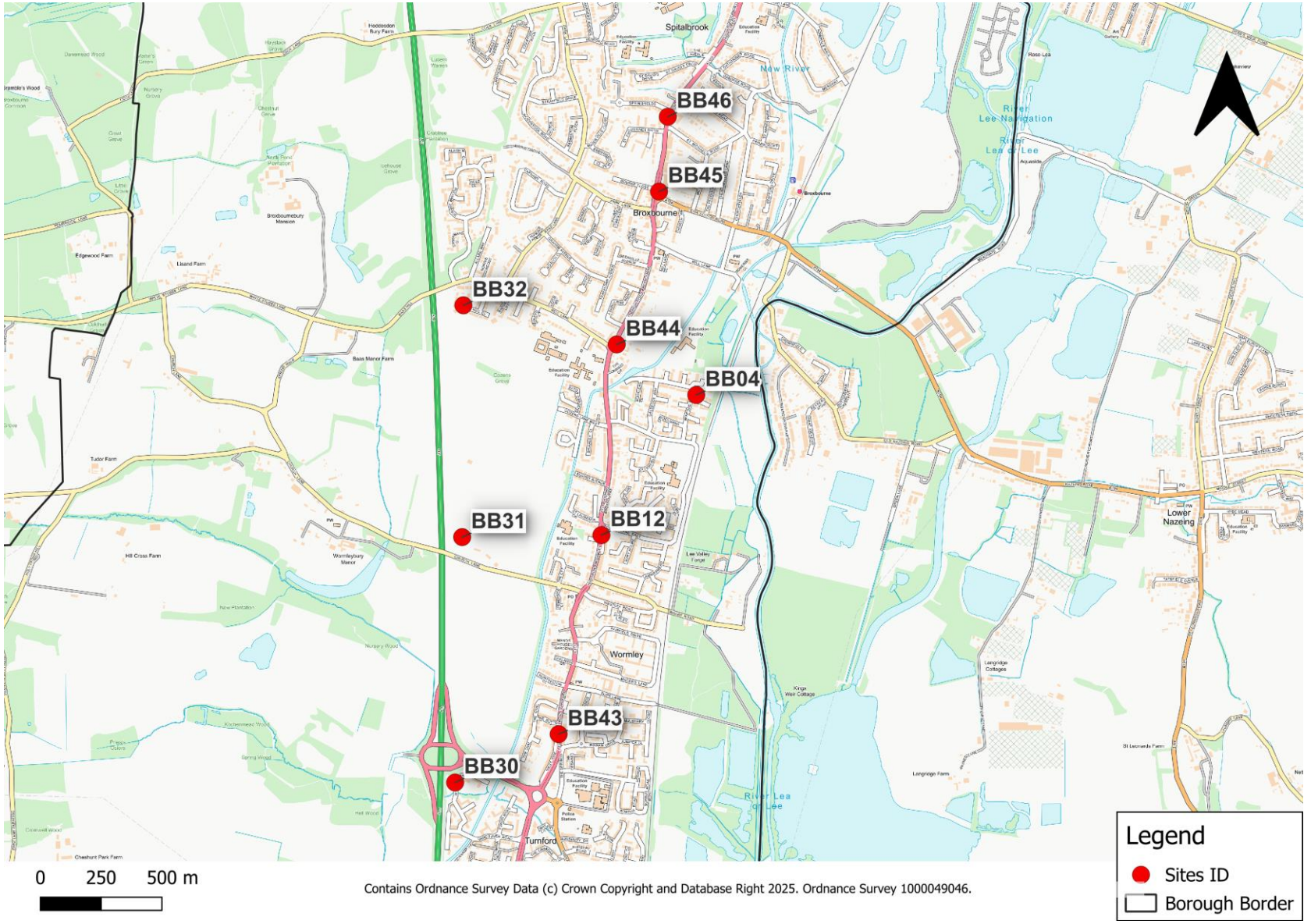


Figure D.3 – Map of Non-Automatic Monitoring Site – AQMA 6

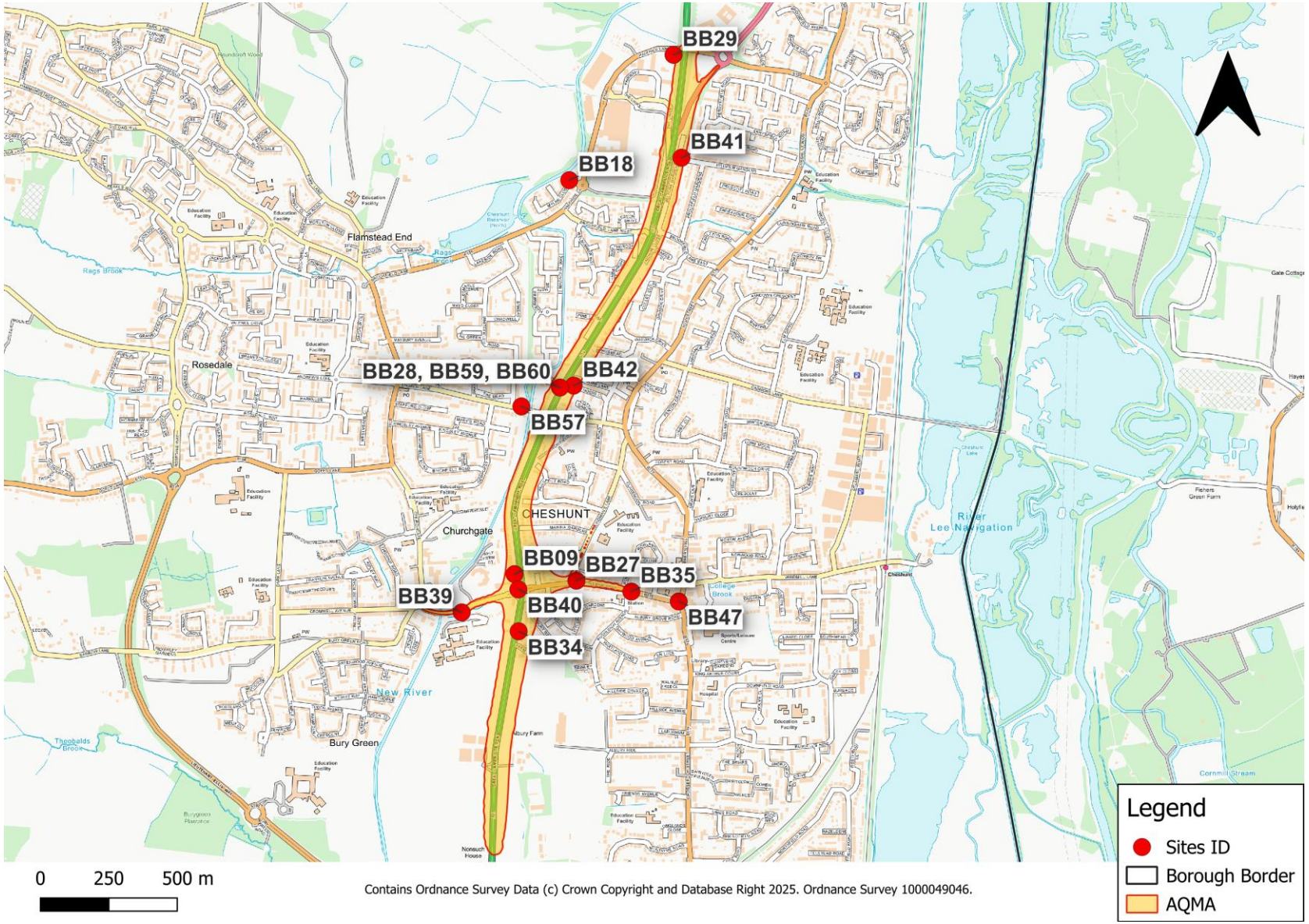


Figure D.4 – Map of Non-Automatic Monitoring Site – AQMAs 1 and 4

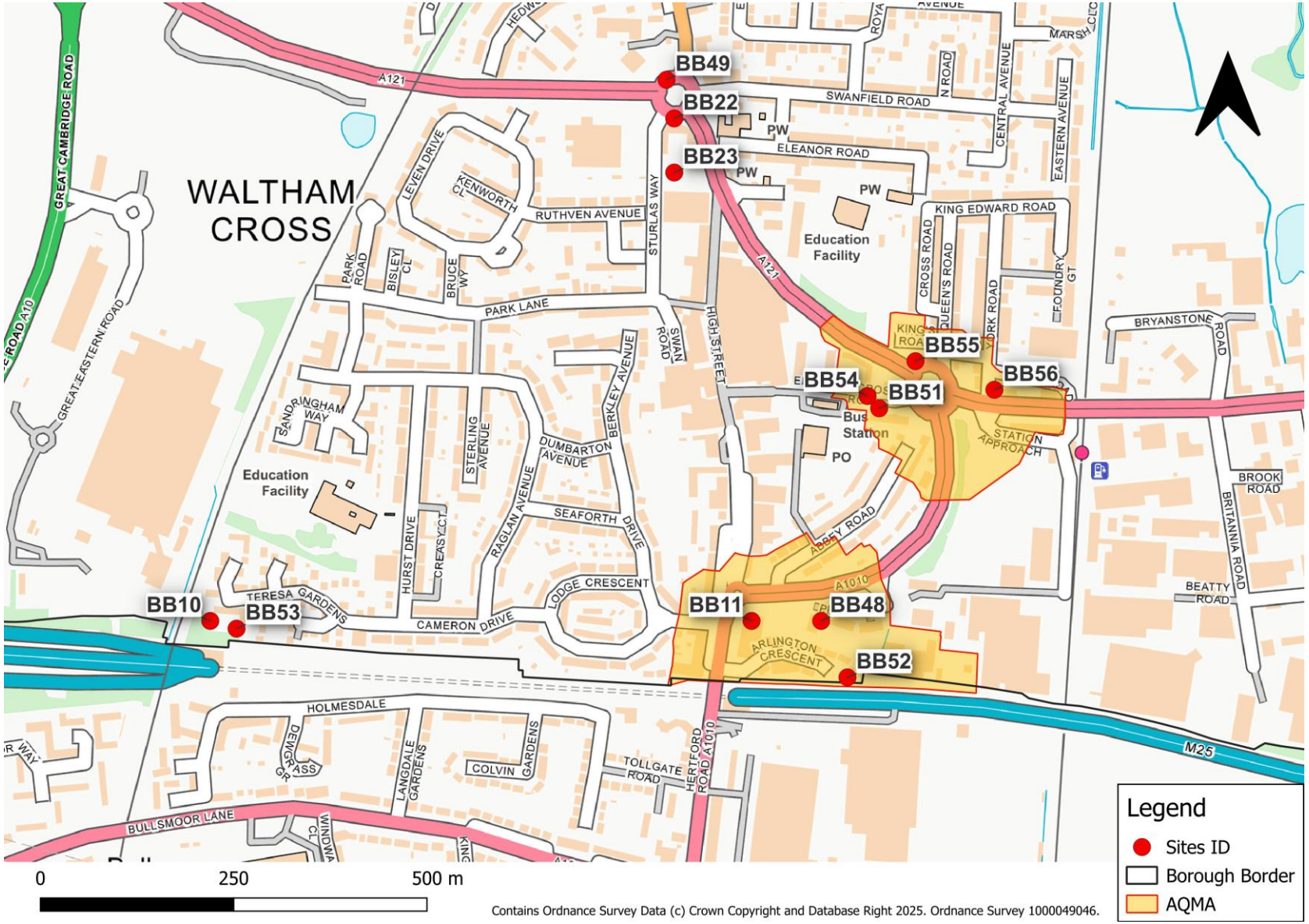
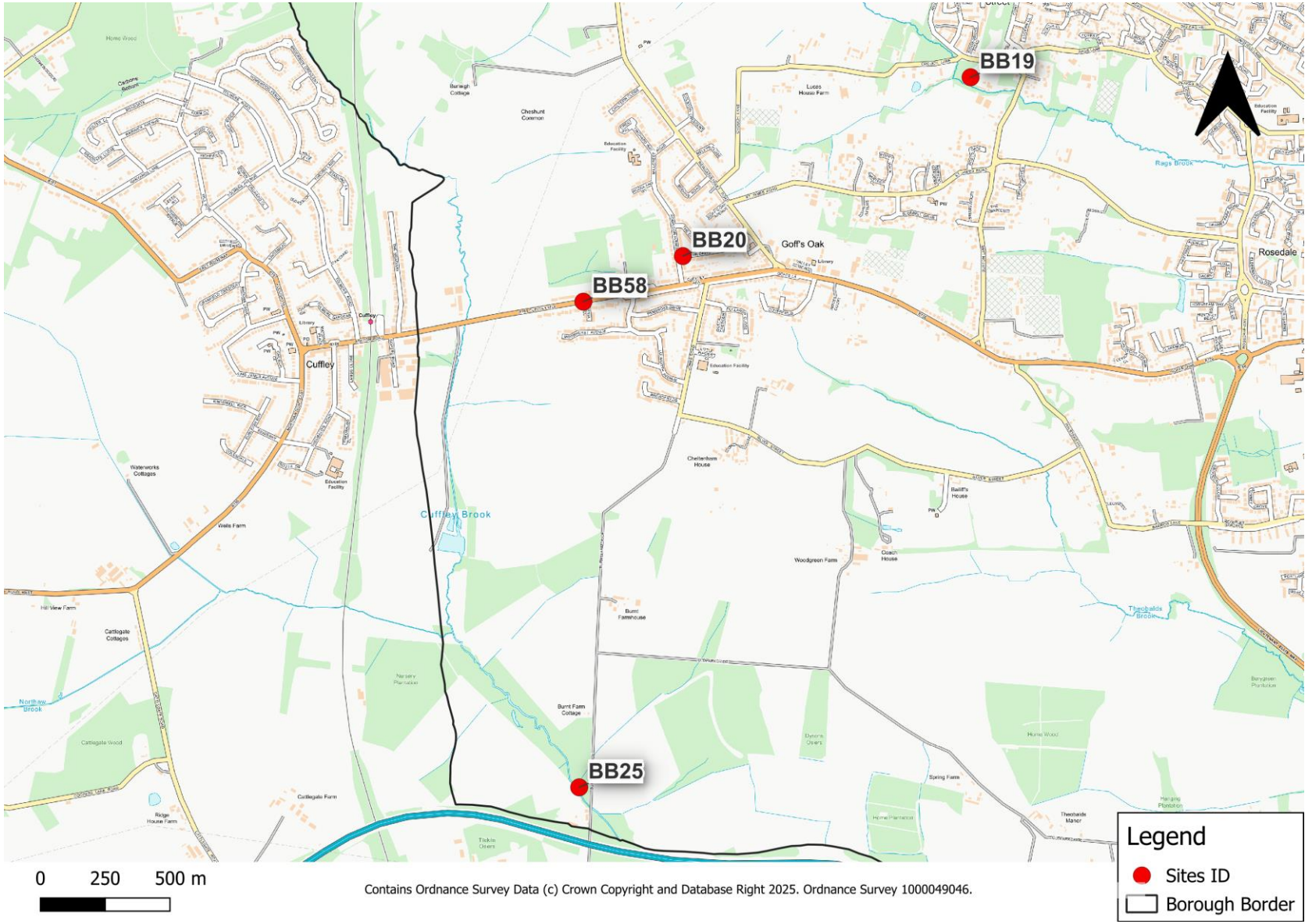


Figure D.5 – Map of Non-Automatic Monitoring Site – West Cheshunt



Appendix E: Summary of Air Quality Objectives in England

Table E.1 – Air Quality Objectives in England[8]

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

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

Glossary of Terms

Abbreviation	Description
AQAP	Air Quality Action Plan - A detailed description of measures, outcomes, achievement dates and implementation methods, showing how the local authority intends to achieve air quality limit values'
AQMA	Air Quality Management Area – An area where air pollutant concentrations exceed / are likely to exceed the relevant air quality objectives. AQMAs are declared for specific pollutants and objectives
ASR	Annual Status Report
Defra	Department for Environment, Food and Rural Affairs
DMRB	Design Manual for Roads and Bridges – Air quality screening tool produced by National Highways
EU	European Union
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.
- Broxbourne Borough Council Air Quality Reports – 2022, 2023, 2024 ASRs. Available at: https://www.broxbourne.gov.uk/airquality
- Broxbourne Borough Council Local Plan 2018-2033. Available at: https://www.broxbourne.gov.uk/planning/local-plan-2018-2033/1
- National Diffusion Tube Bias Adjustment Factor Spreadsheet, version 09/25. Published in September 2025.