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Annual Status Report 2024

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BOROUGH OF BROXBOURNE

2024 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 2024

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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. In the UK, it is estimated that the reduction in healthy life expectancy caused by air pollution is equivalent to 29,000 to 43,000 deaths a year¹.

Air pollution particularly affects the most vulnerable in society, children, the elderly, and those with existing heart and lung conditions. Additionally, people living in less affluent areas are most exposed to dangerous levels of air pollution².

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})	<p>Particulate matter is everything in the air that is not a gas.</p> <p>Particles can come from natural sources such as pollen, as well as human made sources such as smoke from fires, emissions from industry and dust from tyres and brakes.</p> <p>PM₁₀ refers to particles under 10 micrometres. Fine particulate matter or PM_{2.5} are particles under 2.5 micrometres.</p>

¹ UK Health Security Agency. Chemical Hazards and Poisons Report, Issue 28, 2022.

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

Broxbourne is a unitary council in the Southeast of England, with a population of approximately 99,007³ (2021). It is located in the southeast of Hertfordshire.

There are currently three Air Quality Management Areas (AQMA) declared within the borough. All have been designated due to exceedances of the annual mean air quality objective (AQO) for nitrogen dioxide (NO₂) and NO₂ 1 hour mean AQO. The elevated concentrations are caused primarily by road traffic emissions. The AQMA 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 2023, Broxbourne Borough Council undertook passive monitoring (non-automatic monitoring) for nitrogen dioxide (NO₂) at 44 sites across the district. No automatic monitoring was carried out.

During 2023, there were no exceedance of the annual mean AQS Objective recorded at any sites. Three sites, BB51, BB54 and triplicate site BB28/BB59/BB60 however recorded concentrations within 10% of the NO₂ annual mean AQS objective (above 36µg/m³).

These sites are located within AQMA 4 and 6. These sites are however not located at a site of relevant exposure, and following fall-off with distance correction calculations, all concentrations were below 36µg/m³.

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/m³, in line with LAQM guidance it is not likely there were any exceedances of the 1-hour NO₂ AQS objective in 2023.

³ 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/populationestimatesforukenglandandwalescotlandandnorthernireland>

Actions to Improve Air Quality

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

The Environmental Improvement Plan⁴ 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 Strategy⁵ provides more information on local authorities' responsibilities to work towards these new targets and reduce fine particulate matter in their areas.

The Road to Zero⁶ 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 2023 was the preparation of the Air Quality Action Plan (AQAP) which is currently in draft form and is pending sign off following its consultation phase. 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.

⁴ Defra. Environmental Improvement Plan 2023, January 2023

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

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

Conclusions and Priorities

The AQMA 1 Arlington Crescent to Abbey Road has been compliant for the past four years (2020 to 2023). The maximum concentration recorded in 2023 was $33.2\mu\text{g}/\text{m}^3$ at BB52.

The other two AQMAs (AQMA 4 Eleanor Cross Road/Monarchs Way and AQMA 6 Great Cambridge Road (A10) & College Road) achieved compliance in 2023 after distance correction to nearest relevant exposure, with maximum concentrations of $32.5\mu\text{g}/\text{m}^3$ (BB54) and $27.5\mu\text{g}/\text{m}^3$ (triplicate site BB28, BB59, BB60).

There are no revocations being currently considered within the Broxbourne Borough Council (BBC). In AQMA 1, compliance was first achieved in 2020 and is therefore unlikely to be representative of long-term trends in pollutant concentrations due to the impact of COVID-19 and associated lock down measures. Similarly in 2021, pollutant concentrations continued to be impacted by the change in typical activity that resulted from COVID-19 restrictions. Revocation of AQMA 1 will therefore be considered after five years of compliance.

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

In 2023, Broxbourne Borough Council has prepared a single AQAP covering the three AQMAs. The AQAP is currently pending sign off following its consultation phase.

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:

- Sign-off AQAP for the three AQMAs;
- 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.

Local Engagement and 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.

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:

John Rekoumis - Environmental Health Technical Officer ACIEH

This ASR has been approved by:

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

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1 Local Air Quality Management

This report provides an overview of air quality in Broxbourne Borough Council during 2023. 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 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 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 3 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 (NO₂);
- **AQMA No. 4** – Declared for exceedances of the annual mean air quality objective for NO₂; and
- **AQMA No.6** – Declared for exceedances of the annual mean and 1-hour mean air quality objectives for NO₂.

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 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	33.2 µg/m ³	4 years	The Borough of Broxbourne's Single Air Quality Action Plan (Draft - April 2024)	N/A
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	32.5µg/m ³	Not compliant	The Borough of Broxbourne's Single Air Quality Action Plan (Draft - April 2024)	N/A

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	27.5 µg/m ³	Not compliant	The Borough of Broxbourne's Single Air Quality Action Plan (Draft - April 2024)	N/A

*Predicted concentration at the nearest receptor using the Fall off with Distance calculator (see Appendix C: Supporting Technical Information / Air Quality Monitoring Data QA/QC for further information).

- 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 the following:

1. Clear maps are presented to highlight the locations of AQMAs and monitoring locations. However, the labels are often difficult to make out against the background mapping, and it may be useful to put the label text in bold so that these stand out more.
2. The Council have highlighted that three additional sites were added within AQMA 4 to extend the monitoring network within this AQMA. These changes to the monitoring network highlight that the Council are committed to highlighting any hotspots of air quality, and to ensuring that concentrations within the AQMAs are well captured. The Council should continue to review their monitoring network annually to ensure any additional hotspots of poor air quality are captured.
3. 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). It has been noted that the Council intend to include measures regarding PM_{2.5} in their upcoming AQAP. This is encouraged.
4. It may be beneficial for the Council to include a screen capture of the appropriate national bias adjustment factor spreadsheet to demonstrate that the correct factor has been applied.
5. 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 the ASR appraisals in future years.

In this year's ASR, maps have been updated for easier visualisation of monitoring site's ID. In addition, a screen capture of the relevant bias adjustment factor has been provided in Appendix C.

Broxbourne Borough Council has taken forward a number of direct measures during the current reporting year of 2023 in pursuit of improving local air quality. The Council progressed with its AQAP which is currently pending final sign-off after going through consultation. This action plan replaces the previous action plan which was implemented in

2004. 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 2023 presented. Where there have been, or continue to be, barriers restricting the implementation of the measure, these are also presented within Table 2.2.

Projects delivered through the past action plan implemented in 2004 include:

- Requiring developers to undertake an air quality assessment for planning applications associated with increased transport, and provided an air pollution mitigation plan where necessary;
- Implementation of Hertfordshire and Bedfordshire Air Pollution Alert System;
- Promotion of cycling, with maps and routes being periodically produced/updated by Sustrans as required;
- The replacement of petrol/diesel council pool cars with EV cars;
- The installation of EV charging points within council owned car parks. Three charging points have been installed at 5 locations across Broxbourne with a further additional three charging points planned within 4 other council carparks;
- Developing a service level agreement between BBC and Yorkshire Energy Services for determining resident's eligibility for grants for insulation and heating; and
- Launching an annual anti-idling campaign with involvement from local schools.

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

- The Council will strive 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 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;
- Air quality alerts to promote information to the most vulnerable; and
- Consider new technologies and their application to improve air quality in AQMAs.

Broxbourne Borough Council's priorities for the coming year are to get the AQAP signed off following its consultation phase. Actions from the plan will be undertaken once the final version of the plan is agreed and signed off.

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 achieve compliance in all AQMAs.

Table 2.2 – Progress on Measures to Improve Air Quality

Measure No.	Measure	Category	Classification	Estimated Year Measure to be Introduced	Estimated / Actual Completion Year	Organisations Involved	Funding Source	Defra AQ Grant Funding	Funding Status	Estimated Cost of Measure	Measure Status	Target Reduction in Pollutant / Emission from Measure	Key Performance Indicator	Progress to Date	Comments / Potential 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	TBC	< £10k	Implementation	< 0.5µg/m³	No. of implemented policies and planning procedures.		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	TBC	£50k - £100k	Planning	1 - 2 µg/m³	Percentage of reduction of NO ₂ concentrations.		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	TBC	< £10k	Implementation	< 0.5µg/m³	No. EV charge points		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	TBC	£50k - £100k	Implementation	< 0.5µg/m³	No. charge points and uptake in EVs, in total and per population.		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	TBC	< £10k	Implementation	< 0.5µg/m³	No. of implemented policies and planning procedures.		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	TBC	£50k - £100k	Planning	1 - 2 µg/m³	Percentage of reduction of NO ₂ concentrations.		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	TBC	£50k - £100k	Planning	< 0.5 µg/m³	Percentage of reduction of NO ₂ concentrations.		These improvements are pending funding from the Government (as outlined above).

Measure No.	Measure	Category	Classification	Estimated Year Measure to be Introduced	Estimated / Actual Completion Year	Organisations Involved	Funding Source	Defra AQ Grant Funding	Funding Status	Estimated Cost of Measure	Measure Status	Target Reduction in Pollutant / Emission from Measure	Key Performance Indicator	Progress to Date	Comments / Potential Barriers to Implementation
3a	The Council will encourage sustainable methods of travel by engaging with the workforce	Promoting Travel Alternatives	Workplace Travel Planning	Ongoing	2025	Sustainability Officer	TBC	TBC	TBC	< £10k	Implementation	< 0.5µg/m³	Workforce engaged with sustainability methods. In total and percentage.		A staff survey was sent out to all staff to gather information re: modes of travel.
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	TBC	< £10k	Planning	< 0.5µg/m³	No. of bicycles parking spaces. Bicycles AADT within the AQMAs.		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	TBC	£50k - £100k	Planning	0.5-1 µg/m³	Bicycles AADT within the AQMAs.		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	TBC	< £10k	Implementation	< 0.5µg/m³	Uptake of sustainable travel methods.		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	TBC	< £10k	Implementation	< 0.5µg/m³	Uptake of sustainable travel methods.		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	TBC	< £10k	Implementation	< 0.5µg/m³	No. of AADT from cars reduced and No. of remote work days		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	TBC	< £10k	Implementation	< 0.5µg/m³	Sustainable Business.		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	TBC	< £10k	Implementation	< 0.5µg/m³	No. of successful bids		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	TBC	< £10k	Implementation	< 0.5µg/m³	Percentage of reduction of NO ₂ concentrations.		The Council have worked with local schools in the Borough to raise the profile of poor Air Quality and respiratory health impacts.
4g	The Council are committed to reduce anti-idling at taxi ranks	Traffic Management	Anti-idling enforcement	Jul-23	2024	Head of Environmental Health & Licensing	TBC	TBC	TBC	< £10k	Implementation	< 0.5µg/m³	Percentage of reduction of NO ₂ concentrations.		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	TBC	< £10k	Implementation	< 0.5µg/m³	Percentage of electric taxi		The Council taxi policy has been reviewed to consider environmental impacts.

Measure No.	Measure	Category	Classification	Estimated Year Measure to be Introduced	Estimated / Actual Completion Year	Organisations Involved	Funding Source	Defra AQ Grant Funding	Funding Status	Estimated Cost of Measure	Measure Status	Target Reduction in Pollutant / Emission from Measure	Key Performance Indicator	Progress to Date	Comments / Potential Barriers to Implementation
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	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		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	TBC	< £10k	Implementation	< 0.5µg/m³	No. of EV provided for use by staff		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	TBC	< £10k	Implementation	< 0.5µg/m³	No. EV charge points		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	TBC	< £10k	Implementation	< 0.5µg/m³	Percentage EV charge points in Council car parks		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), Broxbourne borough – Enfield cross-boundary services; extending one or more TfL services to Park Plaza; extending the Brookfield service down into Enfield.	Transport Planning and Infrastructure	Bus route improvements	Apr-23	2025	Local Comms/HCC Comms cell	TBC	TBC	TBC	£50k - £100k	Implementation	< 0.5µg/m³	No. of new services provided. No. of public transport users.		HCC comms use Social media to get AQ messages out to the Public.
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	TBC	£50k - £100k	Planning	< 0.5µg/m³	No. and percentage of schools with free buses provided		HCC
6c	Public transport infrastructure improvements, e.g. - Enhanced bus shelters - Accurate electronic timetables - m-tickets /	Transport Planning and Infrastructure	Public transport improvements- interchanges stations and services	Ongoing	2026	HCC/Transport Policy Team	TBC	TBC	TBC	£50k - £100k	Implementation	< 0.5µg/m³	No. of public transport users.		Awaiting confirmation of whether the funding has been successful to implement this measure

Measure No.	Measure	Category	Classification	Estimated Year Measure to be Introduced	Estimated / Actual Completion Year	Organisations Involved	Funding Source	Defra AQ Grant Funding	Funding Status	Estimated Cost of Measure	Measure Status	Target Reduction in Pollutant / Emission from Measure	Key Performance Indicator	Progress to Date	Comments / Potential Barriers to Implementation
	contactless payment options														
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	TBC	£50k - £100k	Implementation	< 0.5µg/m³	No. of public transport users.		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	TBC	< £10k	Implementation	< 0.5µg/m³	No. of EV charging points and No. of EV		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	TBC	< £10k	Implementation	< 0.5µg/m³	No. of workforce engaged with the measure and AADT reduced for cars		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	TBC	< £10k	Implementation	< 0.5µg/m³	No. of workforce engaged with the measure and AADT reduced for cars		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	TBC	< £10k	Implementation	< 0.5µg/m³	No. of subscriptions to the air quality alert system.		
9	Consider new technologies and their application to improve air quality in AQMAs	Other	Other	Ongoing	2024		TBC	TBC	TBC	< £10k	Implementation	< 0.5µg/m³			

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 Strategy⁷, 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 PM₁₀ completed within Broxbourne Borough Council.

The Defra 2023 background maps (based on 2018 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/m³)⁸. The maximum predicted concentration is 11.1µg/m³, 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. It is important to note that these estimations do not take into consideration any impacts as a result of the COVID-19 pandemic. 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 (NH₃), and volatile organic compounds (VOCs).

The [Public Health Outcomes Framework data tool](#)⁹ compiled by Public Health England quantifies the mortality burden of PM_{2.5} within England on a county and local authority scale. The 2022 fraction of mortality attributable to PM_{2.5} pollution (indicator D01) across

⁷ Defra. Air Quality Strategy – Framework for Local Authority Delivery, August 2023

⁸ Defra. National air quality objectives. Available at: https://uk-air.defra.gov.uk/assets/documents/Air_Quality_Objectives_Update.pdf

⁹ Public Health Outcomes Framework. Available at: <https://fingertips.phe.org.uk/profile/public-health-outcomes-framework>

England is 5.8%, and in contrast the fraction within Broxbourne is above the national average at 6.7%.

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 NO₂ 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 2023 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 2019 and 2023 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 2023.

3.1.2 Non-Automatic Monitoring Sites

Broxbourne Borough Council undertook non- automatic (i.e. passive) monitoring of NO₂ at 44 sites during 2023. Table A.1 in Appendix A presents the details of the non-automatic sites. In 2023 no sites were added or relocated.

Maps showing the location of the monitoring sites in relation to the AQMAs 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 (NO₂)

Table A.2 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 2023 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 2023, there were no exceedances of the annual mean AQS Objective recorded at any sites. Three sites, BB51, BB54 and triplicate site BB28/BB59/BB60 however recorded concentrations within 10% of the NO₂ annual mean AQS objective (above 36µg/m³).

These sites are located within AQMA 4 and 6. These sites are however not located at a site of relevant exposure, and following fall-off with distance correction calculations, all concentrations remained below 36µg/m³.

Concentrations have decreased over the past five years, as illustrated on Figure A.1 to A.4, with an increase in 2023 compared to 2022 noted at BB55, located within AQMA.

At monitoring locations outside of any of the declared AQMAs, all NO₂ annual mean concentrations are below the AQS objective of 40µg/m³, with the maximum being 28.9µg/m³ reported at BB37.

As per [LAQM.TG\(22\)](#), an annual mean NO₂ concentration greater than 60µg/m³ can be used as a proxy to indicate whether there is an exceedance of the NO₂ 1-hour mean AQS objective (no more than 18 hourly mean concentrations in exceedance of 200µg/m³). None of the monitoring locations reported an annual mean concentration greater than 60µg/m³, 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	537000	206400	NO ₂	No	5	2	No	2.3
BB07	Molesworth Hoddesdon	Background	537300	210500	NO ₂	No	9	1	No	2.3
BB09	100 Great Cambridge Rd	Kerbside	535300	202300	NO ₂	Y - AQMA 6 Great Cambridge Road	12.4	3.5	No	2.3
BB10	Teresa Gardens Waltham Cross	Background	535400	200100	NO ₂	No	5	69	No	2.3
BB11	35 High Street Waltham Cross	Kerbside	536100	200100	NO ₂	Y - AQMA 1 Arlington Crescent to Abbey Road	6.5	7.8	No	2.3
BB12	15 High Rd Wormley	Kerbside	536610	205823	NO ₂	No	12.5	2	No	2.3
BB16	10 Colthurst Gardens	Background	535860	209590	NO ₂	No	7	1	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	533010	203740	NO ₂	No	11	1.5	No	2.3
BB20	1 The Chase Goffs Oak	Background	531900	203050	NO ₂	No	10	0.3	No	2.3
BB22	Sturlas Way Waltham Cross	Kerbside	536000	200750	NO ₂	No	3	3	No	2.3
BB23	Wickes Car Park	Background	536000	200680	NO ₂	No	13	20	No	2.4
BB25	Jones Road	Kerbside	531500	201000	NO ₂	No	68	41	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)
BB27	59 College Road, Cheshunt	Kerbside	535526	202276	NO ₂	No	3	1.5	No	2.3
BB29	Brookfield Allotments, Halfhide Lane	Kerbside	535881	204198	NO ₂	No	N/A	2	No	2.3
BB30	Winnipeg Way, Turnford	Kerbside	536008	204805	NO ₂	No	24	1	No	2.3
BB31	Wormley Sports Club, Church Lane	Kerbside	536037	205815	NO ₂	No	360	68	No	2.3
BB32	11 Baas Hill Close, Broxbourne	Kerbside	536042	206769	NO ₂	No	14	1	No	2.3
BB33	High Leigh Farm, Box Lane	Kerbside	536070	209021	NO ₂	No	22	4	No	1
BB34	Farm Close, Cheshunt	Kerbside	535315	202091	NO ₂	Y - AQMA 6 Great Cambridge Road	5.8	16	No	2.3
BB35	86 College Road, Cheshunt	Kerbside	535727	202236	NO ₂	Y - AQMA 6 Great Cambridge Road	10	3.5	No	2.3
BB36	Essex Rd at the rear of 6 Parrotts Field,	Roadside	537747	209054	NO ₂	No	15	2	No	2.4
BB37	Junction of Burford St/Dinant Link Rd	Kerbside	537448	209135	NO ₂	No	19.5	0.5	No	2.3
BB39	College Rd/Goffs Churchgate Academy, Cheshunt	Kerbside	535107	202160	NO ₂	Y - AQMA 6 Great Cambridge Road	40.5	1	No	2.4
BB40	A10/College Rd Junction, Cheshunt	Roadside	535314	202244	NO ₂	Y - AQMA 6 Great Cambridge Road	6.5	2	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)
BB41	37 Beltona Gardens, Cheshunt	Roadside	535910	203822	NO ₂	Y - AQMA 6 Great Cambridge Road	4	17	No	2.5
BB42	48 Hobbs Close, Cheshunt	Kerbside	535516	202989	NO ₂	Y - AQMA 6 Great Cambridge Road	3	22	No	2.3
BB43	24 Westside, Turnford	Roadside	536434	205004	NO ₂	No	11	1.5	No	2.5
BB44	High Rd/Bell Lane Roundabout (163 High Rd) Broxbourne	Kerbside	536673	206608	NO ₂	No	2	8	No	2
BB45	High Rd/Station Rd Junction, Broxbourne	Kerbside	536847	207237	NO ₂	No	5	0.5	No	2
BB46	High Rd/Springfields Junction, Broxbourne	Kerbside	536883	207545	NO ₂	No	5.9	1.3	No	2.4
BB47	Turners Hill 2, Cheshunt	Kerbside	535900	202200	NO ₂	No	8	0.9	No	2.3
BB48	Parkside, outside Greenwich Court (Flats 13-24), Waltham Cross	Background	536190	200100	NO ₂	Y - AQMA 1 Arlington Crescent to Abbey Road	7	22.7	No	2.2
BB49	Winston Churchill Way/High Street	Kerbside	535990	200800	NO ₂	No	11	0.7	No	2.3
BB50	St Catherines School, Hoddesdon	Urban Background	537646	208979	NO ₂	No	N/A	21.6	No	2
BB51	28 Eleanor Cross Road Waltham Cross	Kerbside	536265	200375	NO ₂	Y - AQMA 4 Eleanor Cross Road /	4.6	2.5	No	1.8

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)
						Monarchs Way				
BB52	27/28 Arlington Crescent, Waltham Cross	Roadside	536224	200027	NO ₂	Y - AQMA 1 Arlington Crescent to Abbey Road	0	13	No	2.2
BB53	Lamp Post 22: Outside Block 33-36 Teresa Gardens, Waltham Cross, EN8 8EQ	Urban Background	535434	200090	NO ₂	No	7	3	No	2.3
BB54	Post outside Waltham House, Eleanor Road, Waltham Cross, EN8	Kerbside	536250	200391	NO ₂	Y - AQMA 4 Eleanor Cross Road / Monarchs Way	5	3	No	2.3
BB55	Traffic Light No 4, Monarchs Way/Eleanor Cross Road Roundabout, Waltham Cross	Kerbside	536312	200436	NO ₂	Y - AQMA 4 Eleanor Cross Road / Monarchs Way	5	3	No	2.3
BB56	Sign Post 1, York Road/Eleanor Road Junction, Waltham Cross	Roadside	536414	200399	NO ₂	Y - AQMA 4 Eleanor Cross Road / Monarchs Way	7	3	No	2.3
BB57	53 Church Lane, Cheshunt, Lampost 13	Roadside	535325	202913	NO ₂	No	5	3	No	2.3
BB58	Lamp post by Athenia Close - Cuffley Hill	Roadside	531516	202874	NO ₂	No	5	3	No	2.3
BB28, BB59, BB60	214 Great Cambridge Road, Cheshunt (3)	Kerbside	535466	202982	NO ₂	Y - AQMA 6 Great	11.5	3	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)
						Cambridge Road				

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 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 2023 (%) ⁽²⁾	2019	2020	2021	2022	2023
BB04	537000	206400	Background	99.7	99.7	32.7	26.7	27.8	13.3	11.5
BB07	537300	210500	Background	99.7	99.7	18.6	13.8	13.0	14.3	12.2
BB09	535300	202300	Kerbside	99.7	99.7	-	-	36.5	31.7	29.6
BB10	535400	200100	Background	99.7	99.7	18.0	14.8	13.9	21.1	19.4
BB11	536100	200100	Kerbside	92.0	92.0	43.8	34.5	34.2	30.6	25.3
BB12	536610	205823	Kerbside	99.7	99.7	28.5	22.3	21.0	26.2	23.0
BB16	535860	209590	Background	65.1	65.1	39.2	30.3	31.2	16.6	13.3
BB18	535500	203740	Background	99.7	99.7	31.7	24.6	26.9	13.3	11.6
BB19	533010	203740	Background	90.1	90.1	20.3	16.2	15.4	13.5	12.1
BB20	531900	203050	Background	90.4	90.4	34.1	25.5	26.5	13.8	13.0
BB22	536000	200750	Kerbside	99.7	99.7	17.4	13.3	13.0	29.8	24.7
BB23	536000	200680	Background	99.7	99.7	19.1	14.0	13.2	22.2	18.8
BB25	531500	201000	Kerbside	99.7	99.7	18.5	14.0	13.7	16.5	13.7
BB27	535526	202276	Kerbside	90.1	90.1	-	39.4	41.3	26.2	23.0
BB29	535881	204198	Kerbside	74.5	74.5	33.1	27.9	28.4	23.6	23.4
BB30	536008	204805	Kerbside	84.3	84.3	31.9	22.4	22.2	16.7	15.8
BB31	536037	205815	Kerbside	83.5	83.5	37.3	32.6	34.4	15.4	12.9
BB32	536042	206769	Kerbside	99.7	99.7	21.7	18.4	15.0	15.8	13.1
BB33	536070	209021	Kerbside	99.7	99.7	33.6	24.8	26.5	11.7	10.1
BB34	535315	202091	Kerbside	99.7	99.7	27.7	22.7	24.4	23.5	20.0
BB35	535727	202236	Kerbside	92.0	92.0	23.0	17.5	17.5	22.3	20.8
BB36	537747	209054	Roadside	73.4	73.4	21.7	15.4	14.6	18.5	16.6
BB37	537448	209135	Kerbside	99.7	99.7	21.9	15.6	15.7	33.2	28.9
BB39	535107	202160	Kerbside	83.2	83.2	13.8	12.5	11.8	19.5	19.1
BB40	535314	202244	Roadside	99.7	99.7	30.6	25.0	22.7	32.4	29.0
BB41	535910	203822	Roadside	99.7	99.7	31.9	23.5	23.6	24.1	21.1
BB42	535516	202989	Kerbside	75.3	75.3	31.4	26.4	20.6	21.2	18.2
BB43	536434	205004	Roadside	99.7	99.7	42.0	33.5	32.8	24.0	22.3
BB44	536673	206608	Kerbside	90.4	90.4	27.2	20.8	19.8	21.5	18.3
BB45	536847	207237	Kerbside	67.3	67.3	42.5	33.7	35.1	21.2	16.9
BB46	536883	207545	Kerbside	82.4	82.4	31.8	25.3	24.8	24.1	21.2

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 2023 (%) ⁽²⁾	2019	2020	2021	2022	2023
BB47	535900	202200	Kerbside	99.7	99.7	30.4	23.9	22.2	27.3	24.3
BB48	536190	200100	Background	99.7	99.7	32.5	26.0	31.7	26.4	23.0
BB49	535990	200800	Kerbside	99.7	99.7	27.1	21.5	21.5	30.1	28.8
BB50	537646	208979	Urban Background	75.5	75.5	26.4	21.4	22.8	19.3	17.6
BB51	536265	200375	Kerbside	99.7	99.7	29.1	26.5	26.0	41.4	37.9
BB52	536224	200027	Roadside	99.7	99.7	-	18.6	20.2	36.2	33.2
BB53	535434	200090	Urban Background	99.7	99.7				17.2	17.6
BB54	536250	200391	Kerbside	82.4	82.4				43.5	38.0
BB55	536312	200436	Kerbside	92.9	92.9				28.2	32.9
BB56	536414	200399	Roadside	99.7	99.7				31.4	25.4
BB57	535325	202913	Roadside	99.7	99.7				24.0	20.6
BB58	531516	202874	Roadside	99.7	99.7				22.1	19.2
BB28, BB59, BB60	535466	202982	Kerbside	99.7	99.7	<u>61.8</u>	43.2	44.1	42.7	36.6

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 $60\mu\text{g}/\text{m}^3$, 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 in AQMA No.1

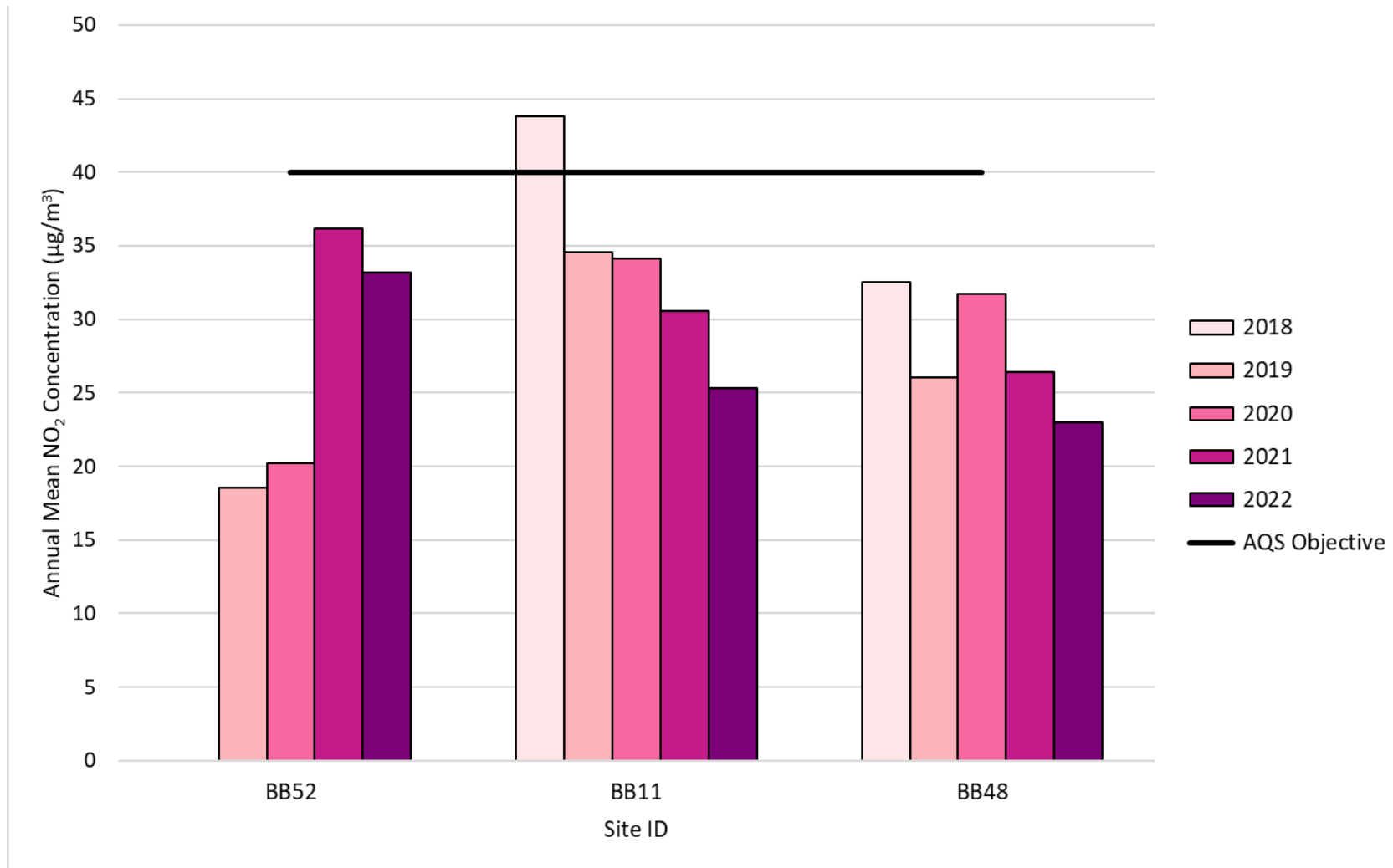


Figure A.2 – Trends in Annual Mean NO₂ Concentrations in AQMA No.4

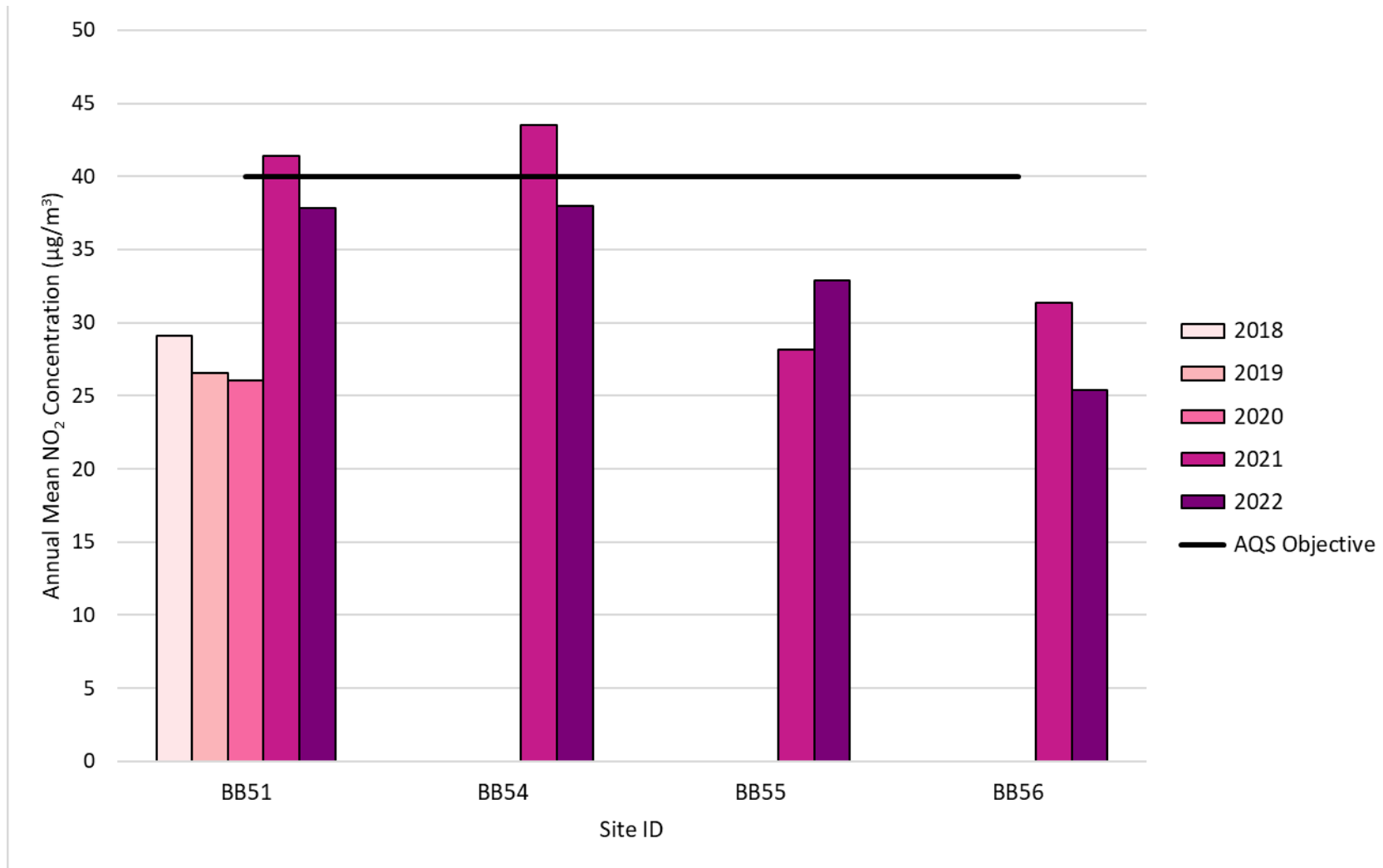


Figure A.3 – Trends in Annual Mean NO₂ Concentrations in AQMA No.6

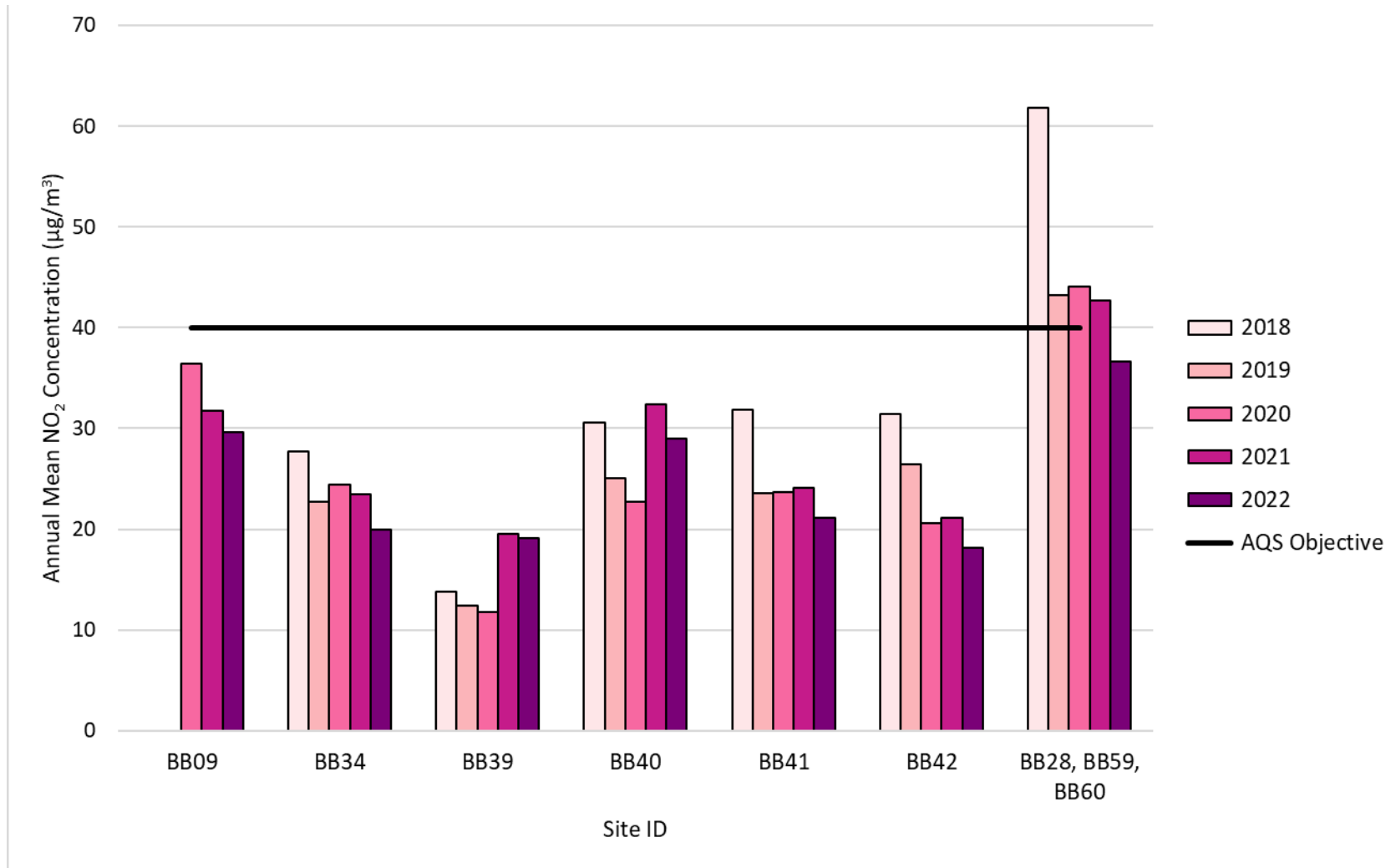
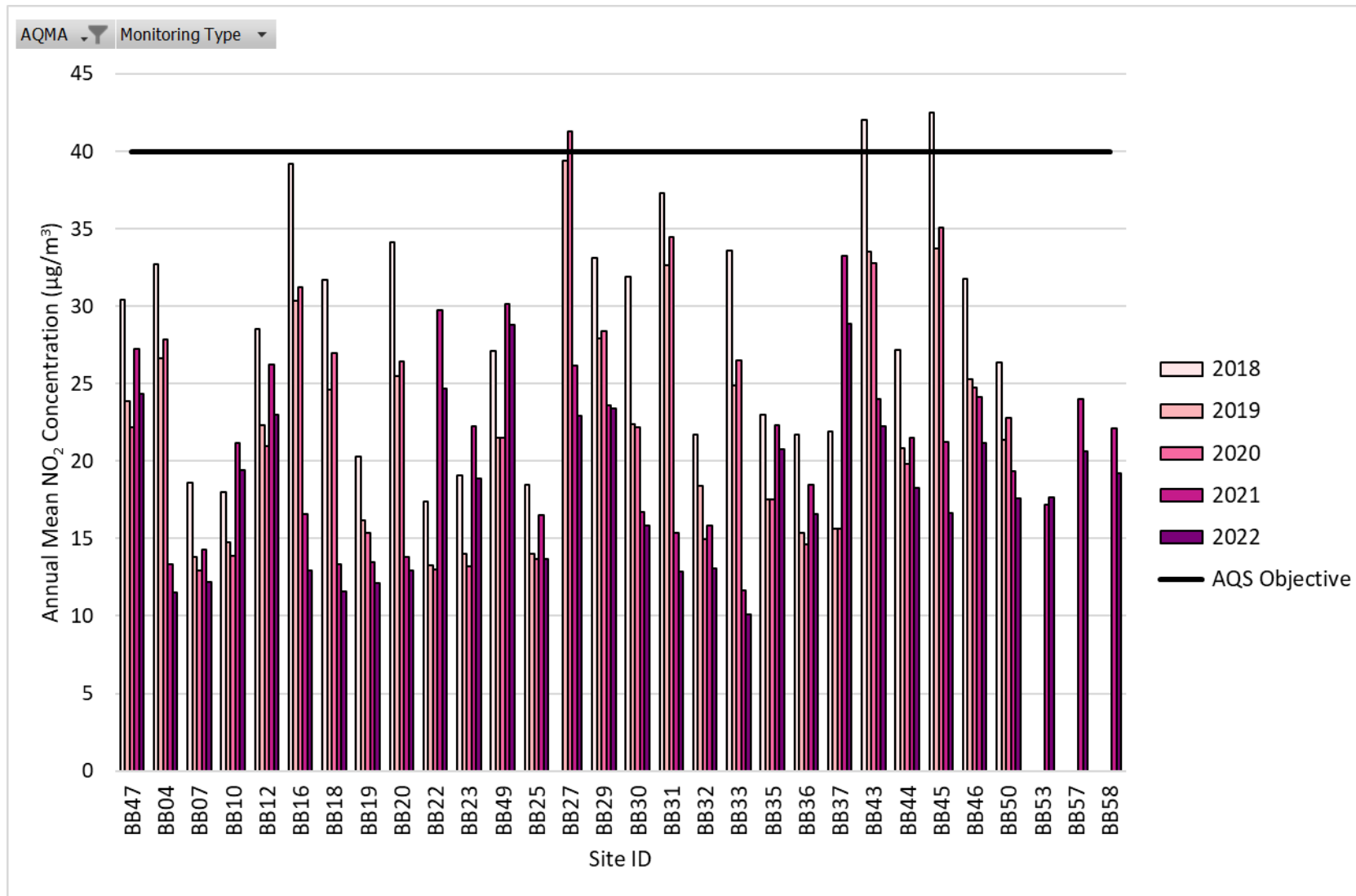


Figure A.4 – Trends in Annual Mean NO₂ Concentrations Outside any AQMA



Appendix B: Full Monthly Diffusion Tube Results for 2023

Table B.1 – NO₂ 2023 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 (0.81)	Annual Mean: Distance Corrected to Nearest Exposure	Comment
BB04	537000	206400	21.1	21.9	16.2	12.0	8.0	8.1	9.0	10.1	12.7	18.2	19.5	13.5	14.2	11.5		
BB07	537300	210500	22.2	23.5	15.4	10.7	8.7	8.2	10.1	11.2	15.8	18.8	19.9	16.0	15.0	12.2		
BB09	535300	202300	35.7	41.2	39.2	43.7	37.5	36.8	28.0	32.2	38.2	40.5	38.1	27.1	36.5	29.6		
BB10	535400	200100	32.3	34.4	25.6	21.1	13.1	15.2	20.8	19.6	23.5	28.1	27.8	26.6	24.0	19.4		
BB11	536100	200100	36.4		32.2	32.9	30.1	29.8	22.2	26.5	34.2	36.9	34.3	28.0	31.2	25.3		
BB12	536610	205823	36.2	35.5	30.1	25.2	23.6	23.7	21.9	22.4	29.7	32.3	33.5	26.0	28.4	23.0		
BB16	535860	209590	22.6	24.3	19.1	14.7	10.2	11.6	12.0					16.5	16.4	13.3		
BB18	535500	203740	17.5	19.9	15.8	14.0	10.1	11.1	8.9	10.3	13.6	17.8	17.9	14.4	14.3	11.6		
BB19	533010	203740	19.6	21.6	16.3	13.6	8.7		9.6	10.4	13.8	18.6	18.4	14.3	15.0	12.1		
BB20	531900	203050	18.8	21.3	15.8	13.1	7.7	8.6	9.7		25.4	19.8	19.9	16.0	16.0	13.0		
BB22	536000	200750	35.6	36.1	30.7	33.7	21.8	19.7	24.4	25.9	34.2	37.4	35.6	30.2	30.4	24.7		
BB23	536000	200680	30.7	32.9	23.0	24.6	17.6	17.3	16.0	18.4	14.5	29.4	31.2	23.6	23.3	18.8		
BB25	531500	201000	20.6	21.1	17.6	14.5	8.8	11.5	17.4	15.3	19.7	17.9	18.9	19.6	16.9	13.7		
BB27	535526	202276	30.9	35.6	29.1	31.1	22.7		19.5	22.4	31.6	32.1	32.0	24.8	28.3	23.0		
BB28	535466	202982	46.4	55.5	44.2	51.1	39.6	44.0	42.7	42.1	47.9	49.1	45.2	35.9	-	-		Triplicate Site with BB28, BB59 and BB60 - Annual data provided for BB60 only
BB29	535881	204198	32.8			29.7	25.3	22.9		24.9	31.1	33.1	31.9	28.3	28.9	23.4		
BB30	536008	204805	21.8	26.3	18.1	15.7	11.8	10.8	12.4	13.3			20.3	44.7	19.5	15.8		
BB31	536037	205815	20.4	22.5	16.9		9.3	10.5		12.7	16.4	17.9	17.2	15.2	15.9	12.9		
BB32	536042	206769	23.1	24.8	17.5	14.2	10.5	9.9	10.5	12.5	14.4	21.4	19.8	14.9	16.1	13.1		
BB33	536070	209021	16.9	19.0	14.3	11.0	8.3	8.0	8.2	9.5	12.8	14.8	15.5	11.1	12.5	10.1		
BB34	535315	202091	32.8	34.6	27.4	23.9	19.1	16.0	16.0	21.3	24.8	28.6	27.4	24.1	24.7	20.0		
BB35	535727	202236	31.6	34.3	25.8	23.9	19.5	20.8	18.7	20.7	26.9	29.4	30.9		25.7	20.8		

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 (0.81)	Annual Mean: Distance Corrected to Nearest Exposure	Comment
BB36	537747	209054	26.7	27.8	21.4	17.4	10.0		14.7		20.1		24.7	21.3	20.4	16.6		
BB37	537448	209135	40.0	43.4	38.2	34.3	28.8	28.2	32.3	34.0	39.7	41.8	40.6	26.0	35.6	28.9		
BB39	535107	202160	27.4	30.2	20.4	23.7			17.0	20.0	25.3	25.1	26.1	20.7	23.6	19.1		
BB40	535314	202244	37.8	40.4	36.9	41.3	33.9	31.2	30.9	32.6	40.5	37.9	37.0	28.7	35.8	29.0		
BB41	535910	203822	34.5	35.7	28.0	22.7	19.2	15.6	23.6	22.4	26.0	28.9	31.7	24.8	26.1	21.1		
BB42	535516	202989	25.7	31.8	23.0	17.5	15.2	16.3	20.4		23.9		28.4		22.5	18.2		
BB43	536434	205004	36.4	36.0	29.6	22.5	18.9	18.2	23.1	22.3	27.8	33.0	34.1	27.9	27.5	22.3		
BB44	536673	206608	27.0	28.8	24.7	19.4	16.9	17.2	16.3		23.3	24.8	27.6	22.5	22.6	18.3		
BB45	536847	207237	25.7	26.3	18.9	19.0		18.0	13.7	16.6		27.9			20.8	16.9		
BB46	536883	207545	32.2			21.4	23.6	23.2	20.6	21.4	29.2	33.9	32.0	24.3	26.2	21.2		
BB47	535900	202200	34.8	36.7	31.4	29.5	24.6	24.6	24.5	26.6	32.7	33.9	33.3	27.7	30.0	24.3		
BB48	536190	200100	33.0	35.2	31.7	28.4	22.0	19.8	24.1	23.5	29.7	34.0	30.0	28.6	28.3	23.0		
BB49	535990	200800	39.2	41.9	36.7	38.4	32.3	30.4	26.8	29.8	39.0	40.6	41.7	29.7	35.5	28.8		
BB50	537646	208979	22.4	29.2	24.1	27.3			12.4	16.2	19.3	22.4	22.3		21.8	17.6		
BB51	536265	200375	50.1	50.4	46.8	44.7	44.4	43.5	43.3	41.5	51.8	53.1	49.1	42.2	46.7	37.9	32.3	
BB52	536224	200027	44.0	48.8	43.9	42.9	28.6	33.8	38.1	36.2	44.4	48.6	41.2	40.8	40.9	33.2		
BB53	535434	200090	28.4	30.7	21.0	17.6	12.1	14.9	19.4	17.9	22.2	25.6	27.2	24.3	21.8	17.6		
BB54	536250	200391	47.9	51.3	45.5	47.1	52.4		39.6	42.7	44.1	50.5	47.4		46.9	38.0	32.5	
BB55	536312	200436	44.2	44.8	41.1	43.5		27.8	36.2	34.9	45.8	46.3	42.0	39.8	40.6	32.9		
BB56	536414	200399	28.3	39.9	33.4	33.0	19.9	22.9	30.2	27.6	35.0	39.1	33.9	32.5	31.3	25.4		
BB57	535325	202913	30.8	35.4	25.0	27.0	20.0	22.6	19.0	18.4	25.8	29.8	27.9	23.8	25.5	20.6		
BB58	531516	202874	30.1	32.8	26.9	23.1	21.0	21.1	17.6	17.9	22.9	24.3	26.5	20.2	23.7	19.2		
BB59	535466	202982	48.8	51.5	43.6	50.9	44.7	42.2	37.9	39.6	47.1	48.4	48.7	34.1	-	-		Triplicate Site with BB28, BB59 and BB60 - Annual data provided for BB60 only
BB60	535466	202982	48.0	53.6	45.4	49.9	40.9	42.1	39.7	42.4	50.3	51.5	45.9	37.4	45.2	36.6	27.5	Triplicate Site with BB28, BB59 and BB60 - Annual

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 (0.81)	Annual Mean: Distance Corrected to Nearest Exposure	Comment
																		data provided for BB60 only

- 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.
- Broxbourne Borough Council confirm that all 2023 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 Broxbourne Borough Council During 2023

Broxbourne Borough Council has not identified any new sources relating to air quality within the reporting year of 2023.

Additional Air Quality Works Undertaken by Broxbourne Borough Council During 2023

In 2023, the Council prepared its Air Quality Action Plan (AQAP) covering all three AQMA.

QA/QC of Diffusion Tube Monitoring

Broxbourne Borough Council's diffusion tubes in 2023 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 NO₂ tube analysis and the Annual Field Inter-Comparison Exercise. These provide strict performance criteria for participating laboratories to meet, thereby ensuring NO₂ 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 2023, AIR PT AR055 to AR059 (covering January to October 2023), Gradko scored 100%. No results have been published for the rest of 2023 at the time of writing. 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 2023 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 2023 had been completed in adherence with the [2023 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 which recoded a data capture below 75%. Urban background AURN sites used to complete this were London Haringey Priory Park South, London Bloomsbury, North Kensington and Borehamwood Meadow Park. These were selected as they were the nearest AURN urban background monitoring locations with greater than 85% data capture in 2023. 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 $\mu\text{g}/\text{m}^3$)

Site ID	Annualisation Factor London Haringey Priory Park South	Annualisation Factor London Bloomsbury	Annualisation Factor London N. Kensington	Annualisation Factor Borehamwood Meadow Park	Average Annualisation Factor	Raw Data Annual Mean	Annualised Annual Mean
BB16	0.9719	0.9830	1.0396	1.0284	1.0057	16.4	16.5
BB45	0.9838	0.9981	1.0068	1.0172	1.0015	20.8	20.8

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/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 0.81 to the 2023 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
2023	National	03/24	0.81
2022	National	03/23	0.84
2021	National	03/22	0.84
2020	National	03/21	0.81
2019	National	03/20	0.93

A single national bias adjustment factor has been used to bias adjust the 2023 diffusion tube results.

Figure C.1 – National Bias Adjustment Selection

National Diffusion Tube Bias Adjustment Factor Spreadsheet							Spreadsheet Version Number: 03/24				
Follow the steps below in the correct order to show the results of relevant co-location studies										This spreadsheet will be updated at the end of June 2024 LAQM Helpdesk Website	
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.											
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:	Step 2:	Step 3:	Step 4:								
Select the Laboratory that Analyses Your Tubes from the Drop-Down List	Select a Preparation Method from the Drop-Down List	Select a Year from the Drop-Down List	Where there is only one study for a chosen combination, you should use the adjustment factor shown with caution. Where there is more than one study, use the overall factor ³ shown in blue at the foot of the final column.								
If a laboratory is not shown, we have no data for this laboratory.	If a preparation method is not shown, we have no data for this method at this laboratory.	If a year is not shown, we have no data ²	If you have your own co-location study then see footnote ⁴ . If uncertain what to do then contact the Local Air Quality Management Helpdesk at LAQMHelpdesk@bureauveritas.com or 0800 0327953								
Analysed By ¹	Method <small>To undo your selection, choose (All) from the pop-up list</small>	Year ² <small>To undo your selection, choose (All)</small>	Site Type	Local Authority	Length of Study (months)	Diffusion Tube Mean Conc. (Dm) (µg/m ³)	Automatic Monitor Mean Conc. (Cm) (µg/m ³)	Bias (B)	Tube Precision ⁵	Bias Adjustment Factor (A) (Cm/Dm)	
Gradko	20% TEA in water	2023	R	Dudley Mbc	12	40	37	7.7%	G	0.93	
Gradko	20% TEA in water	2023	R	Gateshead Council	12	23	20	17.7%	G	0.85	
Gradko	20% TEA in water	2023	R	Gateshead Council	11	23	18	26.9%	G	0.79	
Gradko	20% TEA in water	2023	R	Gateshead Council	12	27	22	20.7%	G	0.83	
Gradko	20% TEA in water	2023	R	Gateshead Council	12	29	23	25.9%	G	0.79	
Gradko	20% TEA in water	2023	R	Gateshead Council	12	30	33	-7.8%	G	1.08	
Gradko	20% TEA in water	2023	KS	Marylebone Road intercomparison	11	45	38	20.3%	G	0.83	
Gradko	20% TEA in water	2023	B	South Holland District Council	10	8	7	12.4%	G	0.89	
Gradko	20% TEA in water	2023	R	Worcestershire	12	12	11	17.4%	G	0.85	
Gradko	20% TEA in Water	2023	R	Ards And North Down Borough Council	12	33	21	60.2%	G	0.62	
Gradko	20% TEA in Water	2023	R	Lisburn & Castlereagh City Council	11	24	20	22.1%	G	0.82	
Gradko	20% TEA in water	2023		Overall Factor³ (23 studies)					Use	0.81	

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. Where appropriate, non-automatic annual mean NO₂ concentrations corrected for distance are presented in Table B.1.

Table C.3 – 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
BB51	2.5	7.1	37.9	16.4	32.3	-
BB54	3.0	8.0	38.0	16.4	32.5	-
BB28, BB59, BB60	3.0	14.5	36.6	14.2	27.5	-

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

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

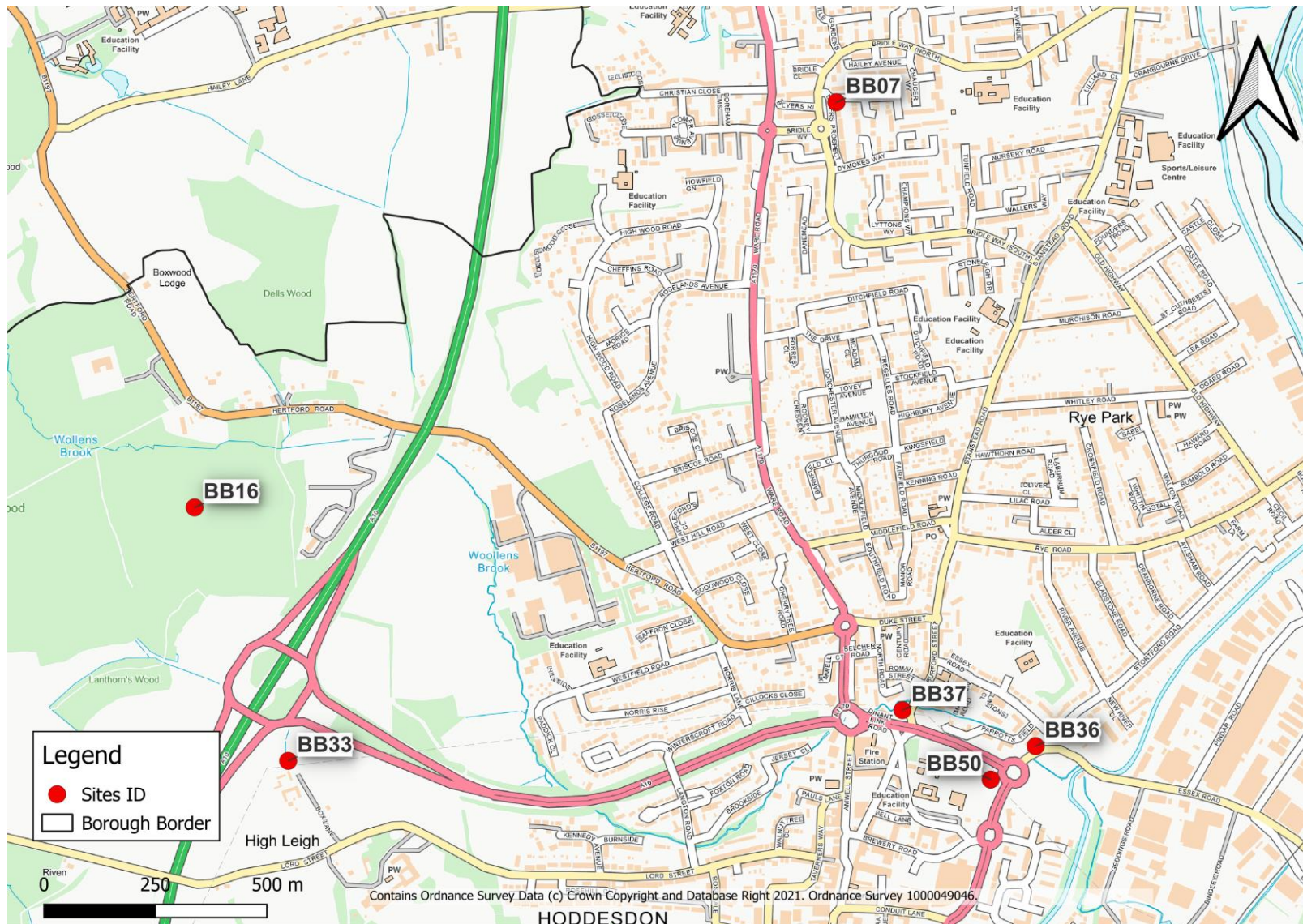


Figure D.2 – Map of Non-Automatic Monitoring Sites – Hoddesdon

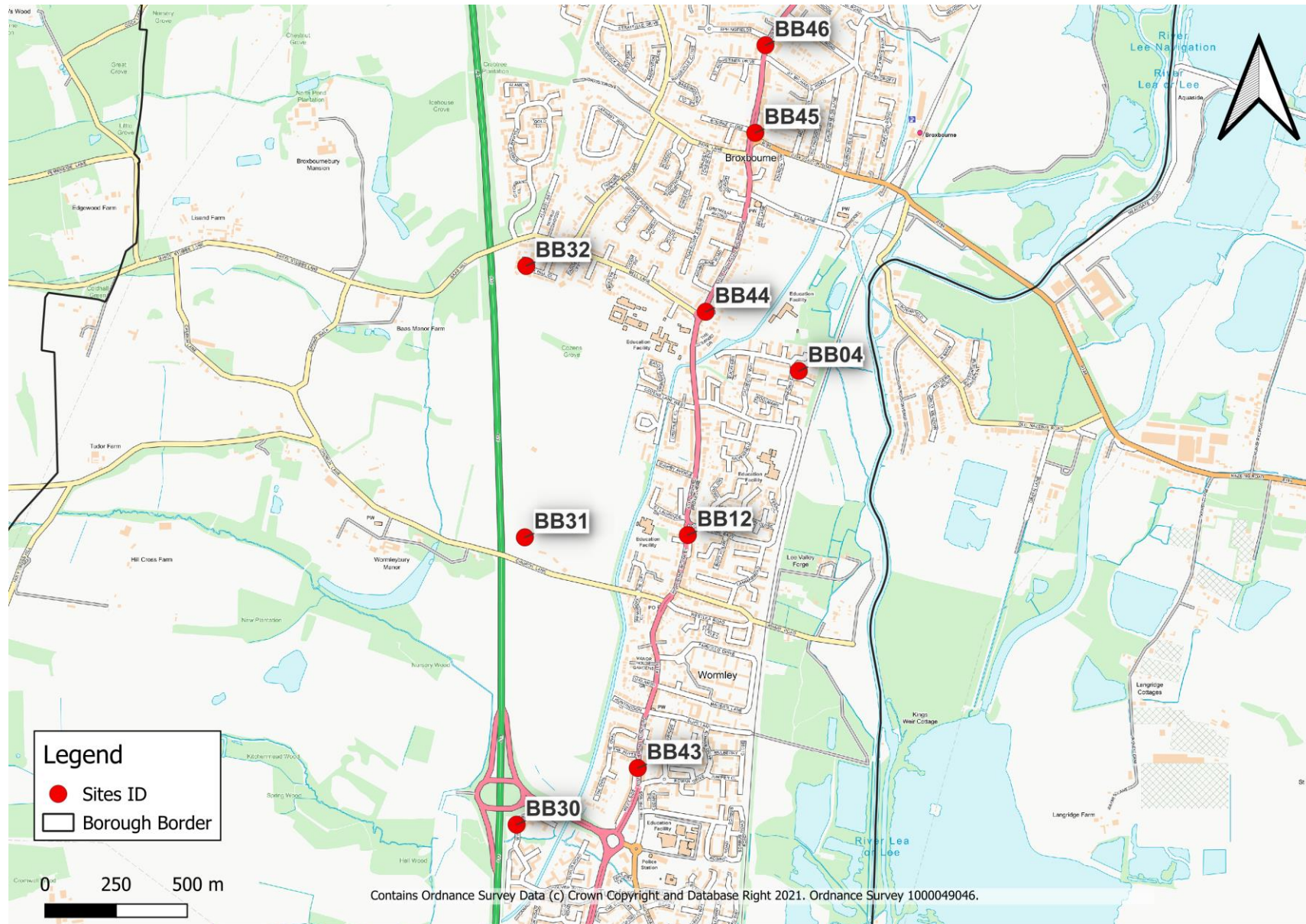


Figure D.3 – Map of Non-Automatic Monitoring Sites – AQMA 6

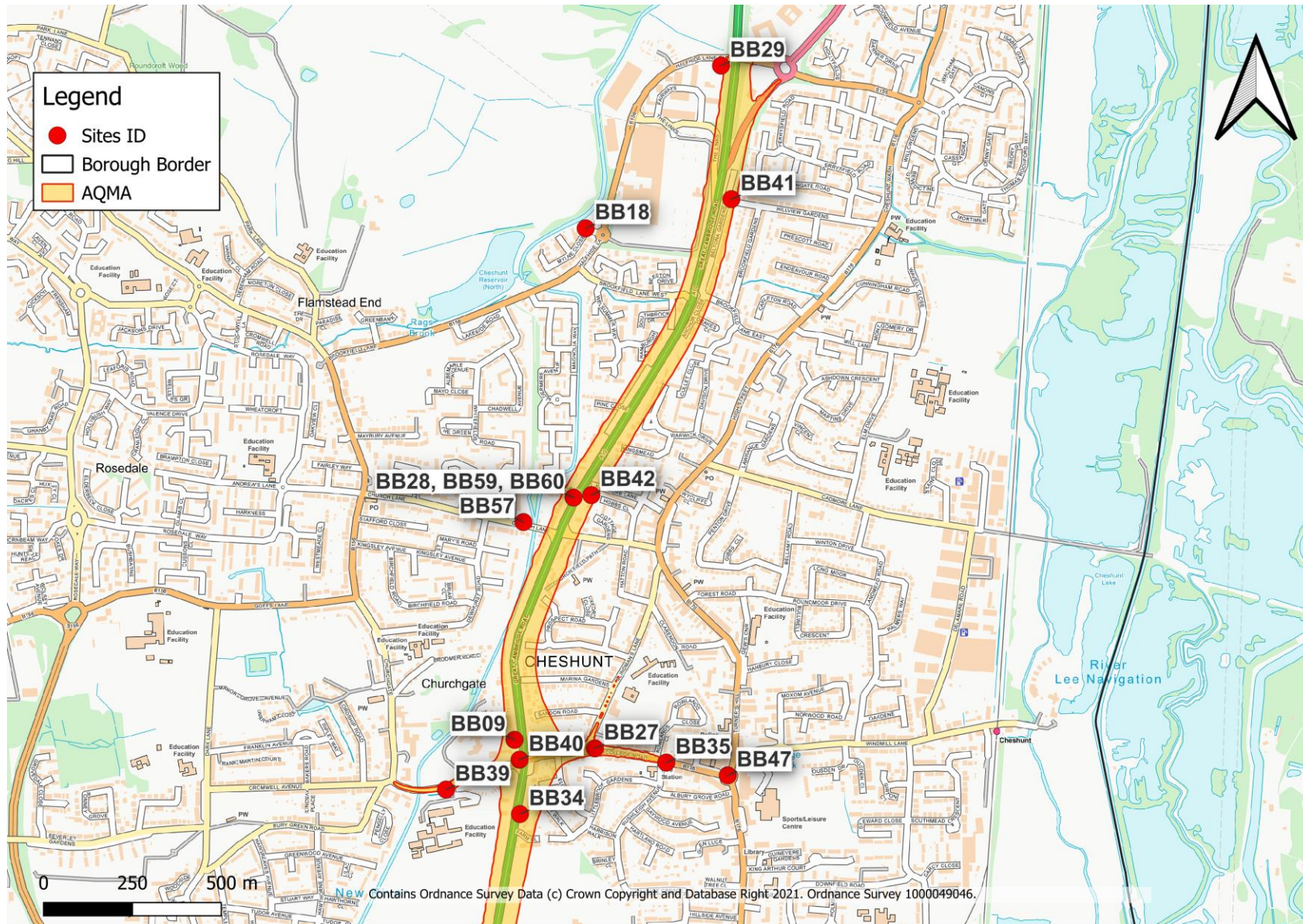


Figure D.4 – Map of Non-Automatic Monitoring Sites – AQMAs 1 and 4

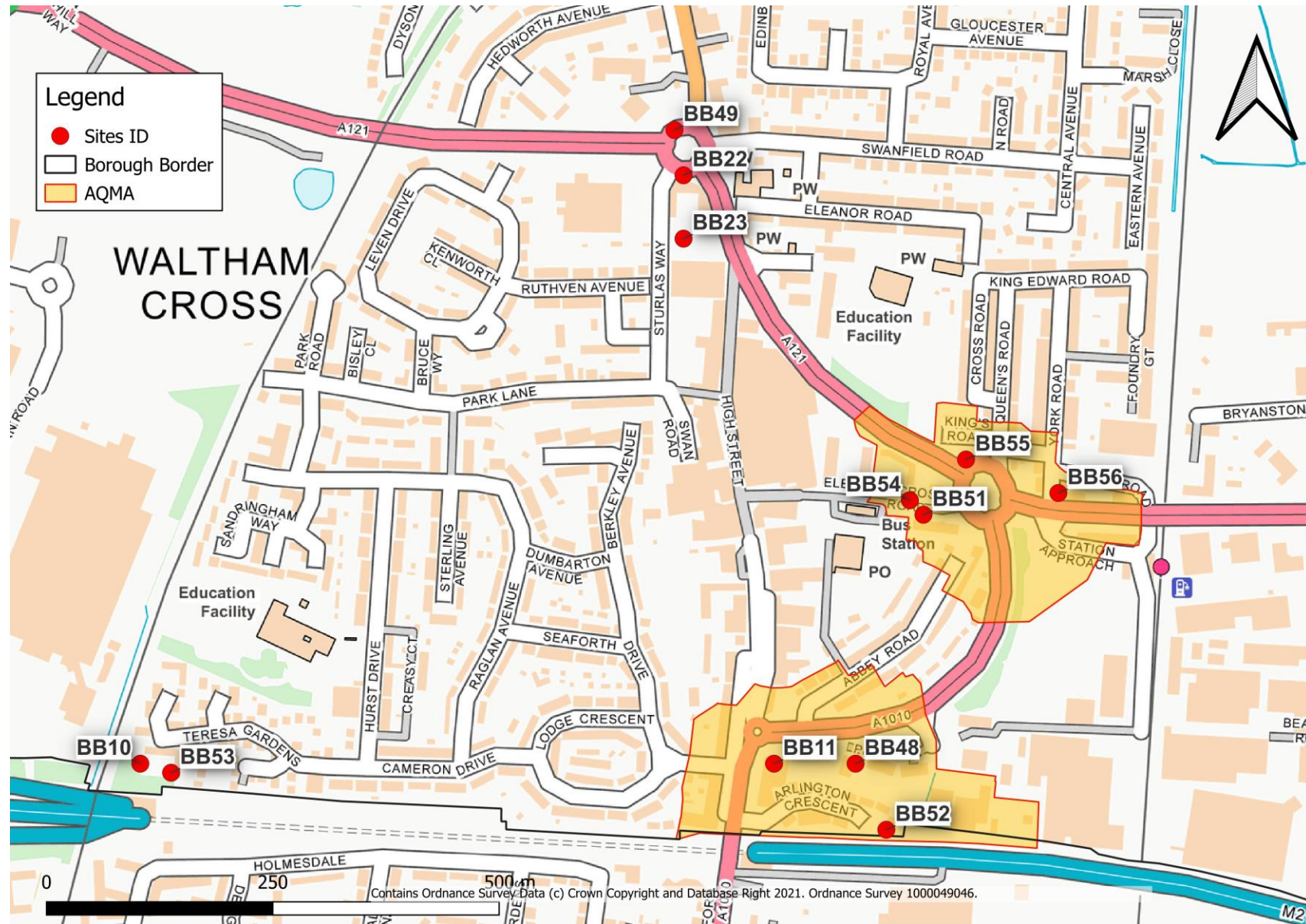
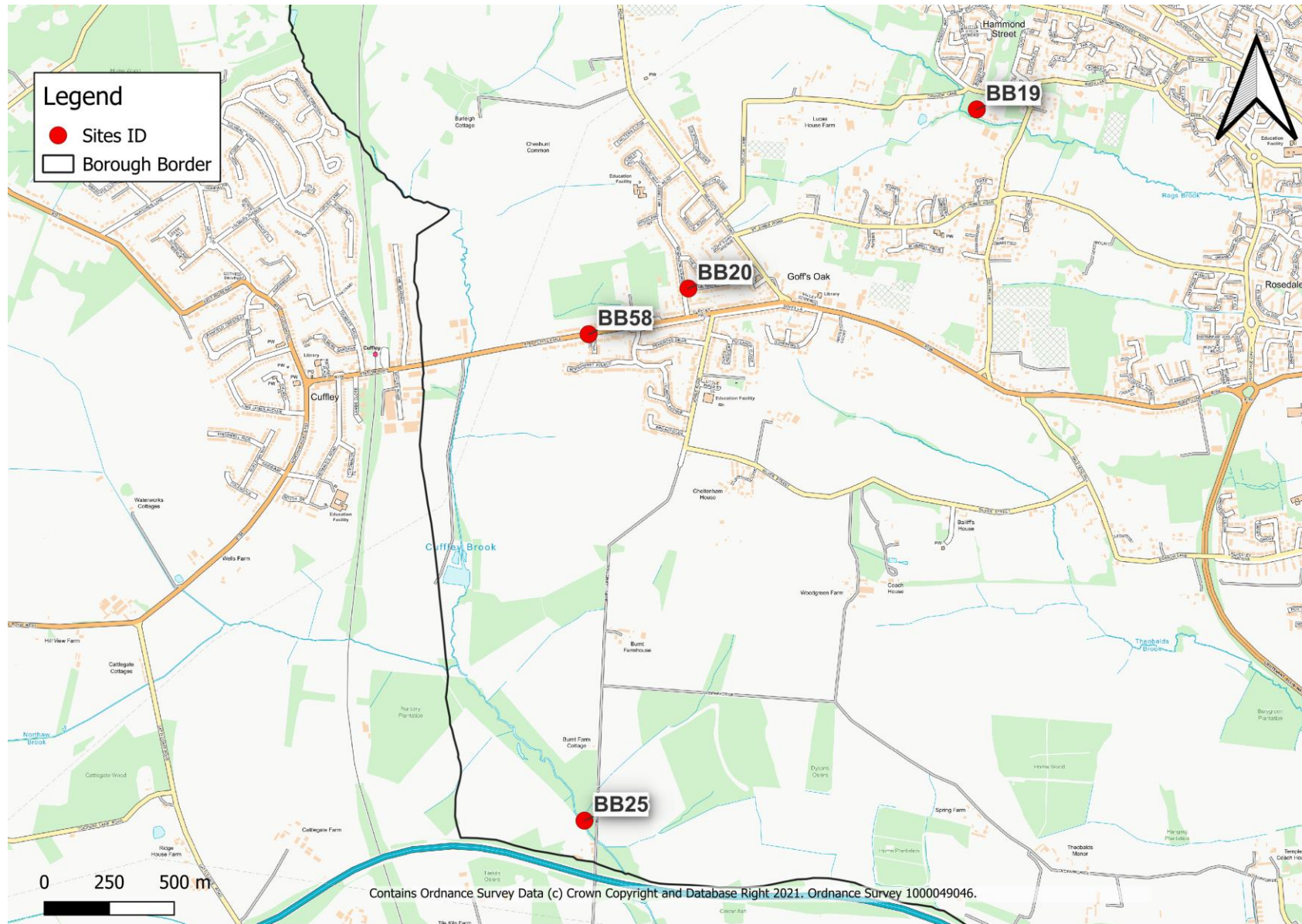


Figure D.5 – Map of Non-Automatic Monitoring Sites – West Cheshunt



Appendix E: Summary of Air Quality Objectives in England

Table E.1 – Air Quality Objectives in England¹⁰

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

¹⁰ 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
EU	European Union
FDMS	Filter Dynamics Measurement System
LAQM	Local Air Quality Management
NO ₂	Nitrogen Dioxide
NO _x	Nitrogen Oxides
PM ₁₀	Airborne particulate matter with an aerodynamic diameter of 10µm or less
PM _{2.5}	Airborne particulate matter with an aerodynamic diameter of 2.5µm or less
QA/QC	Quality Assurance and Quality Control
SO ₂	Sulphur Dioxide

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