



2023 Air Quality Annual Status Report (ASR)

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

Date: March 2024

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Executive Summary: Air Quality in Our Area

Air Quality in Eastleigh Borough

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

The mortality burden of air pollution within the UK is equivalent to 29,000 to 43,000 deaths at typical ages³, with a total estimated healthcare cost to the NHS and social care of £157 million in 2017⁴.

As part of the Council's responsibility to review and assess air quality across the Borough there is a long history of monitoring and delivering initiatives to tackle air quality issues. Air pollution levels are compared to objective levels set by the government, and where pollutant concentrations exceed these levels an Air Quality Management Area (AQMA) must be declared and an Air Quality Action Plan (AQAP) produced⁵. AQAPs detail actions aimed at reducing pollutant levels to below the objective.

In Eastleigh Borough there are four AQMAs⁶, all of which were declared due to the levels of nitrogen dioxide (NO₂) exceeded the annual objective of 40µg/m³. Two of these AQMAs have been subsequently extended since declaration and the current details of all can be found on the [DEFRA website](#). Due to these declarations the main pollutant of concern in the borough is NO₂, although particulate matter (PM) is related and is also monitored by the Council. This is split further by size with both PM₁₀ and PM_{2.5}

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

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

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

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

⁵ [Executive summary \(eastleigh.gov.uk\)](#)

⁶ [Local Authority Details - Defra, UK](#)

measurements taken in 2022. However, due to ongoing technical issues with the monitor, the data capture was low (19.8%) and below the minimum 25% (para 7.140 and Box 7-10 of TG22⁷) required for annualisation (to be compared against long-term annual mean objective). Therefore, we are not reporting this pollutant.

During 2022 a reduction in concentration of nitrogen dioxide was measured at all monitoring locations and no exceedances of objective levels were recorded. Results from 2022 continue a falling trend in pollution which had been identified at the majority of locations, however, in 5-year time the main contributing factor would be the level of traffic and its diurnal spread between pre and post-pandemic years.

The current AQAP is a Borough-wide document that covers all declared AQMAs and was adopted and published in February 2020. It contains actions to improve air quality in the Borough of Eastleigh from 2020 to 2025 and Has been kept updated throughout this period before undergoing a full review when it comes to an end. The main source of pollution in the Borough of Eastleigh is transport, in particular road transport, which is a significant contributor to poor air quality in the area. Eastleigh's position at the heart of major transport routes through Hampshire contributes to this problem as many businesses are attracted to the area, including manufacturing and distribution. To recognise this, actions are mainly based on reducing vehicle emissions and encouraging other methods of travel.

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 Plan⁸ sets out actions that will drive continued improvements to air quality and to meet the new national interim and long-term PM_{2.5} targets. The National Air Quality Strategy, due to be published in 2023, will provide more information on local authorities' responsibilities to work towards these new targets and

⁷ [LAQM-TG22-August-22-v1.0.pdf \(defra.gov.uk\)](#)

⁸ Defra. Environmental Improvement Plan 2023, January 2023

reduce PM_{2.5} in their areas. The Road to Zero⁹ details the approach to reduce exhaust emissions from road transport through a number of mechanisms; this is extremely important given that the majority of Air Quality Management Areas (AQMAs) are designated due to elevated concentrations heavily influenced by transport emissions.

DEFRA AQ Grant Project – Solid Fuel Burning Engagement

Funded by the DEFRA Air Quality Grant Scheme 2019-20, this is a joint project with neighbouring authorities Southampton City Council, Winchester City Council and New Forest District Council. It aims to reduce emissions, in particular of particulate matter, from domestic burning through provision of information and engagement with the public on the relevant issues. The project was launched in 2020 in collaboration with an external contractor who designed and co-ordinated communication campaigns across the partner authorities. The bid extended beyond the original timeframe and project scope, continuing throughout the entirety of 2022.

DEFRA AQ Grant Project 2021-2022 – MyLearney (Sustrans)

Approved in March 2022 combines direct engagement with local schools and wider reaching communications campaigns to improve knowledge and information on air quality issues, aiming to influence behaviour changes that will result in reduced exposure to air pollution. Due to staff issues this campaign was delayed until May 2023 and will be reported in the next round of ASR.

Conclusions and Priorities

The fall in pollution concentrations which had been previously identified at the majority of sites continues in 2022 and no exceedances were identified at any monitoring locations and at 3 locations the exceedance was within 10% on the objective. Once distance is corrected, no exceedances identified at the receptor. The alterations in traffic patterns resulting from the shifting diurnal behaviors, primarily driven by the ongoing adoption of flexible working arrangements by many companies in the area and beyond, are likely to have had an impact on the outcomes. It is crucial to consider these changes when extrapolating the most recent data to long-term trends. Future monitoring will also be

⁹ DfT. The Road to Zero: Next steps towards cleaner road transport and delivering our Industrial Strategy, July 2018

important in determining how much this trend will continue and defining any long-term effects of the pandemic.

The Eastleigh Borough-wide AQAP was adopted in February 2020 and contains actions aimed at improving air quality across the Borough, and tailored actions for individual locations. The AQMAs where recent exceedances were measured are a priority for action, which is reflected in the AQAP. The plan spans from 2020 to 2025 and will undergo regular updates throughout this timeframe. The plan spans from 2020 to 2025 and will undergo regular updates throughout this timeframe.. There have been no major changes to the AQAP over the last year and the specified actions are still valid. Moving forward, the primary focus of the Council will be on ensuring the timely delivery of these priorities according to the planned schedule.

Local Engagement and How to get Involved

Local engagement is an important instrument in effective tackling of air pollution across the Borough. Our residents, businesses and other local groups and organisations all have a role to play. Everyone can help to improve air quality with their actions, including:

Leave your car at home. Use your car less by choosing to walk, cycle or use public transport for some journeys.

Reduce your vehicle emissions. Minimise the emissions from your car by driving efficiently and turning your engine off when stationary. Consider going electric when you upgrade your car, join a car club to use a low-emission vehicle.

Help to reduce congestion. Reduce the number of single occupancy cars on the road by arranging a car share.

Burn less wood. Minimise use of wood burning stoves and bonfires. Follow the DEFRA guide on appropriate appliances and fuel to reduce your emissions.

Reduce your exposure to air pollution. Plan your routes to use side streets and avoid heavily congested areas. Sign up to airAlert to receive pollution forecasts.

Useful Websites

www.eastleigh.gov.uk/airquality - Eastleigh Borough Council's air quality website

www.eastleigh.my-air.uk - Air quality monitoring data from the Borough

www.co-wheels.org.uk - Car club operating in the Borough

www.myjourneyhampshire.com - Information on sustainable transport options and journey planning

www.airalert.info/Hants/Default.aspx - airAlert pollution warning system

www.readytoburn.org/defra-wood-burning-guide/ - DEFRA guidance on wood burning

environmentcentre.com/wood-burning/ - Solid fuel burning campaign page

Local Responsibilities and Commitment

This ASR was prepared by the Pollution Control Specialist within Planning and Environment Directorate of Eastleigh Borough Council with the support and agreement of the following officers and departments:

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1 Local Air Quality Management

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

The LAQM process places an obligation on all local authorities to regularly review and assess air quality in their areas, and to determine whether or not the air quality objectives are likely to be achieved. Where an exceedance is considered likely the local authority must declare an Air Quality Management Area (AQMA) and

prepare an Air Quality Action Plan (AQAP). This plan will set out the measures the Council 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 Eastleigh 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 Eastleigh Borough Council can be found in Table 2.1. The table presents a description of the four AQMAs that are currently designated within the Borough. 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:

- NO₂ annual mean

Table 2.1 – Declared Air Quality Management Areas

AQMA Name	Date of Declaration	Pollutants and Air Quality Objectives	One Line Description	Is air quality in the AQMA influenced by roads controlled by Highways England?	Level of Exceedance: Declaration	Level of Exceedance: Current Year	Number of Years Compliant with Air Quality Objective	Name and Date of AQAP Publication	Web Link to AQAP
Eastleigh AQMA No.1 (A335)	Declared 16/02/2005, Amended 03/02/2015	NO ₂ Annual Mean	Follows the A335 Southampton Rd, Romsey Rd & Leigh Rd. Amended to extend a short way along Woodside Ave, Twyford Rd & Bishopstoke Rd. It includes a number of properties on each road.	YES	>40 µg/m ³	34.2 µg/m ³ (Highest recorded within the AQMA, below the objective by 5.8 µg/m ³)	3 years	Eastleigh Borough Council Air Quality Action Plan 2020 - 2025, February 2020	https://eastleigh.gov.uk/media/7200/ebc1-aqap-2020-2025.pdf
Eastleigh AQMA No.2 (M3)	Declared 03/07/2006	NO ₂ Annual Mean	An area extending either side of the M3 motorway from junctions 12 to 14.	YES	>40 µg/m ³	20.6 µg/m ³ (Highest recorded within the AQMA, below the objective by 19.4)	> 5 years	Eastleigh Borough Council Air Quality Action Plan 2020 - 2025, February 2020	https://eastleigh.gov.uk/media/7200/ebc1-aqap-2020-2025.pdf

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
Hamble Lane Area AQMA No. 3	Declared 03/07/2006 Amended 20/06/2011, Amended 30/08/2019	NO ₂ Annual Mean	Follows the B3397 Hamble Lane from its junction with the A3025 Portsmouth Rd to the Windhover roundabout, encompasses the roundabout and follows the A27 south east to the Borough boundary with a 30m corridor on either side.	YES	>40 µg/m ³	35.5 µg/m ³ (Highest recorded within the AQMA, and below the objective by 4.5)	3 years	Eastleigh Borough Council Air Quality Action Plan 2020 - 2025, February 2020	https://eastleigh.gov.uk/media/7200/ebc1-aqap-2020-2025.pdf
High Street Botley AQMA No. 4	Declared 20/06/2011	NO ₂ Annual Mean	An area encompassing a few properties along High Street from Maypole roundabout to the Winchester Street junction.	YES	>40 µg/m ³	28.4 µg/m ³ (Highest recorded within the AQMA, below the objective by 11.6)	>5 years	Eastleigh Borough Council Air Quality Action Plan 2020 - 2025, February 2020	https://eastleigh.gov.uk/media/7200/ebc1-aqap-2020-2025.pdf

- Eastleigh Borough Council confirm the information on UK-Air regarding their AQMA(s) is up to date.
- Eastleigh Borough Council confirm that all current AQAPs have been submitted to Defra.

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

Defra's appraisal of the last submitted 2021 ASR was very positive, the feedback is summarised below with any related comments from Eastleigh Borough Council.

1. The Council has included a very detailed discussion and review of all its AQMAs and monitoring strategy, informed due to the extensive monitoring network.
2. Comments from last year's ASR have been mentioned, and with the excellent work the council have done in producing the 2020 ASR, seeing the same level of commitment to producing a detailed 2021 ASR is welcomed, and we encourage this to continue in future ASRs.
3. The updated AQAP has been adopted in 2020. We welcome the new measures the Council have adopted and encourage the progress of these measures to be reported in the next reporting year.

Similarly, to previous year, the appraisal noted that Eastleigh Borough Council for reporting year.

4. An in-depth discussion is provided by the Council on PM_{2.5} regarding the concentrations and measures to tackle the pollution. The Public Health Outcomes Frameworks was mentioned. The Council have referred specifically to indicator D01, which is the fraction of mortality attributable to particulate air pollution, and this is encouraged.
5. COVID-19 impacts have been discussed in Appendix F and we welcome the detailed information provided by the council surrounding impacts of the pandemic on air quality in the district.
6. Overall, the report is detailed, concise and satisfies the criteria of relevant standards. The Council should continue their excellent and thorough work.

7. Robust and accurate QA/QC procedures were applied. Calculations for bias adjustment, annualisation and distance-correction factors were outlined in detail.
8. *Quality Assurance/Quality Control (QA/QC) continues to follow the methodologies outlined in TG16 and has been updated to reflect the most recent guidelines and tools available from the LAQM Helpdesk, in particular the new Diffusion Tube Data Processing Tool. Methodologies, supporting evidence and calculations are provided in Appendix C: Supporting Technical Information / Air Quality Monitoring Data QA/QC.*

Eastleigh Borough Council has taken forward a number of direct measures during the current reporting year of 2022 in pursuit of improving local air quality. Details of all measures completed, in progress or planned are set out in Table 2.2. Over 70 measures are included within Table 2.2, with the type of measure and the progress Eastleigh Borough Council have made during the reporting year of 2022 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 the Eastleigh Borough Council Air Quality Action Plan 2020 – 2025. Key completed and the grant extended measure is:

DEFRA AQ Grant Project – Solid Fuel Burning Engagement

Initially funded by the DEFRA Air Quality Grant Scheme 2019-20, this is a joint project with neighbouring authorities Southampton City Council, Winchester City Council and New Forest District Council. It aims to reduce emissions, in particular of particulate matter, from domestic burning through provision of information and engagement with the public on the relevant issues. Progress is summarised below:

- A communications campaign was initially launched on 05 November 2020 (Bonfire Night), involving regular promotion of messages across a range of platforms. This is ongoing and is regularly refreshed and kept up to date with the most relevant information, for example promoting the change in the Domestic Solid Fuel Standards Regulations in May 2021.
- Activities in Eastleigh Borough include messaging on social media, the Council website, newsletters, public engagements (Eastleigh Sustainability Weekend, Bishopstoke Greening event) and through the delivery of 2,984 leaflets in targeted post codes. The project has had coverage in the press which assists with further spreading awareness. The contractor has also carried out direct engagements with

relevant companies and groups, in Eastleigh this has included stove installers, community groups and charities. Regular reports are provided to the Local Authority partners, detailing the activities which have been carried out and feedback and comments which have been received.

- Further to the original project, the Council entered another successful bid with the same partners to the DEFRA Air Quality Grant Scheme 2021-22. This will allow for an extension to both the timescale and scope of the project which will now include an element of particulate matter monitoring.

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

- **Upgrade of Monitoring Equipment.** The next stage of this project is to arrange for the upgraded equipment and site move at Steele Close.
- **Re-establishing Partnership Working.** Following delays in previous years due to redirection of resource, the Council will work to re-establish regular links with partnership organisations.
- **Walking and Cycling Strategy.** This is planned for formulation in 2021 ahead with a public consultation carried out and promoted via social media in 2022 to be adopted in 2023.
- **School Streets Events.** Following previous success, the Council hopes to re-launch these events.
- **DEFRA AQ Grant Project – Solid Fuel Burning Engagement.** Continued delivery of the project along with our partners, including the project extension which was successfully funded in 2021.

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

- To follow up and complete the installation of PM_{2.5} monitor in the Borough as part of the national compliance (EA) monitoring network. The commencement will allow to establish some background concentrations within the Borough.
- Continue working with the various parties, neighbouring and higher tier councils and transport (National Highways and SW Railway & Network Rail) representatives involved in development of Eastleigh Transport Strategy and Action Plan to promote measures beneficial for local air quality.
- Develop closer working ties with Public Health colleagues on work promoting the impact of air quality to health, carry on working on Solid Fuel Burning Engagement and participate in Clean Air Night 2023.

- Research possible locations to relocate continuous monitor equipment at Steele Close.
- Carry on monitoring using passive, indicative and reference methods of monitoring to investigate the current trend in air quality readings which could be impacted by economic downturn reducing the local traffic therefore might increase vs completion of M3 and other roadworks as well as PMs baseline at Hamble Schools (Zephyr).
- Improve resourcing and employ a permanent member of staff responsible for air quality to continue established line of work and develop further projects beneficial for local air quality.
- EV charging points - continue delivery and connections of electric vehicle charging points in accordance with the Council's Climate Change Action Plan.
- Co-Wheels – add parking and charging locations within the Borough and increase the staff uptake of the car club scheme.
- Anti Idling/Single Occupancy Campaigns – start looking for possible partners.

Eastleigh Borough Council worked to implement these measures in partnership with the following stakeholders during 2022:

- Other Eastleigh Borough Departments, Local Area Managers, Hampshire County Council, neighbouring councils and Highways England

The principal challenges and barriers to implementation that Eastleigh Borough Council anticipates facing are:

Funding and resourcing

Insufficient funding is a common barrier to implementation of any measure, therefore it is crucial to continue working with partners and stakeholders to engage earlier therefore potential projects and application for funding could be identified and implemented.

Resourcing: for example for co-wheel (electric) car club planned for 2021 & 2022 was delayed and now new locations will be considered after the contracted is next renewed.

Similarly, measures BHH7 and ENV2 set out in [Table 2.2](#) were put on hold for the same reason.

In addition to the ongoing challenges described above, the continuing effects of the Covid-19 pandemic in the previous reporting year have contributed to slower progress with actions than expected. Issues included postponement or cancellation of planned events, reallocation of resource to pandemic response, external partners not operating as normal and certain activities not being possible during lockdown and with social distancing

requirements. The impacts were far reaching, but where a measure has been particularly affected this has been noted in [Table 2.2](#).

The measures stated above and in [Table 2.2](#) will help to contribute towards compliance, and Eastleigh Borough Council does not anticipate further exceedances in the Eastleigh AQMA No.2 (M3) and High Street Botley AQMA during this AQAP period. These AQMAs remain in place while large scale highway projects in these areas are completed. The situation in Eastleigh AQMA No.1 (A335) and Hamble Lane Area AQMA is less clear, and Eastleigh Borough Council is not able to estimate a compliance date and further additional measures may be required.

Table 2.2 – Progress on Measures to Improve Air Quality

Measure No.	Measure	Category	Classification	Year Measure Introduced in AQAP	Estimated / Actual Completion Date	Organisations Involved	Funding Source	Defra AQ Grant Funding	Funding Status	Estimated Cost of Measure	Measure Status	Reduction in Pollutant / Emission from Measure	Key Performance Indicator	Progress to Date	Comments / Barriers to Implementation
ENV1.1	Monitor pollutant concentrations within AQMAs and across the Borough, including NO2 and PM	Other	Other	2010	2025	EBC	EBC / Developer Contributions / DEFRA AQ Grant 2010-11	YES	Funded	£10k - 50k	Implementation	-	>85% data capture for each calendar year	Monitoring ongoing, both with automatic analysers and diffusion tubes. See Section 3 for details and results.	Data available at www.eastleigh.my-air.uk
ENV1.2	Undertake focussed sampling exercises to monitor pollutant concentrations across the Borough in areas of community concern	Other	Other	2020	2022	EBC	EBC / Developer Contributions	NO	Funded	< £10k	Implementation	-	Establish prioritisation process for study areas Complete 3 studies	6 months of monitoring completed in two separate study areas requested by the community. Results reported to relevant area committees.	-
ENV1.3	Complete an upgrade of monitoring equipment, to include: - replacement of existing analysers - addition of analysers to expand range of pollutants monitored - relocation of monitoring stations - installation of new monitoring locations	Other	Other	2019	2023	EBC	EBC / Developer Contributions	NO	Funded	£100k - £500k	Implementation	-	Increase data capture for each calendar year Increase range of pollutants monitored to include PM2.5 and ozone Add 1 new continuous monitoring location	First phase of implementation complete, consisting of new analysers at Southampton Road and The Point. Upgrade at Southampton Road includes new monitoring of PM2.5. Further phases planned for 2021 - 2023.	Difficulties securing landowners permission for relocation of site at Steele Close will result in a delay to this stage.
ENV1.4	Carry out trial of equipment linking air quality and traffic data	Other	Other	2018	2021	EBC / External Partners	EBC / DEFRA AQ Grant 2018-19	YES	Funded	£50k - £100k	Completed	-	Trial completed and findings reported to DEFRA	The trial has been expanded to include six locations focussed on the Station Hill roundabout in Eastleigh Town and five locations along the newest declared section of AQMA in Bursledon. Data from these has been collected since the beginning of 2021 and is being analysed for inclusion in the final project report in May 2021.	Completed and can be removed

Measure No.	Measure	Category	Classification	Year Measure Introduced in AQAP	Estimated / Actual Completion Date	Organisations Involved	Funding Source	Defra AQ Grant Funding	Funding Status	Estimated Cost of Measure	Measure Status	Reduction in Pollutant / Emission from Measure	Key Performance Indicator	Progress to Date	Comments / Barriers to Implementation
ENV2	Work in partnership with other Councils and key groups	Policy Guidance and Development Control	Regional Groups Co-ordinating programmes to develop Area wide Strategies to reduce emissions and improve air quality	2012	2025	EBC / other Hampshire authorities	EBC	NO	Funded		Implementation	-	Attend 4 meetings per year of the Hampshire Air Quality sub-group	Hants AQ sub-group meetings were on hold during 2020 and restarted in July 2021. Partnership is working on projects such as the solid fuel burning campaign (see measure HS3) continued throughout.	Meetings postponed due to redirection of resource to pandemic response.
ENV3	Promote the use of electric vehicles by investigating incentives and developing a network of publicly available electric vehicle charge points across the Borough in both public and business locations	Promoting Low Emission Transport	Procuring alternative Refuelling infrastructure to promote Low Emission Vehicles, EV recharging, Gas fuel recharging	2012	2025	EBC / HCC / External Partners / Developers	EBC / HCC / OLEV / External Partners / Developer Contributions	NO	Partially Funded	£50k - £100k	Implementation	Reduced vehicle emissions	Increase number of publicly available EV charging points Collect data on total number of kWh used	Arrangements for the installation of electric vehicle charging points at Places Leisure, the Stoneham Development, Woodside Lane and Aldi continue but there is no set installation date yet. The planned Eastleigh Mobility Hubs (see measure ELAC8) may include e-car club vehicles.	-
ENV4	Consider the use of green infrastructure and planting to improve the local environment	Other	Other	2012	2025	EBC / Developers	EBC / Developer Contributions	NO	Not Funded		Planning	Reduced pollutant concentrations	Planting considered in associated with public realm improvements	Consultation on 'Trees and Development Supplementary Planning Guidance' carried out June/July 2021. The Climate and Environmental Emergency Action Plan includes a tree planting programme.	Awaiting confirmation of policy following Local Plan adoption.
TR1	Create a walking and cycling strategy to promote and encourage travel by these methods	Promoting Travel Alternatives	Other	2019	2022	EBC	EBC	NO	Funded		Implementation	-	Completion of strategy	A public consultation was conducted between 2 September and 6 October 2022 and promoted via social media, the Borough News and directly to neighbouring Local Authorities, transport related businesses, community groups and individuals known to the Council.	Delayed from original timescale due to redirection of resource to pandemic response. Public consultation further delayed avoiding clashing with HCC Local Cycling and Walking Infrastructure Plan consultation.

Measure No.	Measure	Category	Classification	Year Measure Introduced in AQAP	Estimated / Actual Completion Date	Organisations Involved	Funding Source	Defra AQ Grant Funding	Funding Status	Estimated Cost of Measure	Measure Status	Reduction in Pollutant / Emission from Measure	Key Performance Indicator	Progress to Date	Comments / Barriers to Implementation
TR2.1	Continue to improve and extend the walking network in line with the new walking and cycling strategy, including running pedestrianisation events	Promoting Travel Alternatives	Promotion of walking	2012	2025	EBC / HCC / Developers	EBC / HCC / Developer Contributions / Reopening High Streets Safely Fund	NO	Partially Funded	£10k - 50k	Implementation	Reduced vehicle emissions	Increase number of pedestrian improvement schemes completed	EBC has been awarded UKSPF funding from DHCLU, an element of which will be used to support community engagement work and to build a consensus around a vision for the future of the town centre - this work will commence in 2024/25.	Scheme no longer supported by Hampshire County Council following the lifting of social distancing measures and was removed on 19 July 2021.
TR2.2	Improve and extend the cycle network in line with the new walking and cycling strategy, including: - maintenance of existing cycle paths - addition of new cycle routes - promotion of electric bicycles	Transport Planning and Infrastructure	Cycle network	2012	2025	EBC / SCC / HCC / Developers / Transforming Cities	EBC / SCC / HCC / Developer Contributions / Transforming Cities Fund	NO	Partially Funded	£1 million - £10 million	Implementation	Reduced vehicle emissions	Increase length of cycle path available Add publicly available charging points for electric bikes	Transforming Cities funding received March 2020 covers a variety of cycle infrastructure, see measures BIFOHH1, CFH2, BHH10 and ELAC7 for more details.	-
TR3	Run campaigns aimed at reducing vehicle emissions, including: - reducing the number of single occupancy cars - reducing idling of stationary vehicles	Public Information	Other	2020	2025	EBC	EBC	NO	Not Funded	£10k - 50k	Planning	Reduced vehicle emissions	Run 2 campaigns to increase a number of people engaged	Planned for implementation in 2022.	Delayed due to lack of resources.
TR4.1	Work in partnership with bus companies to: - improve routes and services - increase patronage - develop a multi operator ticketing system	Transport Planning and Infrastructure	Bus route improvements	2012	2022	EBC / HCC / Bus Service Operators Grant / Bus Companies / Transforming Cities	EBC / HCC	NO	Partially Funded	£1 million - £10 million	Implementation	Reduced vehicle emissions	Maintain number of supported services Increase bus patronage	Transforming Cities funding received March 2020 includes provision of bus infrastructure, see measures BIFOHH1 and ELAC7 for more details.	Agreed with HCC to sell the land by EBC, so the scheme can be delivered. The delivery is now anticipated for 2024-2025 financial year. Can be closed but kept under other policies.
TR4.2	Work with rail operators, network rail and the community rail partnership to: - improve routes and services - improve facilities for multi modal journeys - increase patronage - minimise the impact of emissions from rail transport	Transport Planning and Infrastructure	Public transport improvements- interchanges stations and services	2012	2025	EBC / Rail Operators	EBC / SWR Customer & Communities Improvement Fund 2020-22	NO	Partially Funded	£50k - £100k	Implementation	Reduced vehicle emissions	Increase train patronage	SWR Customer & Communities Funding received March 2020 to improve station access, see BHH4.1 for more details.	-

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TR4.3	Monitor progress of Clean Bus Technology Fund and implications for EBC	Vehicle Fleet Efficiency	Promoting Low Emission Public Transport	2018	2020	SCC	OLEV Clean Bus Technology Funding	NO	Funded	£1 million - £10 million	Completed	Reduced vehicle emissions	Increase proportion of buses classed as EURO VI or better to 100%	Retrofitting has been completed for all service buses, with emissions recorded in the source apportionment study (measure ELAC2) and DEFRA low cost monitoring project (measure ENV1.4). EBC has supported a SCC bid to the ZEBRA fund for 32 further electric buses which would travel through the Eastleigh AQMA to the depot.	This measure is completed and so has been removed in the latest update of the AQAP.
TR4.4	Engage with companies running non-service buses (school buses, learner drivers, rail replacement etc.) to explore upgrade options	Vehicle Fleet Efficiency	Promoting Low Emission Public Transport	2021	2023	EBC / Bus Companies	Not Identified	NO	Not Funded	Not Identified	Planning	Reduced vehicle emissions	Increase proportion of buses classed as EURO VI or better to 100%	-	This measure has been added in the latest update of the AQAP as a follow on from TR4.3. Timescale may be adjusted when finalised plan has been identified.
TR5.1	Promote the Low Emission Taxi Incentive scheme to encourage uptake	Promoting Low Emission Transport	Taxi emission incentives	2017	2023	EBC / SCC / External Partners	DEFRA AQ Grant 2018-19	YES	Funded	£50k - £100k	Implementation	Reduced vehicle emissions	Increase number of grants awarded	Scheme extended in August 2021 to include grants for EURO VI diesel vehicles, if they are for 5-8 passengers or are wheelchair accessible. Advertising including this new information sent directly to every Eastleigh taxi licensee as industry starts to recover after lockdown, resulting in four grants from Aug to Nov 2021.	Expansion of project to EV trials delayed due to lack of resource and availability of external contractors during Covid-19 response. Taxi trade affected by Covid-19 lockdowns, leaving them with little capacity to upgrade vehicles during this time.
TR5.2	Implement a requirement for taxis to meet specified EURO standards in order to be licensed in EBC	Promoting Low Emission Transport	Taxi Licensing conditions	2020	2025	EBC / SCC	EBC	NO	Not Funded		Planning	Reduced vehicle emissions	100% of taxis meet specified EURO standards	Licensing conditions changed so that as of 01/01/2022 new diesel vehicles will not be licenced unless they are of EURO VI standard.	This measure will follow TR5.1 and is planned for implementation in 2025.
TR6	Promote and expand car clubs	Alternatives to private vehicle use	Car Clubs	2020	2025	EBC / External Partners	EBC / Developer Contributions	NO	Not Funded		Planning	Reduced vehicle emissions	Increase number of car club locations to 6	The planned Eastleigh Mobility Hubs (see measure ELAC8) may include e-car club vehicles. Initial market research was carried out in	-

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														Jul/Aug 2021 and HCC are assessing the responses to refine the specifications and form a more detailed plan. See CFH4, HEWEB1 and BHH5.	
TR7	Increase availability of bicycle hire schemes	Promoting Travel Alternatives	Promotion of cycling	2020	2023	EBC / External Partners	EBC / External Partners / Transforming Cities	NO	Not Funded	< £10k	Planning	Reduced vehicle emissions	Increase availability of hire schemes	While providing a public hire scheme is on hold, EBC has procured E-cargo bikes for loan to local businesses, see measure EC2.3. The planned Eastleigh Mobility Hubs (see measure ELAC8) may include bike/scooter hire provision. Initial market research was carried out in Jul/Aug 2021 and HCC are assessing the responses to refine the specifications and form a more detailed plan.	Scheme arranged with Yo Bikes in 2019 aborted when they pulled out of the area in August 2019.
TR8	Consult on incentivising ownership of low emission vehicles through differential parking charges	Traffic Management	Emission based parking or permit charges	2020	2023	EBC	EBC	NO	Not Funded		Planning	Reduced vehicle emissions	Consultation completed	Measure aims to consult on the introduction of such a scheme and following this plan will be made for any implementation.	Plan to be formulated in 2022 but still under development.
TR9	Use low-cost sensor study to understand relationships between traffic movements and air quality to influence future road design	Traffic Management	UTC, Congestion management, traffic reduction	2018	2022	EBC	EBC / DEFRA AQ Grant 2018-19	YES	Funded	£50k - £100k	Completed	Reduced vehicle emissions	Availability of air quality and traffic data in 4 locations to be used as evidence	Data gathered from measure ENV1.4 is being analysed and evaluated for the final project report. This will include conclusions on if/how the study can be used to influence future road design.	The report was produced in May 2021. Several barriers identified.
TR10	Engage with HCC and HE on their highways improvements schemes, such as the SMART motorways project, to ensure they support our work on air quality	Traffic Management	UTC, Congestion management, traffic reduction	2012	2025	HCC / HE	EBC / HCC / HE	NO	Funded		Implementation	Reduced vehicle emissions	2 meetings per year with highways authorities	Target date for next meeting.	Affected by lack of resource due to pandemic response. Still not resumed.

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HS1.1	Improve public awareness of air pollution levels and air quality issues through the EBC website	Public Information	Via the Internet	2012	2020	EBC	EBC	NO	Funded		Completed	-	Increase availability of information on website Increase webpage hits	Website improvements implemented.	This measure is completed and so has been removed in the latest update of the AQAP.
HS1.2	Increase uptake of air quality alert service to help people manage their health in relation to air pollution	Public Information	Other	2015	2023	EBC	EBC	NO	Not Funded		Planning	-	Increase number of alert subscriptions	There are currently 87 active airAlert subscriptions in EBC.	Potential to be included as part of measure HS1.3. May be affected by plans to retender data management contracts and promotion will be carried out after the new contract begins in June 2022.
HS1.3	Run regular public awareness campaigns to provide information and advice, and to promote services available	Public Information	Other	2012	2025	EBC	EBC	NO	Not Funded		Planning	-	Campaigns run annually	Clean Air Day plans discussed as part of Hants AQ sub-group (see measure ENV2).	Affected by lack of resource.
HS1.4	Integrate AQ into our Health & Wellbeing engagement campaigns	Public Information	Via the Internet	2020	2025	EBC	EBC	NO	Not Funded		Planning	-	Increase number of people reached by campaigns	-	Affected by lack of resource.
HS1.5	Work with local health professionals, health awareness groups and social prescribers to disseminate air quality information, particularly about airAlert	Public Information	Other	2020	2025	EBC	EBC	NO	Not Funded		Planning	-	Increase number of people reached Increase number of airAlert subscriptions	-	Affected by lack of resource.
HS2.1	Annually engage with schools in the borough for travel planning and to run clean air campaigns and local monitoring exercises	Promoting Travel Alternatives	School Travel Plans	2015	2025	EBC / SCC	EBC / SCC / Access Fund	NO	Funded	£10k - 50k	Implementation	Reduced vehicle emissions	Increase number of schools participating per year	Schools work includes online resources and competitions for schools, linked to Clean Air Day in June 2021. Promotion of active travel in schools also ongoing, particularly at 'feeder' schools for the new Deer Park Secondary.	Affected by pandemic related school closures.

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HS2.2	Work with HCC to include EBC schools in expansion of Facilitate at least three 'School Streets' events per year, organising temporary road closures outside schools	Traffic Management	Other	2020	2022	EBC / HCC	EBC / HCC	NO	Funded	< £10k	Planning	Reduced vehicle emissions	3 events held per year	HCC were planning a trial of these events for 3 schools in autumn 2021 but none in EBC have been selected. Following this it is hoped the scheme will be expanded across the county and EBC have registered interest in participating.	Events planned by EBC for 2020 postponed due to pandemic related school closures
HS3	Provide information and advice on the use of solid fuel burners through joint project with neighbouring authorities	Public Information	Other	2020	2024	EBC / SCC / NFDC / WCC	DEFRA AQ Grant 2019-20	YES	Funded	£100k - £500k	Implementation	Reduced emissions from burning	Project completed and findings reported to DEFRA	Communications campaign in progress. A bid for extra funding to extend and expand the project was successful with funding awarded in March 2021 and then in 2022.	-
HOU1.1	Update planning guidance to require EV charging in new developments	Policy Guidance and Development Control	Air Quality Planning and Policy Guidance	2020	2023	EBC	EBC	NO	Funded		Planning	Reduced vehicle emissions	Updated planning SPD for air quality produced	Local Plan adopted in 2022 but an early review of the Local Plan commenced autumn 2023-	Dependant on adoption of Local Plan
HOU1.2	Update resident parking policies to incentivise low emission vehicles	Promoting Low Emission Transport	Priority parking for LEV's	2020	2023	EBC	EBC	NO	Funded		Planning	Reduced vehicle emissions	Parking policies updated	-	Planned for 2023.
HOU1.3	Update planning guidance to require low NOx boilers to be installed in new developments	Policy Guidance and Development Control	Air Quality Planning and Policy Guidance	2020	2023	EBC	EBC	NO	Funded		Planning	Reduced emissions from boilers	Updated planning SPD for air quality produced	-	Dependant on adoption of Local Plan
HOU1.4	Update planning guidance to require new developments to employ use of green infrastructure to mitigate air quality impacts	Policy Guidance and Development Control	Air Quality Planning and Policy Guidance	2020	2023	EBC	EBC	NO	Funded		Planning	Reduced pollutant concentrations	Updated planning SPD for air quality produced	-	Dependant on adoption of Local Plan
HOU1.5	Update planning guidance to require new developments are well served with sustainable transport facilities, to include walking, cycling and public transport	Transport Planning and Infrastructure	Other	2020	2023	EBC	EBC	NO	Funded		Planning	Reduced vehicle emissions	Updated planning SPD for air quality produced	-	Dependant on adoption of Local Plan
EC1.1	Update the EBC travel plan annually	Promoting Travel Alternatives	Workplace Travel Planning	2020	2025	EBC	EBC	NO	Funded		Implementation	Reduced vehicle emissions	Annual travel survey completed, and plan updated	Staff survey was carried out in September 2021. The EBC staff travel plan was updated in June 2022. The staff	Survey and update not carried out in 2020 due to Covid-19

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														travel survey is due to be carried out in spring 2023.	
EC1.2	Increase use of EBC pool bikes for staff travel	Promoting Travel Alternatives	Promotion of cycling	2020	2025	EBC	EBC	NO	Funded	< £10k	Completed	Reduced vehicle emissions	Increase number of pool bike users	Fewer members of staff working on site has impacted on use of these facilities and purchase of a further bike has been delayed.	
EC1.3	Update EBCs purchasing and contractor policies to ensure low emission options are used	Policy Guidance and Development Control	Sustainable Procurement Guidance	2020	2022	EBC	EBC	NO	Funded		Implementation	Reduced vehicle emissions	Procurement policy and guidance updated	Included in the Council's Climate and Environmental Emergency Action Plan approved at Cabinet in June 2020.	A new procurement policy has been drafted, awaiting further consultation as the one carried out in 2022 didn't bring many replies.
EC1.4	Upgrade EBC's internal fleet to low emissions vehicles	Promoting Low Emission Transport	Company Vehicle Procurement - Prioritising uptake of low emission vehicles	2020	2025	EBC	EBC / Low Emission Grant	NO	Partially Funded	£500k - £1 million	Implementation	Reduced vehicle emissions	Increase proportion of fleet made up of LEVs	-	
EC2.1	Engage with businesses in the borough to do travel planning	Promoting Travel Alternatives	Workplace Travel Planning	2012	2025	EBC / SCC / Local Businesses	Developer Contributions	NO	Partially Funded	£10k - 50k	Planning	Reduced vehicle emissions	Increase number of businesses engaged after an appointment of new Travel Planner post	Awaiting confirmation of remaining funding.	
EC2.2	Investigate adopting and promoting the ECO Stars Fleet Recognition Scheme to encourage local businesses to upgrade LGV fleets	Vehicle Fleet Efficiency	Fleet efficiency and recognition schemes	2020	2025	EBC	EBC	NO	Not Funded	£50k - £100k	Planning	Reduced vehicle emissions	Increase number of businesses with ECO Stars accreditation	Planned for 2024.	
EC2.3	Work with local businesses to encourage use of last mile electric scheme	Freight and Delivery Management	Other	2020	2025	EBC / External Partners / Local Businesses / E-Cargo Bike Grant Fund	EBC	NO	Partially Funded	£10k - 50k	Implementation	Reduced vehicle emissions	Number of businesses using a 'last mile' scheme	-	
EC3	Support and encourage businesses to adopt flexible working practices	Promoting Travel Alternatives	Encourage / Facilitate home-working	2012	2025	EBC / Local Businesses	EBC	NO	Not Funded		Planning	Reduced vehicle emissions	Increase number of businesses engaged with	On hold while longer term effects of changed working patterns due to Covid-19 are established.	
EC4	Work with Southampton Airport to minimise the impact of their ground operations on air quality	Promoting Low Emission Transport	Other	2020	2025	EBC / Southampton Airport	EBC	NO	Funded		Implementation	Reduced vehicle emissions	Updated surface access strategy in place	Possibility of an appeal on the planning decision.	

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CFH1.1	Move location of continuous monitoring station currently at Steele Close and upgrade equipment	Other	Other	2019	2022	EBC	EBC	NO	Funded	£10k - 50k	Planning	-	Site move completed	Difficulties securing landowners permission for relocation of site at Steele Close will result in a delay.	Monitoring instrument needed to be moved and the permission from Hampshire Fire Service needed. Postponed for the next 2023/24.
CFH1.2	Carry out focussed sampling exercises targeted at areas of local community concern	Other	Other	2020	2023	EBC	EBC	NO	Funded	< £10k	Planning	-	Better coverage of diffusion tube data and improved representation of exposure	Not progressed to date.	Affected by lack of resource.
CFH3	Consider potential locations and funding sources to install electric vehicle charging points	Promoting Low Emission Transport	Procuring alternative Refuelling infrastructure to promote Low Emission Vehicles, EV recharging, Gas fuel recharging	2020	2025	EBC / External Partners / Developers	EBC / External Partners / Developers	NO	Not Funded	£10k - 50k	Planning	Reduced vehicle emissions	Increase number of available EV charging points	This measure is completed and so has been removed in the latest update of the AQAP.	
CFH4	Investigate expanding Co-Wheels electric vehicle locations to Chandler's Ford	Alternatives to private vehicle use	Car Clubs	2020	2023	EBC / External Partners	EBC / External Partners	NO	Not Funded	£10k - 50k	Planning	Reduced vehicle emissions	Add 1 new Co-Wheels location	Planned for 2022.	
ELAC1	Upgrade analysers at Southampton Road and The Point monitoring sites	Other	Other	2019	2020	EBC	EBC	NO	Funded	£10k - 50k	Completed	-	Equipment replaced	New analysers installed at Southampton Road and The Point.	This measure is completed and so has been removed in the latest update of the AQAP.
ELAC2	Conduct further studies of fleet make up and source apportionment for Eastleigh	Other	Other	2015	2022	EBC / External Consultants	EBC / Developer Contributions	NO	Funded	£10k - 50k	Completed	-	Completion of study	Study carried out, main findings reported back to LAC and results will feed into future air quality work.	This measure is completed and so has been removed in the latest update of the AQAP.
ELAC3	Carry out trial of innovative monitoring equipment	Other	Other	2018	2021	EBC / External Partners	EBC / DEFRA AQ Grant 2018-19	YES	Funded	£50k - £100k	Implementation	-	Data collected for 1 key junction in Eastleigh	Project ongoing throughout 2020 – 2021, final report to was produced in 2021.	Can be closed
ELAC4	Consider pedestrianisation of Market Street, initially as a temporary event	Traffic Management	Other	2019	2020	EBC / HCC / Reopening High Streets Safely Fund	EBC	NO	Funded	£10k - 50k	Implementation	Reduced vehicle emissions	Temporary closure event organised and impact assessed	No longer supported by HCC and was removed on 19 July 2021.	The temporary pedestrianisation measure is completed so has been removed in the latest update of the AQAP and replaced by measure ELAC4.1.
ELAC4.1	Explore options for maintaining elements of pedestrianisation in Eastleigh Town Centre	Traffic Management	Other	2021	2023	EBC / HCC	EBC	NO	Not Funded	£10k - 50k	Planning	Reduced vehicle emissions	Ongoing scheme for management of High Street and Market Street adopted	This measure is completed and so has been removed in the latest update of the AQAP.	

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ELAC5.1	Install electric vehicle charge points to include: - Aldi, Chestnut Retail Park - Romsey Road Car Park, Upper Market Street	Promoting Low Emission Transport	Procuring alternative Refuelling infrastructure to promote Low Emission Vehicles, EV recharging, Gas fuel recharging	2015	2022	EBC / HCC / External Partners / Developers	EBC / HCC / External Partners / Developer Contributions	NO	Funded	£50k - £100k	Completed	Reduced vehicle emissions	Increase number of available EV charging points	This measure is completed and so has been removed in the latest update of the AQAP.	Can be removed as completed
ELAC5.2	Encourage uptake of pilot on street charging points and monitor their use	Promoting Low Emission Transport	Procuring alternative Refuelling infrastructure to promote Low Emission Vehicles, EV recharging, Gas fuel recharging	2021	2022	HCC	HCC / OLEV grant	NO	Funded	£100k - £500k	Implementation	Reduced vehicle emissions	Increased use of EV charging points	-	
ELAC6	Continue to seek approval and funding for the Chickenhall Lane Link Road	Transport Planning and Infrastructure	Other	2015	2025	EBC / HCC	EBC / HCC / External Partners / Developer Contributions	NO	Not Funded	> £100 million	Planning	Reduced vehicle emissions	Delivery of link road	The temporary pedestrianisation measure is completed so has been removed in the latest update of the AQAP and replaced by measure ELAC4.1.	
ELAC7	Improve and extend the cycle network to include upgraded cycle routes and facilities in Eastleigh town centre	Transport Planning and Infrastructure	Cycle network	2021	2023	EBC / SCC / HCC / Developers / Transforming Cities	EBC / SCC / HCC / Developer Contributions / Transforming Cities Fund	NO	Funded	£1 million - £10 million	Planning	Reduced vehicle emissions	Increase length of cycle path available Add publicly available charging points for electric bikes	This measure has been added in the latest update of the AQAP as a follow on from ELAC4. Timescale may be adjusted when finalised plan has been identified.	
ELAC8	Create two mobility hubs to offer multi-modal transport options and facilities at key locations in Eastleigh	Promoting Low Emission Transport	Other	2021	2023	EBC / SCC / HCC	EBC / SCC / HCC / Developer Contributions / Transforming Cities Fund	NO	Funded	£1 million - £10 million	Planning	Reduced vehicle emissions	Mobility hubs completed	Jul/Aug 2021 consultation for delivery in 2023. In 2022 HCC have carried out a market engagement event to gauge the level of interest in a cycle hire scheme and other mobility services for Eastleigh, to refine the specification. The procurement will be carried out in 2023.	This measure has been added to cover Transforming Cities projects in Eastleigh.
BIFOH1	Improve traffic flow and increase facilities for active travel along Bishopstoke Road	Transport Planning and Infrastructure	Other	2019	2025	EBC / HCC	EBC / HCC / Transforming Cities / New Homes Bonus	NO	Funded	£1 million - £10 million	Planning	Reduced vehicle emissions	Bus priority scheme in place	Bus priority scheme due to begin consultation process in 2022 - 2023. In 2022 HCC carried out a public consultation on the proposed bus lane, junction signalisation and other active travel improvements. Public support for	Land availability for scheme not yet finalised.

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															the scheme was low but HCC have made the decision to progress to delivery, which is not anticipated to begin until 2024.	
BIFOHH2	Consider potential locations and funding sources to install electric vehicle charging points	Promoting Low Emission Transport	Procuring alternative Refuelling infrastructure to promote Low Emission Vehicles, EV recharging, Gas fuel recharging	2020	2025	EBC / External Partners / Developers	EBC / External Partners / Developers	NO	Not Funded	£10k - 50k	Planning	Reduced vehicle emissions	Increase number of available EV charging points	-	Planned for 2023.	
BIFOHH3	Use the development at Horton Heath (OHH) as an opportunity to promote sustainable practices	Policy Guidance and Development Control	Air Quality Planning and Policy Guidance	2019	2025	EBC	EBC	NO	Funded		Implementation	Reduced vehicle emissions	Maximise sustainable initiatives implemented in development		The outline planning application has a resolution to approve subject to completion of the Planning Agreement. Pollution staff are contributing to application discussions. The development has strong sustainability credentials for construction, operational uses and non-car modes of transport. First phase of development approved (381 units) and construction on site commenced.	
HEWEB1	Investigate expanding Co-Wheels electric vehicle locations to Botley	Alternatives to private vehicle use	Car Clubs	2020	2023	EBC / External Partners	EBC / External Partners	NO	Not Funded	£10k - 50k	Planning	Reduced vehicle emissions	Add 1 new Co-Wheels location		The car club expansion was put on hold during the pandemic but possible new sites will be considered when the car club contract is next renewed.	Planned for 2022/extended.
HEWEB2	Consider potential locations and funding sources to install electric vehicle charging points	Promoting Low Emission Transport	Procuring alternative Refuelling infrastructure to promote Low Emission Vehicles, EV recharging, Gas fuel recharging	2020	2025	EBC / External Partners / Developers	EBC / External Partners / Developers	NO	Not Funded	£10k - 50k	Implementation	Reduced vehicle emissions	Increase number of available EV charging points	-		

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HEWEB3	Delivery of Botley Bypass scheme	Transport Planning and Infrastructure	Other	2012	2023	HCC	HCC	NO	Funded	> £10 million	Implementation	Reduced vehicle emissions	Completion of bypass	Work on delivering this scheme by HCC has commenced.	-
HEWEB4	Following completion of Botley Bypass, reduce HGVs using High Street	Traffic Management	Strategic highway improvements, Re-prioritising road space away from cars, including Access management, Selective vehicle priority, bus priority, high vehicle occupancy lane	2012	2025	EBC / HCC	EBC / HCC	NO	Not Funded		Planning	Reduced vehicle emissions	Reduce number of HGVs using Botley High Street	-	Requires completion of measure HEWEB3.
BHH1.1	Install new continuous analyser to monitor NO2 in the AQMA	Other	Other	2020	2023	EBC	EBC	NO	Funded	£10k - 50k	Planning	-	New site installed	-	Planned for 2023, not yet complete.
BHH1.2	Carry out focussed sampling exercises targeted at areas of local community concern	Other	Other	2020	2021	EBC	EBC	NO	Funded	< £10k	Completed	-	Better coverage of diffusion tube data and improved representation of exposure	6 months of monitoring completed at three sites in lower Hamble and Netley, in September 2021. A survey done on the fleet (buses) to be refurbished with a new engines.	This measure is completed and so has been removed in the latest update of the AQAP.
BHH1.3	Carry out trial of innovative monitoring equipment	Other	Other	2020	2021	EBC / External Partners	EBC / DEFRA AQ Grant 2018-19	YES	Funded	£50k - £100k	Implementation	-	Data collected for Providence Hill - Bridge Road section of AQMA	-	
BHH2	Further study to learn more about the proportion of different vehicles by age and type on Hamble Lane and the A27	Other	Other	2020	2022	EBC / External Consultants	EBC / Developer Contributions	NO	Funded	£10k - 50k	Completed	-	Completion of study	Study carried out, main findings reported back to LAC and results will feed into future air quality work.	This measure is completed and so has been removed in the latest update of the AQAP.
BHH3	Liaise with neighbouring authorities on their activities on the A27	Policy Guidance and Development Control	Regional Groups Co-ordinating programmes to develop Area wide Strategies to reduce emissions and improve air quality	2020	2025	EBC / FBC / SCC	EBC / FBC / SCC	NO	Funded		Planning	-	Information sharing	Project ongoing throughout 2020 – 2021, final report to be produced by the end of 2021w.	Action added to cover the extension of the DEFRA funded low cost monitoring project to this location.
BHH4.1	Work to increase patronage at Hamble, Netley and Bursledon railway stations	Transport Planning and Infrastructure	Public transport improvements-interchanges stations and services	2012	2025	EBC	EBC / SWR Communities Funding Grant	NO	Funded	£50k - £100k	Planning	Reduced vehicle emissions	Increase patronage at stations	Funding received March 2020 for a project at Hamble & Netley stations, to improve access and direct to key locations.	-

Measure No.	Measure	Category	Classification	Year Measure Introduced in AQAP	Estimated / Actual Completion Date	Organisations Involved	Funding Source	Defra AQ Grant Funding	Funding Status	Estimated Cost of Measure	Measure Status	Reduction in Pollutant / Emission from Measure	Key Performance Indicator	Progress to Date	Comments / Barriers to Implementation
														In 2022 the scope agreed and will be delivered in 2023.	
BHH4.2	Provide a car park at Hamble Station	Alternatives to private vehicle use	Rail based Park & Ride	2012	2025	EBC / HCC	Transforming Cities fund	NO	Not Funded	£1 million - £10 million	Aborted	Reduced vehicle emissions	Car park completed	-	Transforming Cities funding bid was unsuccessful for this project, and it has been removed from the latest version of the AQAP.
BHH5	Investigate expanding Co-Wheels electric vehicle locations to the local area	Alternatives to private vehicle use	Car Clubs	2020	2023	EBC / External Partners	EBC / External Partners	NO	Not Funded	£10k - 50k	Planning	Reduced vehicle emissions	Add 1 new Co-Wheels location	The car club expansion was put on hold during the pandemic, but possible new sites will be considered when the car club contract is next renewed.	Planned for 2021, however delayed by lack of resource/under review.
BHH6	Engage with HCC on the Hamble Lane improvement scheme to ensure it supports our objectives	Traffic Management	UTC, Congestion management, traffic reduction	2012	2025	HCC	EBC / HCC	NO	Not Funded		Implementation	Reduced vehicle emissions	Completion of scheme	-	Affected by lack of resource due to pandemic response. Scheme is on hold while funding is identified.
BHH7	Engage with HE on the M3 Junction 8 / Windhover Roundabout improvements to ensure our objectives are supported	Traffic Management	UTC, Congestion management, traffic reduction	2012	2025	HE	EBC / HE	NO	Funded		Implementation	Reduced vehicle emissions	Completion of scheme	2023 update: the HE compulsory purchase was dismissed by the inspector and the scheme is currently on hold while NH consider alternative flood mitigation options.	Affected by lack of resource due to pandemic response.
BHH8	Consider potential locations and funding sources to install electric vehicle charging points	Promoting Low Emission Transport	Procuring alternative Refuelling infrastructure to promote Low Emission Vehicles, EV recharging, Gas fuel recharging	2020	2025	EBC / External Partners / Developers	EBC / External Partners / Developers	NO	Not Funded	£10k - 50k	In progress / implementing	Reduced vehicle emissions	Increase number of available EV charging points		
BHH9	Improve air circulation along Hamble Lane and the A27 through the management of trees	Other	Other	2020	2025	EBC / HCC	EBC / HCC	NO	Not Funded		Planning	Reduced pollutant concentrations	Completion of scheme	-	Planned for 2024.
BHH10	Improve and extend the cycle network to include provision of a cycle route on Bursledon Road	Transport Planning & Infrastructure	Cycle network	2021	-	EBC / SCC / HCC	EBC / SCC / HCC / Transforming Cities Fund	NO	Funded	£1 million - £10 million	Planning	Reduced vehicle emissions	Completion of scheme	Consultation carried out in Jul/Aug 2021. In 2022 work has begun in November. Due to complete in March 2023.	This measure has been added to cover Transforming Cities projects in BHH.

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

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

The Public Health Outcomes Framework¹⁰ contains the indicator ‘D01 – Fraction of mortality attributable to particulate air pollution’. For Eastleigh in 2021 this indicator was slightly higher than in Hampshire and England, and slightly below the indicator estimated within nearby cities of Portsmouth and Southampton (see below).

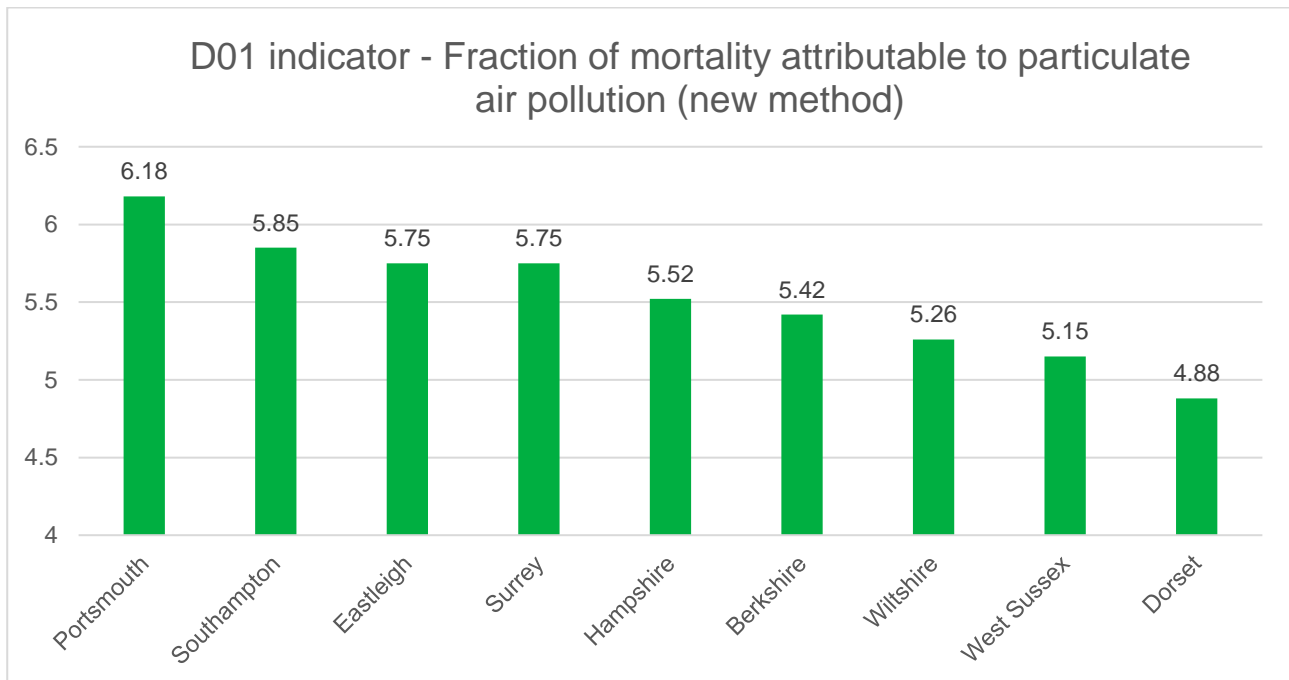


Figure 2-1 D01 indicator - Fraction of mortality attributable to particulate air pollution (new method)

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

¹⁰ [Public Health Outcomes Framework - OHID \(phe.org.uk\)](https://www.phe.org.uk/public-health-outcomes-framework)

- After expansion and upgrade of monitoring equipment at Southampton Road in February 2020, measurements of PM_{2.5} were included in addition to PM₁₀. This was detailed in measures ENV1.3 and ELAC1 (now completed) in Table 2.2. Due to instrument issues the data capture in 2022 for PM_{2.5} was low (19.8%), which is below required for annualisation minimum of 25%, therefore excluded from reporting.
- Measure HS3, see Table 2.2, is targeted specifically at solid fuel burning as the biggest source of PM_{2.5} and aims directly to reduce emissions of this pollutant. See the Section 'Progress and Impact of Measures to address Air Quality in Eastleigh Borough Council' for more information on this project.
- The majority of measures in the Action Plan are targeted at vehicle emissions which is the main source of NO₂, the pollutant which is the basis for all the Borough's AQMA declarations. However, these measures will also contribute to the reduction of PM_{2.5} which is also emitted by road transport. Those listed in Table 2-3 are expected to reduce PM_{2.5} emissions, as specified by the Technical Guidance LAQM TG22 action toolbox.

Table 2-3 - Measures which are expected to contribute towards reduction of PM_{2.5} emissions

Group	Measure No.	Measure Summary
Environment	ENV3	Promote the use of electric vehicles
Transport	TR2.1	Improve and extend the walking network
	TR2.2	Improve and extend the cycle network
	TR4.1	Improve bus services
	TR4.2	Improve rail services
	TR4.3	<i>Low emission buses (completed)</i>
	TR5.1	Low emission taxis
	TR5.2	Taxi licensing conditions
	TR6	Promote and expand car club
	TR7	Bicycle hire schemes
	TR9	<i>Use of low cost sensors for traffic improvements for future road designs (completed in 2021)</i>
TR10	Highways improvement schemes	
Health & Social Policy	HS2.1	School travel planning
Housing	HOU1.2	Resident parking policies
Economy & Regeneration	EC1.1	EBC travel planning
	EC1.2	EBC pool bikes
	EC1.4	Upgrade EBC fleet to low emission vehicles
	EC2.1	Workplace travel planning
	EC2.2	ECO Stars fleet recognition scheme

Group	Measure No.	Measure Summary
	EC3	Support and encourage flexible working
Local Area: Chandler's Ford & Hiltingbury	CFH2	<i>Hut Hill cycle route (completed)</i>
	CFH3	Electric vehicle charging points
	CFH4	Expand car club locations
Local Area: Eastleigh	ELAC5	Electric vehicle charging points
Local Area: Bishopstoke, Fair Oak & Horton Heath	BIFOHH2	Electric vehicle charging points
Local Area: Hedge End, West End & Botley	HEWEB1	Expand car club locations
	HEWEB2	Electric vehicle charging points
Local Area: Bursledon, Hamble-le-Rice & Hound	BHH4.1	Railway station improvements
	BHH5	Expand car club locations
	BHH6	Hamble Lane highways improvements
	BHH7	Junction 8 / Windhover highways improvements
	BHH8	Electric vehicle charging points

In addition, any work based around reducing exposure to air pollution will have a positive influence on public health, including reducing effects associated with PM_{2.5}. Example measures from Table 2.2 include HS1.1 to HS1.5.

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

This section sets out the monitoring undertaken within 2022 by Eastleigh Borough Council and how it compares with the relevant air quality objectives. In addition, monitoring results are presented for a five-year period between 2018 and 2022 to allow monitoring trends to be identified and discussed.

3.1 Summary of Monitoring Undertaken

3.1.1 Automatic Monitoring Sites

Eastleigh Borough Council undertook automatic (continuous) monitoring at 3 sites during 2022. Table A.1 in Appendix A shows the details of the automatic monitoring sites. The [Eastleigh \(my-air.uk\)](https://www.eastleigh.gov.uk/my-air) page presents automatic monitoring results for Eastleigh Borough Council, with automatic monitoring results also available through the UK-Air website .

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

3.1.2 Non-Automatic Monitoring Sites

Eastleigh Borough Council undertook non-automatic (i.e. passive) monitoring of NO₂ at 54 sites (with 60 diffusion tubes, including 3 sets of triplicates) during 2022. Table A.2 in Appendix A presents the details of the non-automatic sites.

Maps showing the location of the monitoring sites are provided in Appendix D: Map(s) of Monitoring Locations and AQMAs. Further details on Quality Assurance/Quality Control (QA/QC) for the diffusion tubes, including bias adjustments and any other adjustments applied (e.g. annualisation and/or distance correction), are included in Appendix C.

3.2 Individual Pollutants

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

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

3.2.1 Nitrogen Dioxide (NO₂)

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

considering the revocation of this AQMA.

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

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

The annual mean objective was not exceeded at any monitoring locations in the Borough during 2022, although 3 diffusion tube locations did record results within 10% of this objective prior to distance correction. Given the known uncertainties with diffusion tubes monitoring these sites, all three diffusion tubes within the Eastleigh AQMA (1) and Hamble Lane Area AQMA (3), are considered to be at risk of exceedance at the monitoring location although this does not extend to the nearest exposure in either case.

Concentrations and trends at key monitoring locations within each AQMA are discussed in turn below with supporting data and figures in Appendix A: Monitoring Results. To assess long term trends, focus has been on sites with more than 5 years of data available and it is recognised that some annual fluctuations will be caused by factors such as meteorological conditions. When considering the 2022 results in this context they have been compared to the average concentration measured at the site over the previous four years (2018 – 2021). Some analysis has also been done looking at the rate of change in measured levels to estimate the significance of trends. Overall, there was a sharp drop in concentrations between pre- and post-pandemic years with a noticeable plateau for 2020-2022 results. Bias-adjusted levels using the latest national bias adjustment factor (9/23) of

0.85 demonstrate a reduction in nitrogen dioxide levels in 2022 compared to 2019. This trend generally indicates improvement and may be attributed to enhancements in traffic composition and a decrease in road users. Additionally, short-term impacts could arise from meteorological factors.

Eastleigh AQMA No.1 (A335) – see Figure A.1

In this AQMA, all monitored sites demonstrated a decrease in measured concentrations for 2022 compared to pre-pandemic levels in 2019 in line with the trend in data collected by continuous analysers within the Borough and AURN sites. Over a five-year period, there was a significant drop and, in some instances, such as at Leigh Road/Pluto Road and Southampton Road Analyser, concentrations decreased by over 12% and 15% respectively. However, the three-year trend across this AQMA is less apparent, as monitored concentrations showed insignificant variations, both decreasing and increasing in their annual averages **Table 3-1**.

Table 3-1 – 3&5-year trend and comparison within AQMA 1

Site Name	Monitoring	Site Type	2018	2019	2020	2021	2022	3-year (2020-22) average	Difference between 2019 and 3-year average	A comparison between 2022 and 3&5-year average	
			µg/m ³					%			
BR2-Bishopstoke Road 2	DT	Roadside	31.7	31.3	26.8	26.6	27.2	26.9	-3.0	1.2	-5.6
CA-Chestnut Avenue			25.8	23.9	21.5	21.3	20.9	21.2	-4.1	-1.7	-8.7
LR13-Leigh Road/J13			41.4	39.0	30.7	32.5	32.9	32.0	-2.4	2.6	-7.4
LRPR-leigh road/Pluto Road			32.9	31.6	23.9	24.8	24.6	24.5	-2.9	0.6	-12.1
MS-Mill Street			32.1	26.4	22.9	24.2	25.0	24.0	-3.7	3.9	-4.4
SR1-Southampton Road 1			45.7	43.6	33.1	28.9	36.3	32.8	-2.0	9.7	-3.3
SR2-Southampton Road 2			42.7	37.6	31.7	36.1	34.2	34.0	-2.6	0.6	-6.6
SRAN(17)(A), SRAN(17)(B), SRAN(17)(C)-Southampton Road Analyser (A)(B)(C)			38.9	36.6	29.4	33.1	28.9	30.4	-2.6	-5.5	-15.6

Site Name	Monitoring	Site Type	2018	2019	2020	2021	2022	3-year (2020-22) average	Difference between 2019 and 3-year average	A comparison between 2022 and 3&5-year average	
			µg/m ³						%		
TP(A), TP(B), TP(C)-The Point (A)(B)(C)			25.5	22.9	18.6	20.3	19.7	19.6	-4.2	0.8	-8.6
TWY-Twyford Road			27.5	24.7	22.5	22.4	22.2	22.4	-4.0	-0.6	-7.3
WA-Woodside Avenue			35.0	31.5	26.0	26.6	26.6	26.4	-3.0	0.7	-9.6
ES1, Southampton Road, continuous	Ref.		37.8	34.1	26.3	-	28.2	27.3	-2.7	3.4	-12.0
ES3, The Point, continuous			31.0	25.6	20.0	22.6	19.2	20.6	-3.7	-7.1	-23.1
Portsmouth Anglesea Road, AURN	AURN	Urban Traffic	30.6	27.6	21.1	23.4	23.2	22.5	-3.4	2.8	-8.5
Southampton A33, AURN			35.0	32.5	26.7	26.5	27.8	27.0	-2.9	3.0	-6.7

For instance, all sites in AQMA 1 indicated reduction in levels of nitrogen dioxide when compared with pre-pandemic, 2019 concentrations between (-)2.0% and (-)4.2%. Although it is clear reduction over 5-year period with (-)23% at The Point. A comparison of 2022 levels with 3-year averages suggests some mix response in levels, as some sites demonstrated a small comparative increase and especially this is noticeable for SR1-Southampton Road 1 (by 9.7%) and Mill Street (3.9%), as well as decrease at ES3, The Point, continuous monitor (by -7.1%) making it challenging to establish a clear positive or negative pattern of post-pandemic years. This uncertainty suggests that the rate of improvement remains ambiguous and localised. While 2020 is expected to accelerate a positive drop in pollutant concentrations, the uncertainty regarding its long-term continuation is not evident, especially considering the potential impact of the fuel price interruption in 2022, which might have led to a reduction in use of private cars. It's important to note that an AQMA cannot be considered for revocation until a sustained period of compliance is confidently measured. At the same time, several instances of exceeding the annual objective have been documented in recent years, and the proximity of Southampton airport with its undergoing developments raises additional concerns about the deceleration of improvements. As a result, this area continues to be a significant AQMA.

Eastleigh AQMA No.2 (M3) – see Figure A.2

All sites in this AQMA also showed a drop in measured concentrations when compared to pre-pandemic and especially 5-year average years. The reduction in road speeds due to recent and ongoing road works would also likely have contributed to the reductions in measured NO₂. The results show obvious stagnation in levels, presumably reaching an equilibrium for this area, which could potentially only be going down with upgraded fleet. Overall, the AQMA is compliant for over 5 years, however, remains in place due to the M3 Smart Motorway work, so the effects of this large scale and long-term project can be assessed.

Table 3-2 – 3&5-year trend and comparison within AQMA 2

Site Name	Monitoring	Site Type	2018	2019	2020	2021	2022	3-year (2020-22) average	Difference between 2019 and 3-year average	A comparison between 2022 and 3&5-year average	
			µg/m ³					%			
BEL-Belmont Road	DT	Urban Background	26.0	24.4	20.8	20.1	18.6	19.8	-3.9	-6.5	-18.0
DD (A)&(B)-Dove Dale			30.5	26.0	22.0	22.7	20.6	21.7	-3.7	-5.7	-18.4
MC-Medina Close			26.4	24.4	19.4	20.1	18.8	19.4	-3.9	-3.5	-16.2
PC(A)-Porteous Crescent (A)			27.7	24.0	17.8	19.5	18.1	18.5	-3.9	-2.0	-18.3
SSQ-Sparrow Square			28.2	24.3	20.1	20.5	19.7	20.1	-3.9	-2.0	-14.5

Hamble Lane Area AQMA No 3. – see Figure A.3

A few monitoring sites in this AQMA, presented in the **Table 3-3**, have been in place longer than 4 years to confirm a trend. However, a decline in concentration levels was observed across all monitoring sites compared to the pre-pandemic period. The data presented in **Appendix A: Monitoring Results**, exhibits a reduction and a discernible downward trend in nitrogen dioxide concentration within this particular AQMA based on 5-year average levels and pre-pandemic concentrations in 2018 and 2019, however when compared 2022 results with 3-year average, the trend is not as distinct with some stagnation in levels of the pollutant. At the same time, concentrations appear to be below the National objective. For example, at Oak Hill 2 and Providence Hill 2 recorded the highest concentration of NO₂ and within 10% of the National objective. However, as mentioned before, both are compliant when distance adjusted to the nearest receptor. This positive trend yet to be confirmed.

Table 3-3 – 3&5-year trend and comparison within AQMA 3

Site Name	Monitoring	Site Type	2018	2019	2020	2021	2022	3-year (2020-22) average	Difference between 2019 and 3-year average	A comparison between 2022 and 3&5-year average	
			µg/m ³					%			
BDG-Bridge Road	DT	Roadside	27.8	26.4	21.1	22.4	21.0	21.5	-3.6	-2.4	-13.0
BDG2-Bridge Road 2			54.1	36.3	34.9	35.5	35.5	-1.5	-0.1	-13.2	
HL-Hamble Lane (Woodlands)			33.6	29.9	25.8	25.0	24.5	25.1	-3.2	-2.3	-13.2
HL2-Hamble Lane 2 (Tesco)			39.2	38.2	29.6	33.6	32.4	31.8	-2.5	1.7	-6.8
OH-Oakhill (Prov)			37.2	38.3	29.4	30.8	30.6	30.2	-2.4	1.0	-8.9
OH2-Oakhill 2 (Bridge)			50.9	48.4	39.7	41.5	38.6	39.9	-1.9	-3.5	-13.6
PH1-Providence Hill 1				38.8	25.0	26.6	26.9	26.2	-2.2	2.8	-9.0
PH2-Providence Hill 2				51.6	35.7	40.1	37.5	37.8	-1.7	-0.7	-9.9
PH3-Providence Hill 3				29.6	23.1	22.2	23.3	22.9	-3.1	1.9	-5.3

High Street Botley AQMA – see Figure A.4

Levels recorded by diffusion tubes within the High Street Botley AQMA demonstrated a small reduction in measured concentrations in 2022 (**Table 3-4**) when compared to average levels in 2019 and the five and three-year period.

Table 3-4 – 3&5-year trend and comparison within AQMA 4

Site Name	Monitoring	Site Type	2018	2019	2020	2021	2022	3-year (2020-22) average	Difference between 2019 and 3-year average	A comparison between 2022 and 3&5-year average	
			µg/m ³					%			
High Street Botley, DT	DT	Roadside	35.2	32.2	31.2	26.4	28.4	28.7	-3.0	-0.9	-8.0
High Street Botley 2 (A), DT			30.9	29.2	28.5	22.6	25.3	25.5	-3.3	-0.6	-7.8

The breach of National annual objective has not been identified over the last 5 years. At the same time, we would like to evaluate the significance of the Botley Bypass project and its effects in conjunction with the extraordinary economic conditions of 2022. These factors, alongside aspects like elevated fuel prices, potentially contributed to reduced traffic. Due to the lack of clarity regarding the cumulative effects, we are not yet considering the revocation of this AQMA.

3.2.2 Particulate Matter (PM₁₀)

The data capture stands at 19.8%, falling below the required threshold for annualisation, consequently, it is excluded from reporting. Every effort will be made to report the pollutant concentration next year.

3.2.3 Particulate Matter (PM_{2.5})

The data capture stands at 19.8%, falling below the required threshold for annualisation, consequently, it is excluded from reporting. Every effort will be made to report the pollutant concentration next year.

Appendix A: Monitoring Results

Table A.1 – Details of Automatic Monitoring Sites

Site ID	Site Name	Site Type	X OS Grid Ref (Easting)	Y OS Grid Ref (Northing)	Pollutants Monitored	In AQMA? Which AQMA?	Monitoring Technique	Distance to Relevant Exposure (m) ⁽¹⁾	Distance to kerb of nearest road (m) ⁽²⁾	Inlet Height (m)
ES1	Southampton Road	Roadside	445495	118237	NO ₂ , PM ₁₀ , PM _{2.5}	YES (Eastleigh AQMA No.1 (A335))	Chemiluminescent; Optical	17.6	2	1.9
ES2	Steele Close	Urban Background	443959	119673	NO ₂	NO	Chemiluminescent	16.0	2.4	2.2
ES3	The Point	Roadside	445310	119148	NO ₂	YES (Eastleigh AQMA No.1 (A335))	Chemiluminescent	42.8	8.2	3.6

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 – 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)
AL	Allington Lane	Roadside	445908	115544	NO2	No	55.7	2.6	No	2.4
AR	Ashdown Road	Urban Background	443291	122842	NO2	No	9.6	1.3	No	1.5
BDG	Bridge Road	Roadside	449099	109864	NO2	Yes, Hamble Lane AQMA (3)	2.2	1.7	No	2.5
BDG2	Bridge Road 2	Roadside	448914	110033	NO2	Yes, Hamble Lane AQMA (3)	32.2	1.1	No	2.3
BEL	Belmont Road	Urban Background	443778	119303	NO2	Yes, M3 AQMA (2)	10.7	2.1	No	2.2
BOT	Botley Road	Roadside	449634	117382	NO2	No	4.5	1.9	No	2.4
BR	Bishopstoke Road	Roadside	446604	119149	NO2	No	11.5	1.8	No	2.4
BR2	Bishopstoke Road 2	Roadside	446051	119171	NO2	Yes, Eastleigh AQMA (1)	0.3	2.2	No	2.1
CA(15)	Chestnut Avenue (15)	Roadside	445339	118111	NO2	Yes, Eastleigh AQMA (1)	3.8	2.7	No	2.4
CC	Chestnut Close	Roadside	443054	118962	NO2	No	9.9	1.5	No	2.1

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)
CR	Campbell Road	Industrial	445750	118111	NO2	No	12.9	2.2	No	2.1
CR3	Campbell Road 3	Industrial	446117	117846	NO2	No	2.7	2.7	No	2.2
CR4	Campbell Road 4	Industrial	445841	118086	NO2	No	19.0	0.5	No	1.9
DD(A), DD(B)	Dove Dale (B)	Urban Background	443559	118751	NO2	Yes, M3 AQMA (2)	7.7	2.9	No	2.7
FOR	Fair Oak Road	Roadside	447427	118780	NO2	No	5.8	5.6	No	2.5
FORSL	Fair Oak Road / Sandy Lane	Roadside	448788	118553	NO2	No	33.0	1.0	No	1.5
GR	Grange Road	Roadside	449867	113250	NO2	No	10.0	1.7	No	2.5
HCF	Hound Corner Fruit Farm	Roadside	447378	108836	NO2	No	86.8	0.6	No	2.2
HG	Hadleigh Gardens	Urban Background	445347	120367	NO2	No	5.9	1.9	No	2.7
HL	Hamble Lane	Roadside	447717	110359	NO2	Yes, Hamble Lane AQMA (3)	38.0	1.7	No	2.3
HL2	Hamble Lane 2	Roadside	447745	110478	NO2	Yes, Hamble Lane AQMA (3)	9.9	1.4	No	2.3
HL4	Hamble Lane 4	Roadside	447357	108543	NO2	No	25.0	3.0	No	2.2

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)
HPO	Hound Parish Office	Roadside	445715	108448	NO2	No	0.0	6.0	No	2.2
HPS	Hamble Primary School	Roadside	447430	107552	NO2	No	60.0	0.6	No	2.1
HSB	High Street Botley	Roadside	451431	113025	NO2	Yes, High Street Botley AQMA (4)	4.8	2.1	No	2.3
HSB2(A)	High Street Botley 2 (A)	Roadside	451184	113030	NO2	Yes, High Street Botley AQMA (4)	5.7	1.3	No	2.5
JW	Jukes Walk	Roadside	447690	114912	NO2	No	19.0	1.6	No	1.5
KCA(18)	Kings Copse Avenue (18)	Roadside	449935	113146	NO2	No	0.5	1.6	No	2.4
LR13	Leigh Road / J13	Roadside	443842	119526	NO2	Yes, Eastleigh AQMA (1)	7.5	1.7	No	2.5
LRPR	Leigh Road / Pluto Road (as replaced)	Roadside	444864	119174	NO2	Yes, Eastleigh AQMA (1)	7.3	1.7	No	2.2
MC	Medina Close	Urban Background	444239	120060	NO2	Yes, M3 AQMA (2)	7.6	1.5	No	1.5
MS	Mill Street	Roadside	445707	119619	NO2	Yes, Eastleigh AQMA (1)	2.1	1.5	No	2.8
NH	Nuffield Hospital	Urban Background	445121	122183	NO2	No	10.1	1.0	No	2.2

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)
OH	Oak Hill	Roadside	448653	110280	NO2	Yes, Hamble Lane AQMA (3)	9.4	1.9	No	2.3
OH2	Oak Hill 2	Roadside	448736	110213	NO2	Yes, Hamble Lane AQMA (3)	4.6	1.2	No	2.3
OX	Oxburgh Close	Urban Background	444543	120187	NO2	No	11.4	1.9	No	2.3
PA	Passfield Avenue	Roadside	444340	118696	NO2	No	24.7	1.4	No	1.5
PAV	Pavilion Road	Roadside	450061	113452	NO2	No	12.8	2.0	No	1.9
PC	Porteous Crescent (A)	Urban Background	444656	120775	NO2	Yes, M3 AQMA (2)	13.8	1.0	No	2.5
PH1	Providence Hill 1	Roadside	448237	110610	NO2	Yes, Hamble Lane AQMA (3)	14.8	3.4	No	2.3
PH2	Providence Hill 2	Roadside	448330	110532	NO2	Yes, Hamble Lane AQMA (3)	2.9	2.4	No	2.3
PH3	Providence Hill 3	Roadside	448249	110627	NO2	Yes, Hamble Lane AQMA (3)	29.2	1.1	No	2.3
SC(A), SC(B), SC(C)	Steele Close (C)	Urban Background	443959	119673	NO2	No	16.0	2.1	Yes	2.0

Diffusion Tube ID	Site Name	Site Type	X OS Grid Ref (Easting)	Y OS Grid Ref (Northing)	Pollutants Monitored	In AQMA? Which AQMA?	Distance to Relevant Exposure (m) ⁽¹⁾	Distance to kerb of nearest road (m) ⁽²⁾	Tube Co-located with a Continuous Analyser?	Tube Height (m)
SR1	Southampton Road 1	Roadside	445450	118144	NO2	Yes, Eastleigh AQMA (1)	4.3	2.0	No	2.4
SR2	Southampton Road 2	Roadside	445651	118634	NO2	Yes, Eastleigh AQMA (1)	5.2	1.7	No	2.5
SRAN(17)(A) SRAN(17)(B) SRAN(17)(C)	Southampton Road Analyser (17) (C)	Roadside	445495	118237	NO2	Yes, Eastleigh AQMA (1)	17.6	1.6	Yes	1.9
SSQ	Sparrow Square	Urban Background	443483	118612	NO2	Yes, M3 AQMA (2)	9.0	1.7	No	2.6
SWA	Swaythling Road	Roadside	446170	114603	NO2	No	4.1	2.7	No	2.4
TP(A), TP(B), TP(C)	The Point (C)	Roadside	445310	119148	NO2	Yes, Eastleigh AQMA (1)	42.8	8.1	Yes	2.3
TW	Twyford Road	Roadside	445739	119856	NO2	Yes, Eastleigh AQMA (1)	3.6	1.5	No	2.1
UNC	Upper Northam Close	Urban Background	448090	112635	NO2	No	12.9	2.5	No	2.2
WA	Woodside Avenue	Roadside	444483	119443	NO2	Yes, Eastleigh AQMA (1)	7.2	1.9	No	2.2
WSRB ⁽³⁾	Winchester Street Railway Bridge	Roadside	450815	114091	NO2	No	32.7	0.3	No	2.3
WYV	Wyvern School	Roadside	449577	118165	NO2	No	4.5	1.9	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.
- (3) Only 1 month (December 2022) data available, therefore not reported as annual average. No other information therefore presented.

Table A.3 – Annual Mean NO₂ Monitoring Results: Automatic Monitoring (µg/m³)

Site ID	X OS Grid Ref (Easting)	Y OS Grid Ref (Northing)	Site Type	Valid Data Capture for Monitoring Period (%) ⁽¹⁾	Valid Data Capture 2022 (%) ⁽²⁾	2018	2019	2020	2021	2022
ES1	445495	118237	Roadside	35.2	35.2	37.8	34.1	26.3	-	28.2
ES2	443959	119673	Urban Background	46.7	46.7	28.5	26.1	19.1	19.8	19.2
ES3	445310	119148	Roadside	99.0	99.0	31	25.6	20.0	22.6	21.5

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

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

Notes:

The annual mean concentrations are presented as µg/m³.

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

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

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

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

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

Table A.4 – Annual Mean NO₂ Monitoring Results: Non-Automatic Monitoring (µg/m³)

Diffusion Tube ID	X OS Grid Ref (Easting)	Y OS Grid Ref (Northing)	Site Type	Valid Data Capture for Monitoring Period (%) ⁽¹⁾	Valid Data Capture 2022 (%) ⁽²⁾	2018	2019	2020	2021	2022
AL	445908	115544	Roadside	100	100.0	25.1	23.5	19.0	19.8	20.7
AR	443291	122842	Urban Background	92.3	92.3	11.6	10.2	8.0	8.1	8.0
BDG	449099	109864	Roadside	92.3	92.3	27.8	26.4	21.1	22.4	21.0
BDG2	448914	110033	Roadside	90.4	90.4		54.1	36.3	34.9	35.5
BEL	443778	119303	Urban Background	100	100.0	26.0	24.4	20.8	20.1	18.6
BOT	449634	117382	Roadside	100	100.0	32.5	31.9	27.6	28.0	27.3
BR	446604	119149	Roadside	100	100.0	33.4	33.8	29.6	29.0	30.5
BR2	446051	119171	Roadside	59.6	59.6	31.7	31.3	26.8	26.6	27.2
CA(15)	445339	118111	Roadside	100	100.0	25.8	23.9	21.5	21.3	20.9
CC	443054	118962	Roadside	90.4	90.4	28.2	28.0	21.6	21.7	23.3
CR	445750	118111	Industrial	100	100.0	35.1	32.3	32.2	27.3	30.3
CR3	446117	117846	Industrial	90.4	90.4			13.8	15.9	14.3
CR4	445841	118086	Industrial	100	100.0			19.6	19.3	20.9

Diffusion Tube ID	X OS Grid Ref (Easting)	Y OS Grid Ref (Northing)	Site Type	Valid Data Capture for Monitoring Period (%) ⁽¹⁾	Valid Data Capture 2022 (%) ⁽²⁾	2018	2019	2020	2021	2022
DD(A), DD(B)	443559	118751	Urban Background	100	100.0	30.5	26.0	22.0	22.7	20.6
FOR	447427	118780	Roadside	100	100.0	21.9	20.1	17.6	17.3	16.8
FORSL	448788	118553	Roadside	100	100.0	28.0	28.0	23.4	23.9	24.6
GR	449867	113250	Roadside	100	100.0	28.7	26.6	23.3	24.0	23.5
HCF	447378	108836	Roadside	51.9	51.9				-	25.4
HG	445347	120367	Urban Background	100	100.0	19.0	17.1	14.8	15.1	14.5
HL	447717	110359	Roadside	100	100.0	33.6	29.9	25.8	25.0	24.5
HL2	447745	110478	Roadside	100	100.0	39.2	38.2	29.6	33.6	32.4
HL4	447357	108543	Roadside	80.8	80.8			17.5	17.6	18.2
HPO	445715	108448	Roadside	100	100.0			14.8	16.1	16.2
HPS	447430	107552	Roadside	84.6	84.6			18.5	21.0	19.4
HSB	451431	113025	Roadside	100	100.0	32.2	31.2	26.4	28.6	28.4
HSB2(A)	451184	113030	Roadside	100	100.0	29.2	28.5	22.6	24.7	25.3
JW	447690	114912	Roadside	90.4	90.4	24.7	21.3	16.5	17.4	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 2022 (%) ⁽²⁾	2018	2019	2020	2021	2022
KCA(18)	449935	113146	Roadside	100	100.0	30.7	28.1	24.5	26.3	25.1
LR13	443842	119526	Roadside	100	100.0	41.4	39.0	30.7	32.5	32.9
LRPR	444864	119174	Roadside	92.3	92.3	32.9	31.6	23.9	24.8	24.6
MC	444239	120060	Urban Background	90.4	90.4	26.4	24.4	19.4	20.1	18.8
MS	445707	119619	Roadside	92.3	92.3	32.1	26.4	22.9	24.2	25.0
NH	445121	122183	Urban Background	100	100.0	26.0	26.0	20.3	22.2	19.4
OH	448653	110280	Roadside	100	100.0	37.2	38.3	29.4	30.8	30.6
OH2	448736	110213	Roadside	75	75.0	50.9	48.4	39.7	41.5	38.6
OX	444543	120187	Urban Background	90.4	90.4	20.1	18.6	15.8	15.3	13.9
PA	444340	118696	Roadside	80.8	80.8	30.0	26.1	21.0	22.1	21.5
PAV	450061	113452	Roadside	73.1	73.1				-	16.4
PC	444656	120775	Urban Background	100	100.0	27.7	24.0	17.8	19.5	18.1
PH1	448237	110610	Roadside	100	100.0		38.8	25.0	26.6	26.9
PH2	448330	110532	Roadside	100	100.0		51.6	35.7	40.1	37.5

Diffusion Tube ID	X OS Grid Ref (Easting)	Y OS Grid Ref (Northing)	Site Type	Valid Data Capture for Monitoring Period (%) ⁽¹⁾	Valid Data Capture 2022 (%) ⁽²⁾	2018	2019	2020	2021	2022
PH3	448249	110627	Roadside	82.7	82.7		29.6	23.1	22.2	23.3
SC(A), SC(B), SC(C)	443959	119673	Urban Background	100	100.0	25.1	22.7	18.0	18.7	18.6
SR1	445450	118144	Roadside	100	100.0	45.7	43.6	33.1	28.9	36.3
SR2	445651	118634	Roadside	100	100.0	42.7	37.6	31.7	36.1	34.2
SRAN(17)(A), SRAN(17)(B), SRAN(17)(C)	445495	118237	Roadside	100	100.0	38.9	36.6	29.4	33.1	28.9
SSQ	443483	118612	Urban Background	100	100.0	28.2	24.3	20.1	20.5	19.7
SWA	446170	114603	Roadside	100	100.0	27.7	28.6	24.1	23.6	24.5
TP(A), TP(B), TP(C)	445310	119148	Roadside	100	100.0	25.5	22.9	18.6	20.3	19.7
TW	445739	119856	Roadside	84.6	84.6	27.5	24.7	22.5	22.4	22.2
UNC	448090	112635	Urban Background	100	100.0	27.7	24.8	19.4	19.0	18.6
WA	444483	119443	Roadside	84.6	84.6	35.0	31.5	26.0	26.6	26.6
WYV	449577	118165	Roadside	92.3	92.3	29.5	24.1	23.4	24.7	23.6

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 NO_2 annual mean objective of $40\mu\text{g}/\text{m}^3$ are shown in **bold**.

NO_2 annual means exceeding $60\mu\text{g}/\text{m}^3$, indicating a potential exceedance of the NO_2 1-hour mean objective are shown in **bold and underlined**.

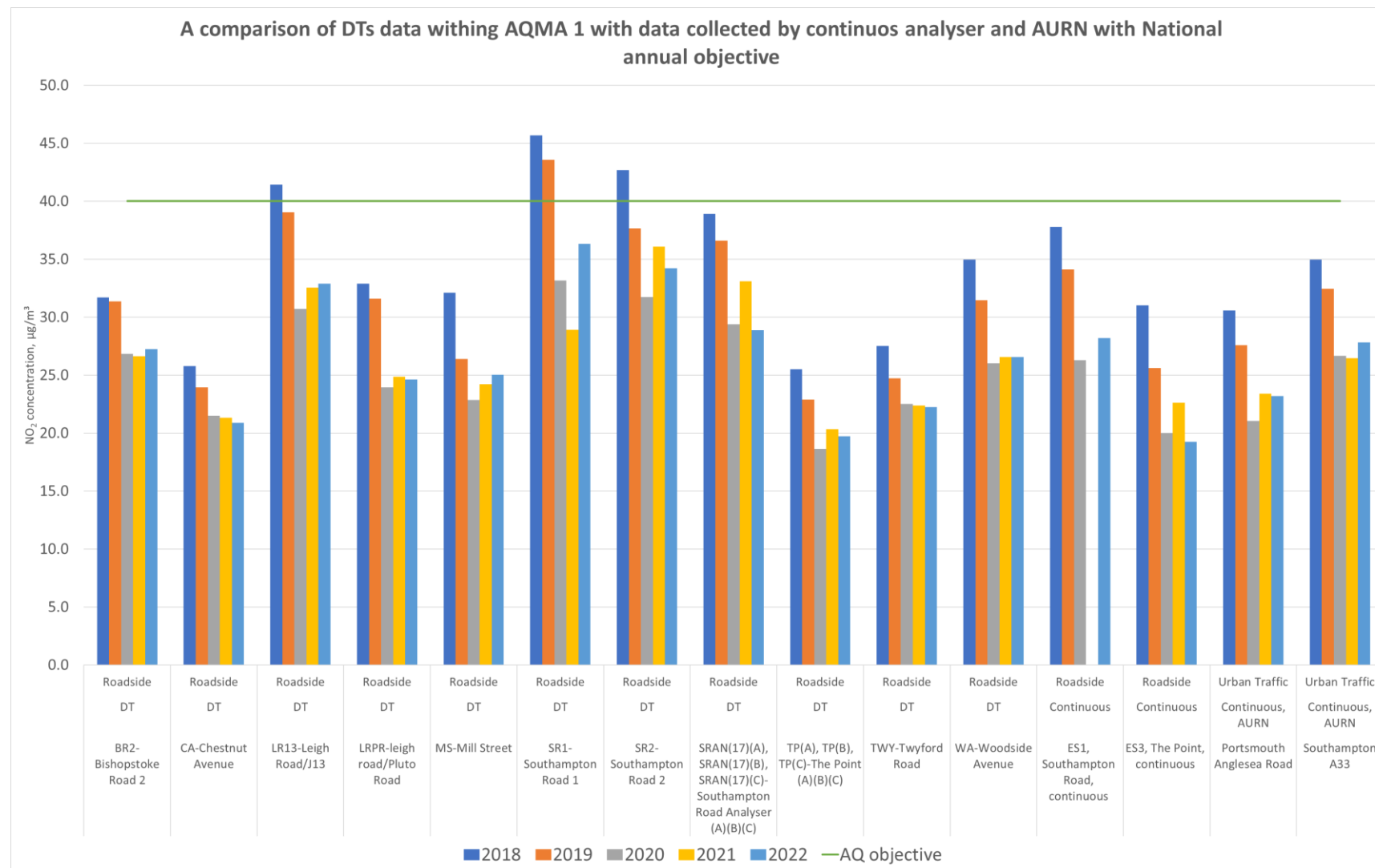
Means for diffusion tubes have been corrected for bias. All means have been “annualised” as per LAQM.TG22 if valid data capture for the full calendar year is less than 75%. See Appendix C for details.

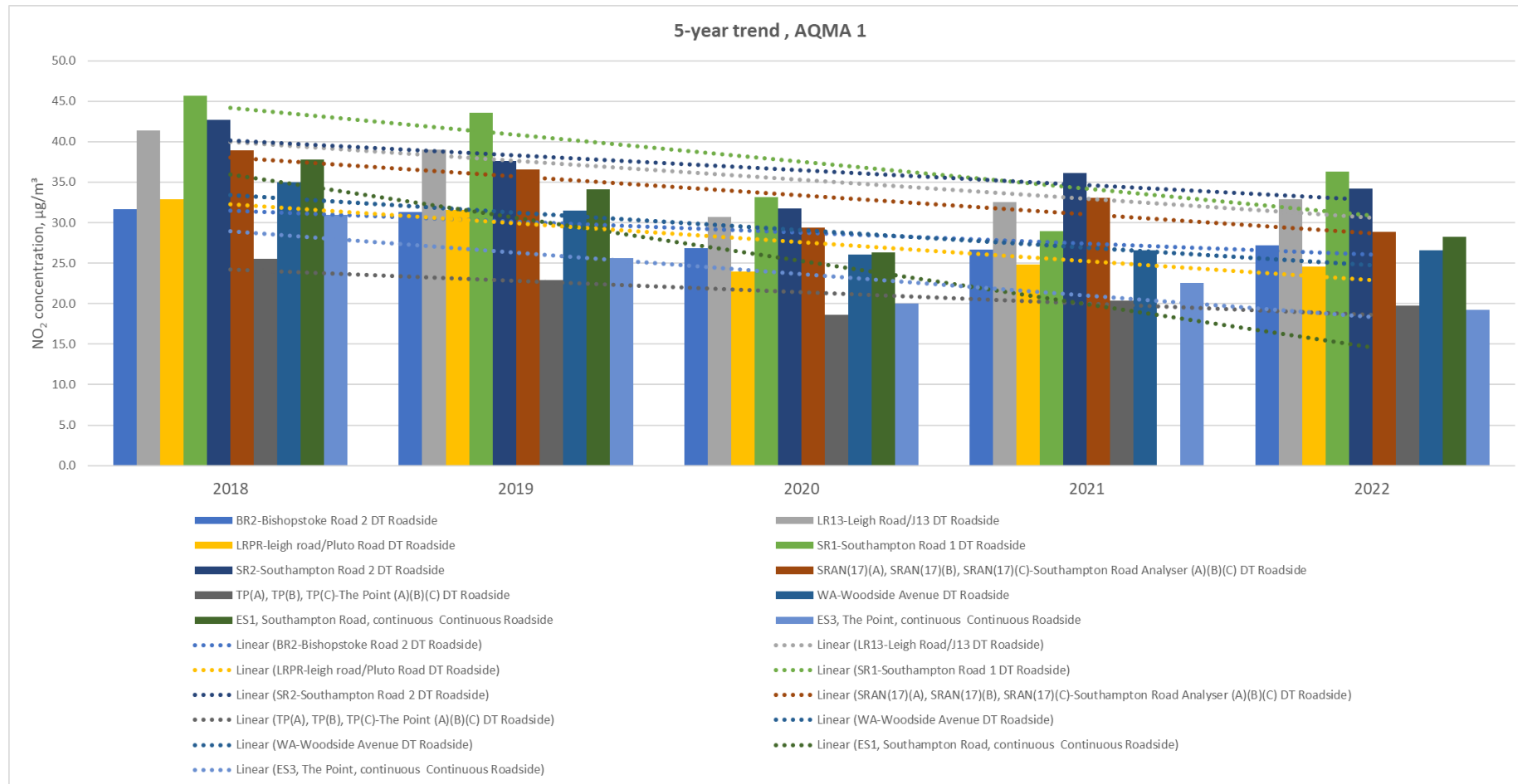
Concentrations are those at the location of monitoring and not those following any fall-off with distance adjustment.

(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.2 – Trends in Annual Mean NO₂ Concentrations, AQMA 1





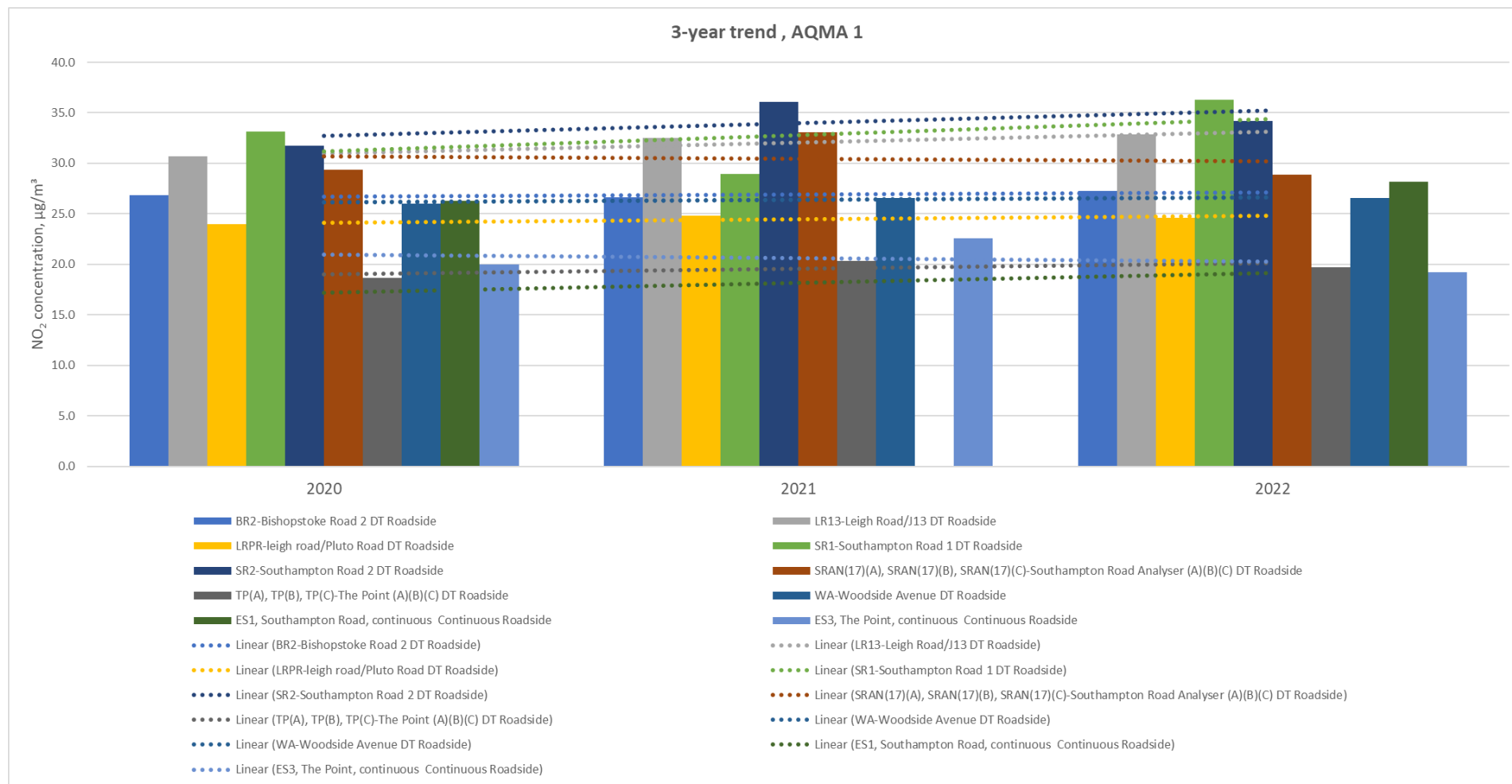
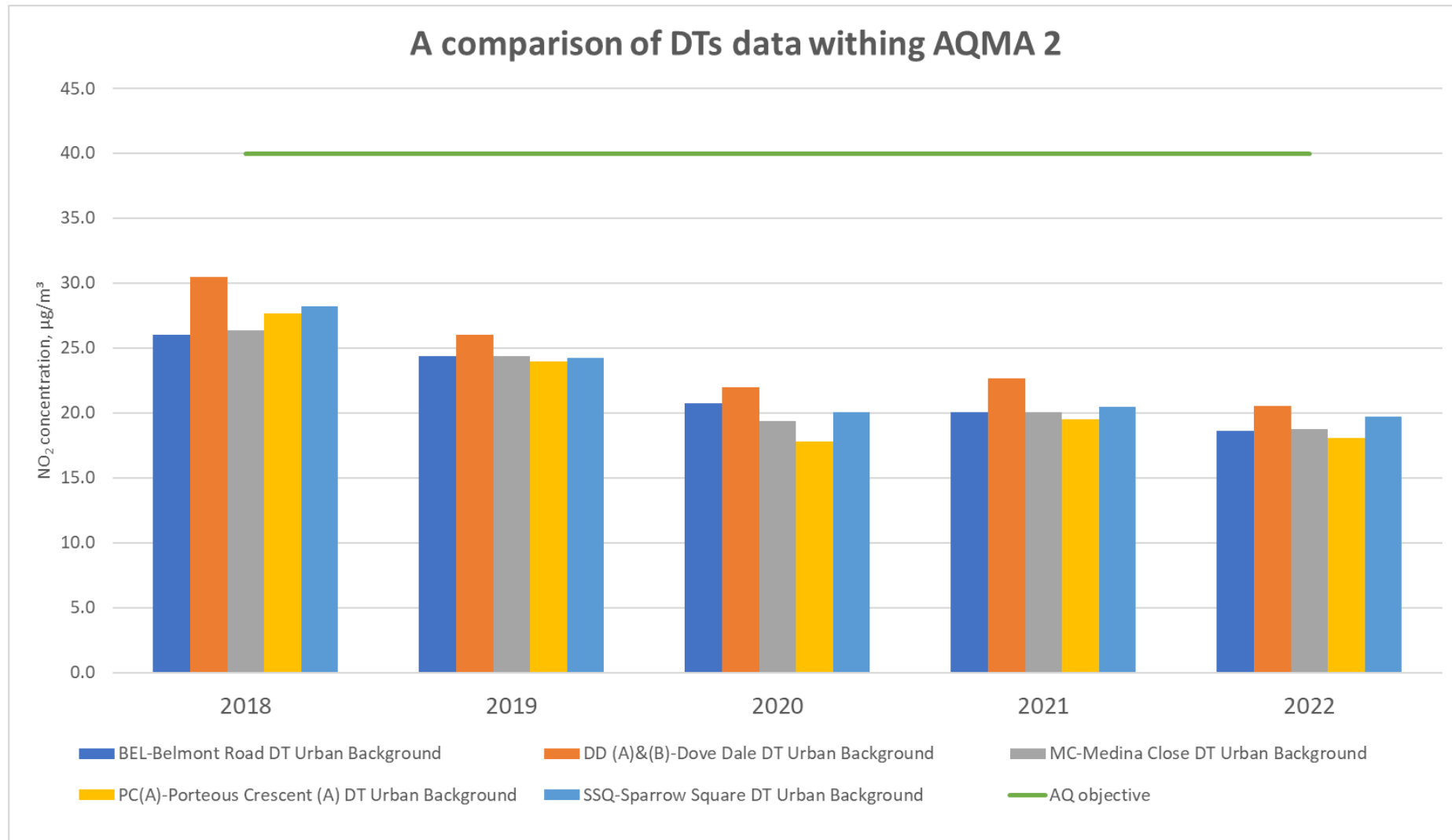
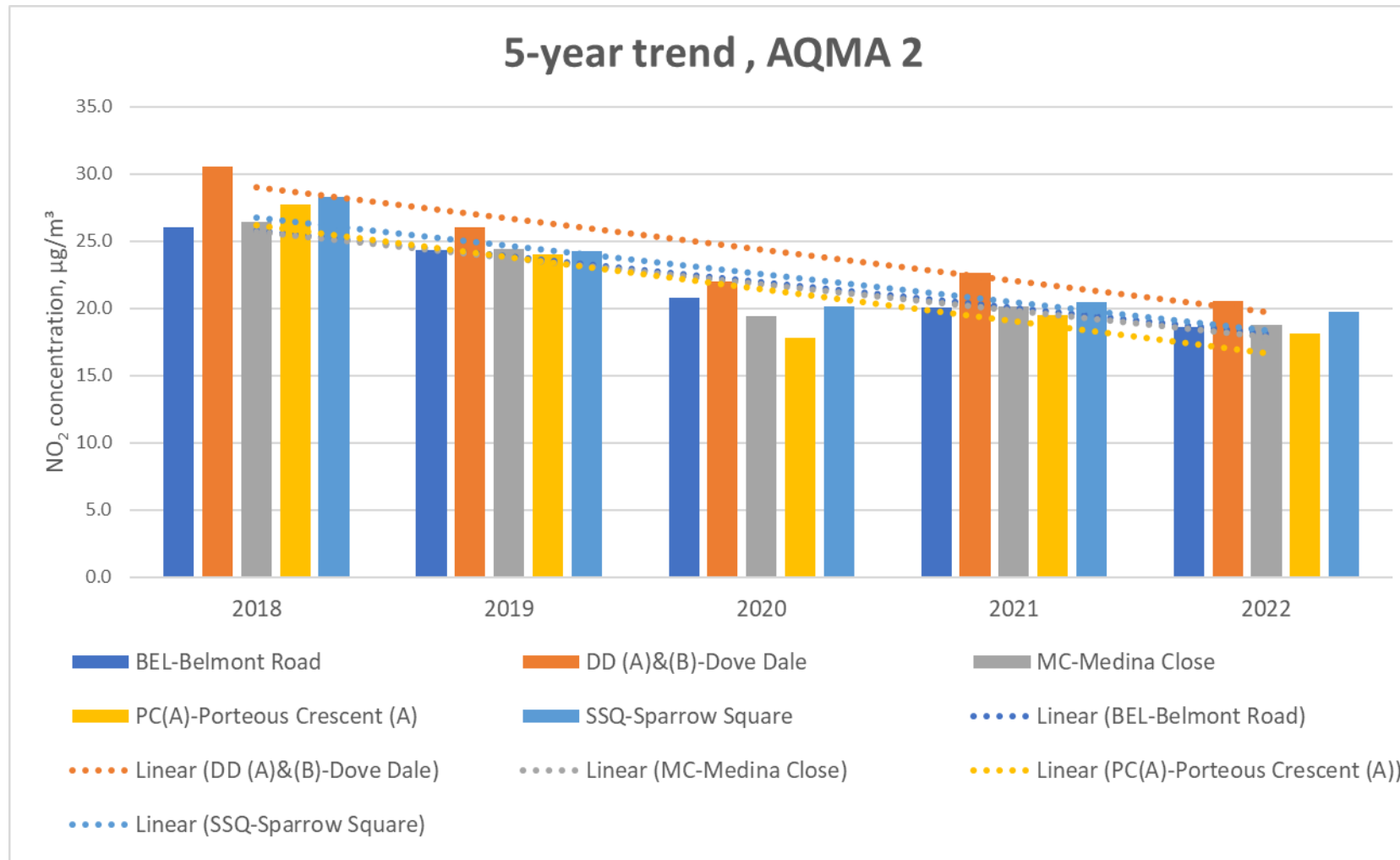


Figure A.3 – Trends in Annual Mean NO₂ Concentrations, AQMA 2





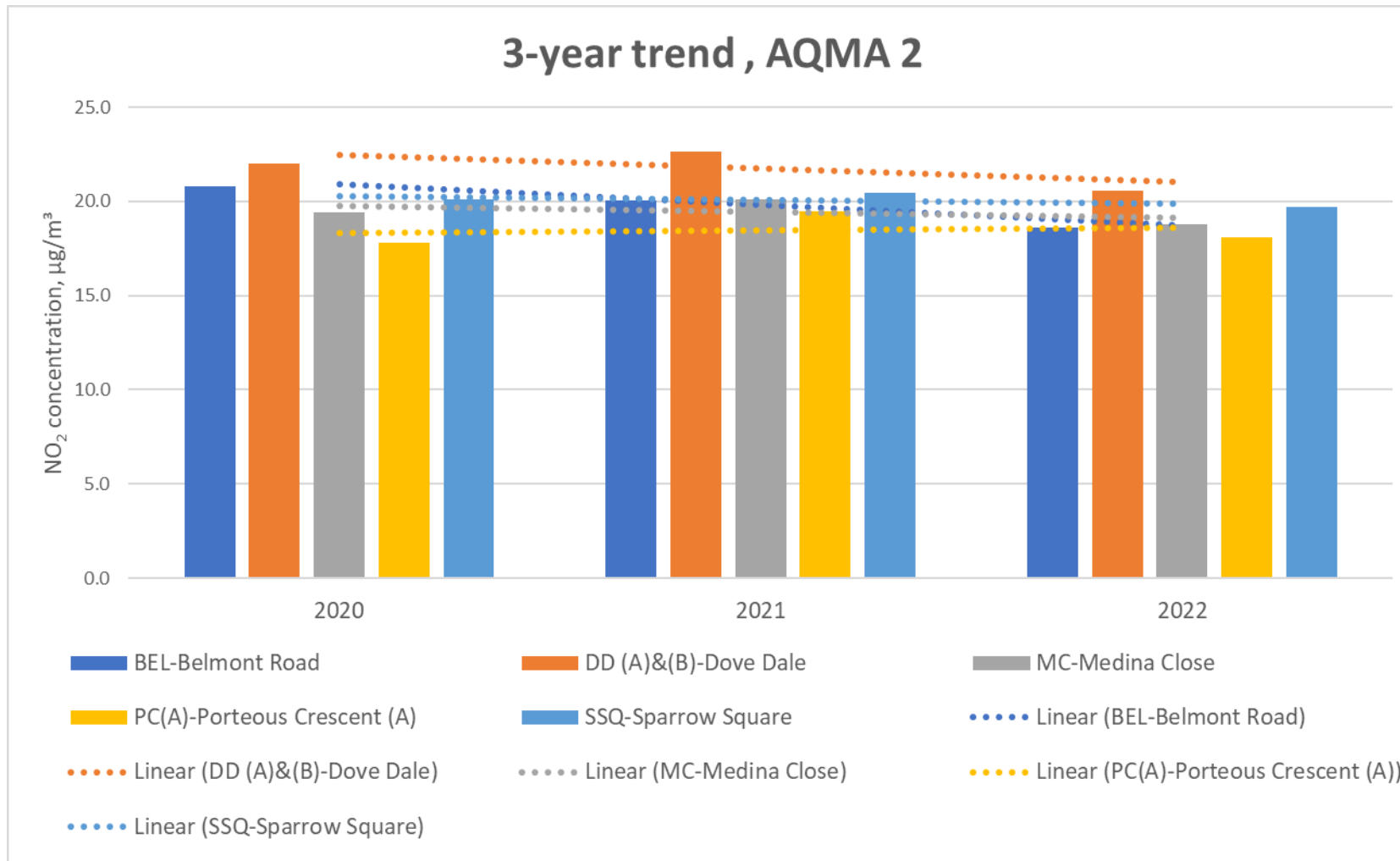
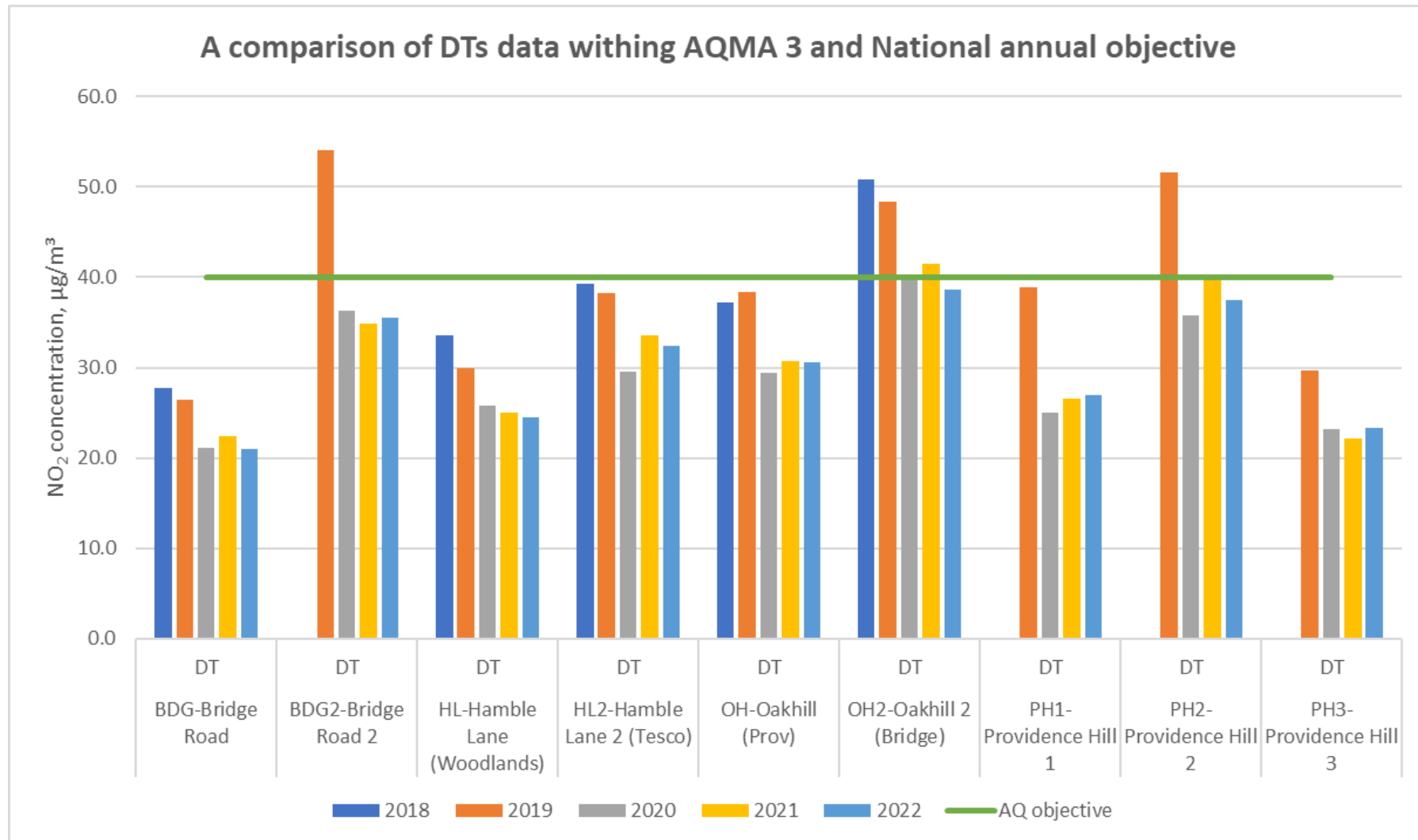
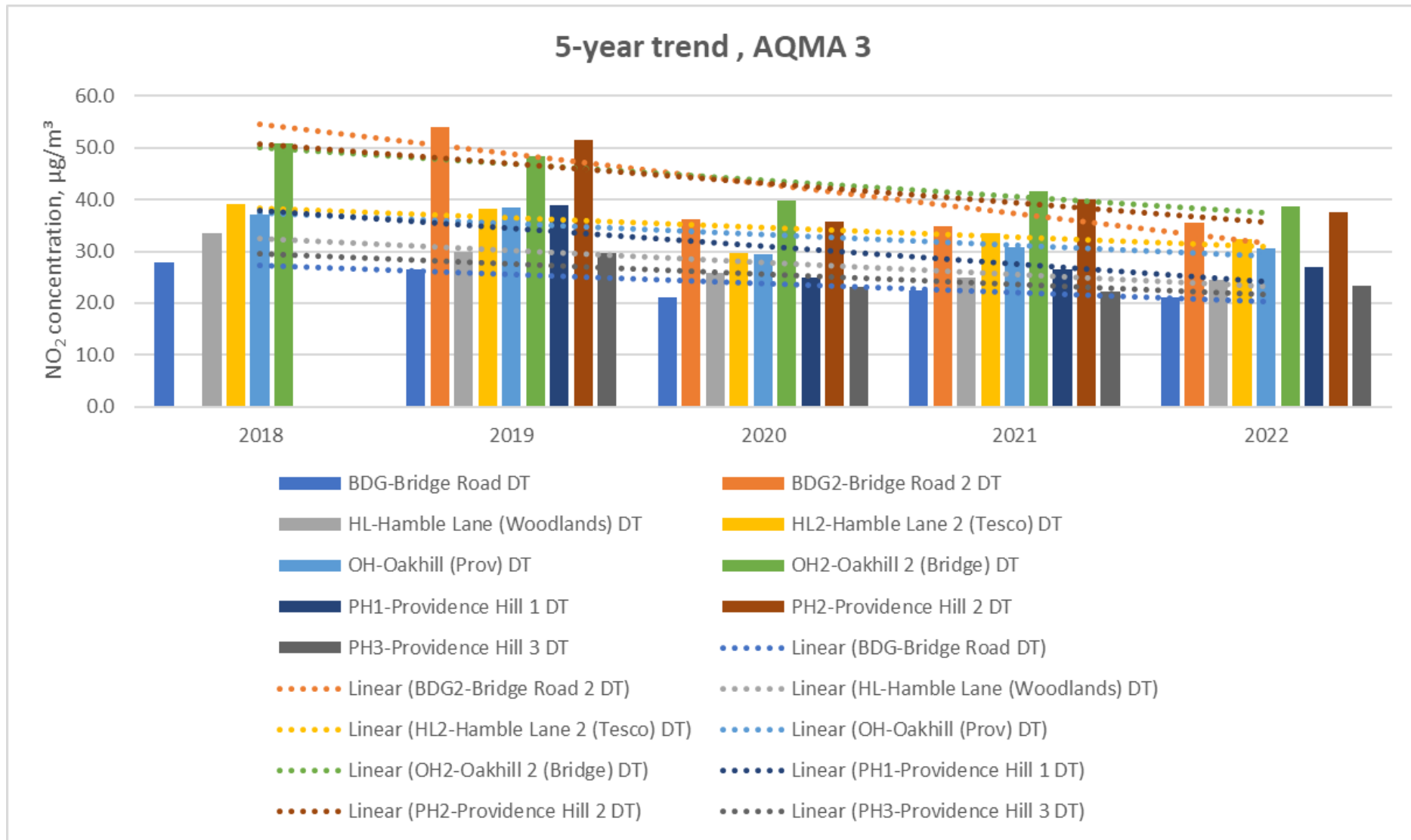


Figure A.4 – Trends in Annual Mean NO₂ Concentrations, AQMA 3





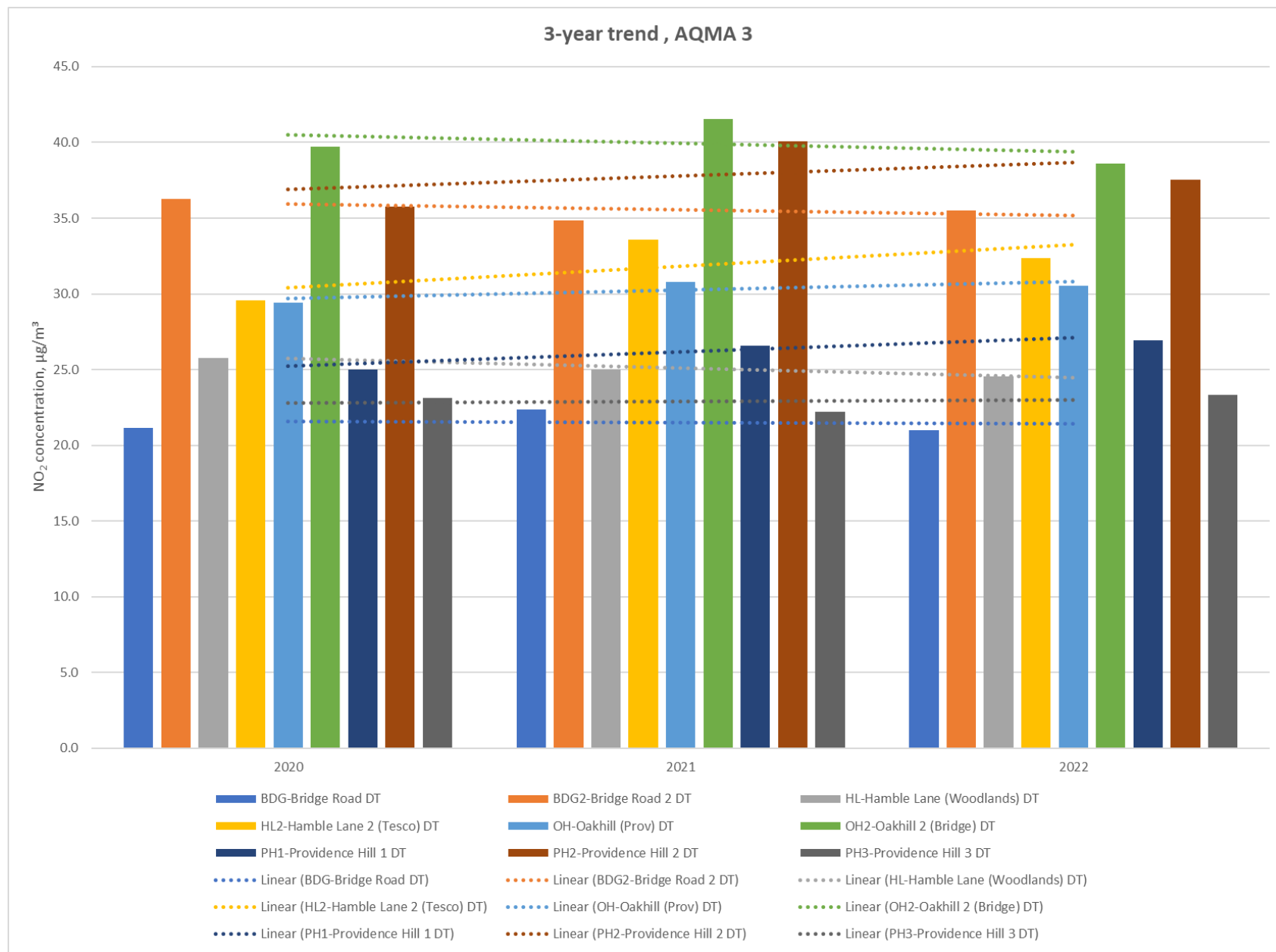
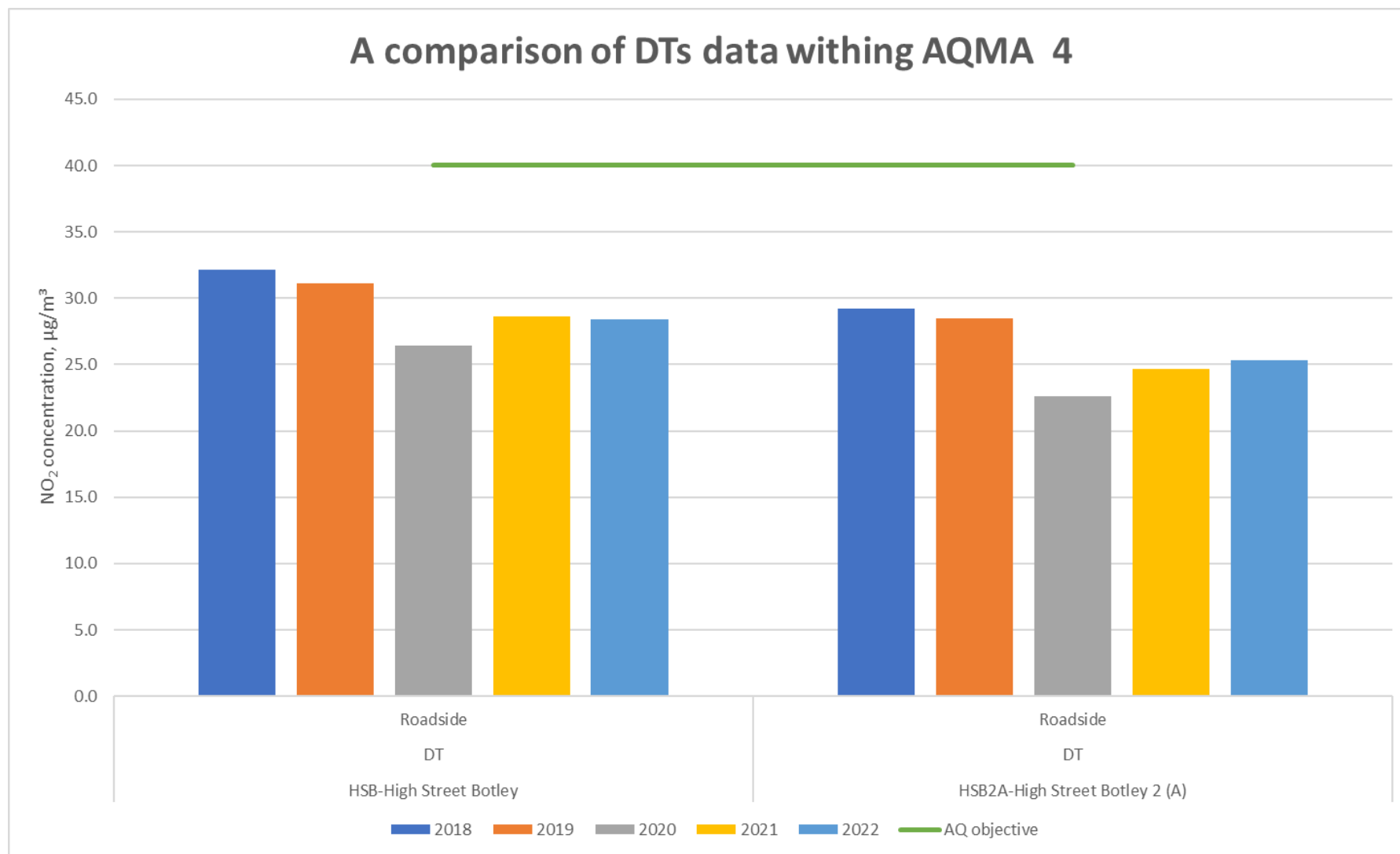


Figure A.5 – Trends in Annual Mean NO₂ Concentrations AQMA 4



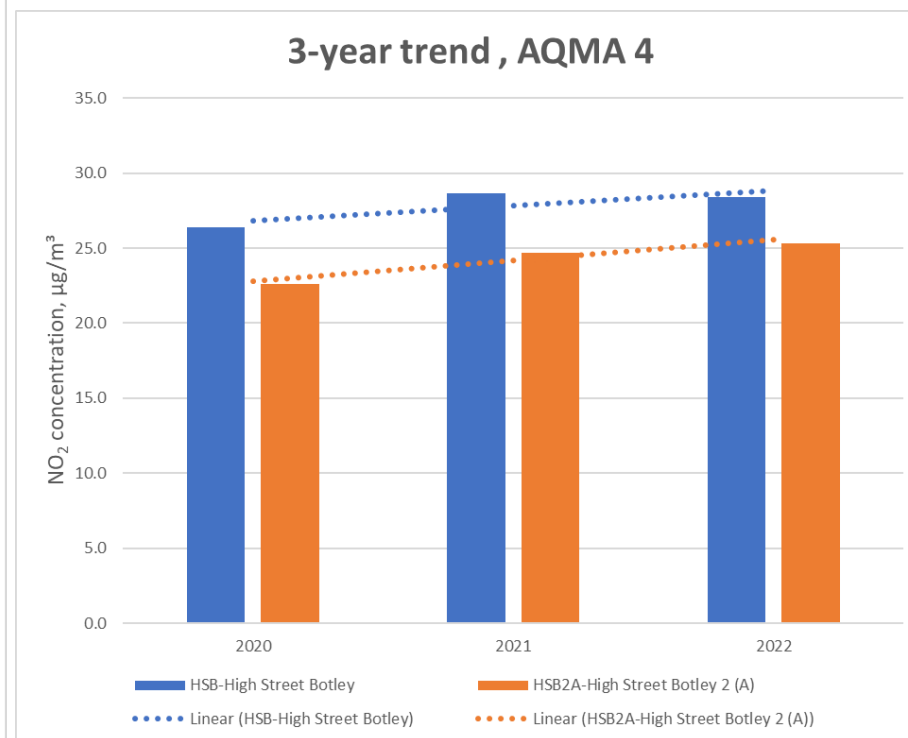
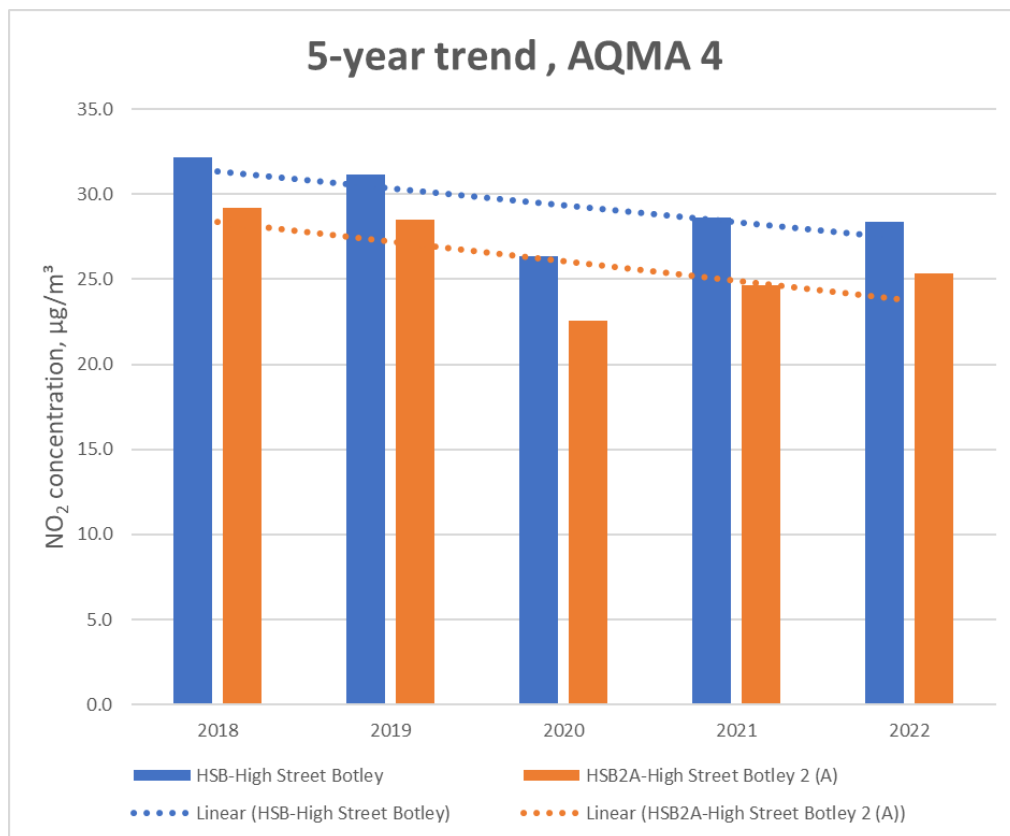


Table A.5 – 1-Hour Mean NO₂ Monitoring Results, Number of 1-Hour Means > 200µg/m³

Site ID	X OS Grid Ref (Easting)	Y OS Grid Ref (Northing)	Site Type	Valid Data Capture for Monitoring Period (%) ⁽¹⁾	Valid Data Capture 2022 (%) ⁽²⁾	2018	2019	2020	2021	2022
ES1	445495	118237	Roadside	35.2	35.2	0	0	0	-	0
ES2	443959	119673	Urban Background	46.7	46.7	0	0	0	0	0
ES3	445310	119148	Roadside	99.0	99.0	0	0	0	0	0

Notes:

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

Exceedances of the NO₂ 1-hour mean objective (200µg/m³ not to be exceeded more than 18 times/year) are shown in **bold**.

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

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

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

Table A.6 – Annual Mean PM₁₀ Monitoring Results (µg/m³)

Site ID	X OS Grid Ref (Easting)	Y OS Grid Ref (Northing)	Site Type	Valid Data Capture for Monitoring Period (%) ⁽¹⁾	Valid Data Capture 2022 (%) ⁽²⁾	2018	2019	2020	2021	2022
ES1	445495	118237	Roadside	19.8	19.8	22.5	21.1	16.9	-	-

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

Notes:

The annual mean concentrations are presented as µg/m³.

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

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

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

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

Appendix B: Full Monthly Diffusion Tube Results for 2022

Table B.1 – NO₂ 2022 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 0.85	Annual Mean: Distance Corrected to Nearest Exposure	Comment
AL	445908	115544	32.3	25.0	26.8	21.7	20.1	22.0	22.0	20.9	21.7	23.8	28.2	28.0	24.4	20.7	-	
AR	443291	122842	13.1	8.4	12.7	8.1	6.4	6.5	6.6	8.1		8.8	10.8	13.4	9.4	8.0	-	
BDG	449099	109864		24.4	29.1	21.0	19.5	23.0	24.3	24.5	24.9	24.3	29.4	27.6	24.7	21.0	-	
BDG2	448914	110033	51.4	35.7	43.8	38.5		43.3	40.8	45.1	36.7	43.8	38.8	41.5	41.8	35.5	-	
BEL	443778	119303	27.0	17.0	29.6	19.9	18.9	18.1	17.9	19.8	19.1	24.0	23.6	27.9	21.9	18.6	-	
BOT	449634	117382	47.0	32.3	31.0	25.4	27.7	29.9	32.3	32.6	32.9	25.7	33.1	35.3	32.1	27.3	-	
BR	446604	119149	41.2	38.7	35.2	30.5	30.9	33.3	35.9	34.7	33.8	37.4	42.1	36.8	35.9	30.5	-	
BR2	446051	119171					26.7	26.1	23.2	28.5		31.5	37.1	35.2	29.8	27.2	-	
CA(15)	445339	118111	31.8	22.8	26.4	21.4	20.6	18.9	21.6	21.8	23.7	27.3	28.6	29.9	24.6	20.9	-	
CC	443054	118962	33.3	27.0	25.2	21.5		25.4	25.1	25.9	25.3	30.2	32.2	30.5	27.4	23.3	-	
CR	445750	118111	40.3	49.0	28.0	26.5	34.0	33.3	32.0	26.5	28.1	39.1	49.8	40.7	35.6	30.3	-	
CR3	446117	117846	27.4	18.3	17.6	13.6	13.7	11.8	13.8	14.1	15.6		16.8	22.8	16.9	14.3	-	
CR4	445841	118086	36.1	30.2	22.0	21.3	22.4	18.4	20.0	19.6	19.3	26.3	29.3	30.2	24.6	20.9	-	
DD(A)	443559	118751	34.3	27.8	25.3	25.2	21.4	19.5	20.9	21.4	21.0	22.6	25.1	28.1	-	-	-	Duplicate Site with DD(A) and DD(B) - Annual data provided for DD(B) only
DD(B)	443559	118751	36.1	26.7	26.6	24.8	11.0	19.4	21.6	22.9	21.7	22.8	26.1		24.2	20.6	-	Duplicate Site with DD(A) and DD(B) - Annual data provided for DD(B) only
FOR	447427	118780	26.8	20.1	21.0	16.8	16.1	14.9	16.6	17.4	18.3	20.7	24.5	24.5	19.8	16.8	-	
FORSL	448788	118553	38.4	28.9	30.4	22.9	23.6	25.9	28.1	27.8	27.2	30.0	32.9	30.7	28.9	24.6	-	
GR	449867	113250	44.0	26.3	29.0	29.4	20.7	18.4	24.8	27.0	29.3	24.0	26.4	32.6	27.7	23.5	-	

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 0.85	Annual Mean: Distance Corrected to Nearest Exposure	Comment
HCF	447378	108836	39.0			31.6	31.3		33.8	33.2				35.9	34.1	25.4	-	
HG	445347	120367	23.8	17.8	21.5	13.6	13.1	13.4	13.0	13.3	14.6	17.7	20.3	22.3	17.0	14.5	-	
HL	447717	110359	37.8	28.2	24.8	25.6	26.4	29.3	26.1	27.7	27.3	26.2	29.4	37.5	28.9	24.5	-	
HL2	447745	110478	52.3	33.2	37.4	37.4	31.3	37.0	37.2	40.4	36.8	34.3	39.5	40.4	38.1	32.4	-	
HL4	447357	108543	31.7	18.8	22.0		18.0	18.9	19.7	19.4	19.8		19.9	26.2	21.4	18.2	-	
HPO	445715	108448	26.6	17.4	21.5	17.6	14.9	15.3	17.0	19.1	18.2	19.0	18.2	24.4	19.1	16.2	-	
HPS	447430	107552	35.1	21.7	25.0	22.1	5.5			21.5	22.3	21.7	23.1	30.2	22.8	19.4	-	
HSB	451431	113025	39.6	30.8	37.4	31.9	33.0	30.2	34.9	36.0	32.0	31.7	31.5	32.1	33.4	28.4	-	
HSB2(A)	451184	113030	40.0	25.7	39.2	28.2	23.2	24.3	27.1	30.7	29.8	28.3	29.5	31.6	29.8	25.3	-	
JW	447690	114912	30.0	18.0	26.6	21.3		15.0	18.3	21.8	21.3	20.4	21.2	26.4	21.9	18.6	-	
KCA(18)	449935	113146	41.9	28.2	31.9	26.8	22.9	23.4	25.8	28.0	29.3	27.6	32.1	36.4	29.5	25.1	-	
LR13	443842	119526	41.1	36.7	43.8	33.2	31.9	36.3	35.2	36.7	33.9	43.7	48.4	43.5	38.7	32.9	-	
LRPR	444864	119174	39.6	24.2	37.0	27.7	21.3	23.6	25.1	28.8	31.0	29.2		30.9	28.9	24.6	-	
MC	444239	120060	26.5	18.7	32.8	19.5		18.8	18.5	20.4	18.5	22.8	22.6	23.7	22.1	18.8	-	
MS	445707	119619	31.9		33.1	28.0	22.9	25.8	24.6	29.0	30.4	28.9	32.1	37.1	29.4	25.0	-	
NH	445121	122183	30.0	24.6	32.1	23.2	17.8	17.5	17.5	21.1	19.2	21.3	21.6	27.5	22.8	19.4	-	
OH	448653	110280	44.4	29.7	40.4	33.5	26.2	31.9	34.0	37.3	35.2	44.4	34.7	39.4	35.9	30.6	-	
OH2	448736	110213		41.5	44.7		43.0		45.8	48.8	45.7	36.3	50.3	52.4	45.4	38.6	31.6	
OX	444543	120187	23.6	19.0	19.4	15.1	14.1	13.5	12.9	13.7	14.4	17.3	16.6		16.3	13.9	-	
PA	444340	118696	31.1	21.0	33.4	25.0		19.9	20.9	24.4	23.2	26.1	28.2		25.3	21.5	-	
PAV	450061	113452	32.3	17.4	20.9	16.4		12.0		20.1	16.3	18.7	19.2		19.2	16.4	-	

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 0.85	Annual Mean: Distance Corrected to Nearest Exposure	Comment
PC	444656	120775	24.6	17.9	30.0	21.6	18.8	22.1	19.4	14.5	17.7	21.5	21.6	26.0	21.3	18.1	-	
PH1	448237	110610	43.4	26.7	32.6	28.6	28.4	29.7	29.9	32.0	32.1	31.3	32.7	32.8	31.7	26.9	-	
PH2	448330	110532	54.2	40.7	43.5	43.8	41.1	46.1	42.7	45.1	41.5	41.9	46.5	42.7	44.1	37.5	33.6	
PH3	448249	110627	41.0	28.6	26.4	22.3			20.8	21.9	21.6	25.6	31.4	35.0	27.5	23.3	-	
SC(A)	443959	119673	24.8	18.6	31.7	21.5	17.7	17.5	18.9	19.5	19.3	23.8		24.6	-	-	-	Triplicate Site with SC(A), SC(B) and SC(C) - Annual data provided for SC(C) only
SC(B)	443959	119673	24.9	20.0	30.7	20.8	20.2	17.6	17.9	20.0	18.5		24.5	24.3	-	-	-	Triplicate Site with SC(A), SC(B) and SC(C) - Annual data provided for SC(C) only
SC(C)	443959	119673	25.3	19.1	31.0	19.7	17.8	17.9	17.8	19.6	19.0	24.2	25.1	26.0	21.9	18.6	-	Triplicate Site with SC(A), SC(B) and SC(C) - Annual data provided for SC(C) only
SR1	445450	118144	46.4	42.7	40.7	38.3	34.4	38.4	41.7	42.0	40.1	47.7	50.7	49.4	42.7	36.3	30.6	
SR2	445651	118634	47.2	34.8	43.9	37.3	32.5	36.3	37.0	41.8	39.2	42.3	46.3	44.3	40.3	34.2	-	
SRAN (17)(A)	445495	118237	39.7			31.4	27.4	31.5	31.2	33.2	29.5	38.4	41.0	37.1	-	-	-	Triplicate Site with SRAN(17)(A), SRAN(17)(B) and SRAN(17)(C) - Annual data provided for SRAN(17)(C) only
SRAN (17)(B)	445495	118237	43.0	31.0	36.4	32.4	23.6	30.2	30.9	33.6	28.9	37.4	38.7	38.0	-	-	-	Triplicate Site with SRAN(17)(A), SRAN(17)(B) and SRAN(17)(C) - Annual data provided for SRAN(17)(C) only
SRAN (17)(C)	445495	118237	41.4	31.8	36.8	31.0	27.3	29.7	32.0	33.8	29.8	37.6	40.0	38.5	34.0	28.9	-	Triplicate Site with SRAN(17)(A), SRAN(17)(B) and SRAN(17)(C) - Annual data provided for SRAN(17)(C) only
SSQ	443483	118612	31.9	24.9	24.6	20.9	18.7	14.9	18.9	20.1	20.3	25.7	28.0	29.2	23.2	19.7	-	
SWA	446170	114603	39.7	27.6	32.4	23.7	22.6	22.4	24.7	26.5	26.2	30.5	31.6	37.7	28.8	24.5	-	
TP(A)	445310	119148	30.4		28.6	22.0	19.1	18.1	20.2	22.4	21.9	24.3	26.9	24.7	-	-	-	Triplicate Site with TP(A), TP(B) and TP(C) - Annual data provided for TP(C) only
TP(B)	445310	119148	31.3	21.6	27.7	20.8	19.4	17.9	19.9	21.5	22.0	24.9	27.1	24.5	-	-	-	Triplicate Site with TP(A), TP(B) and TP(C) - Annual data provided for TP(C) only
TP(C)	445310	119148	30.1	22.8	28.5	21.1	19.1	17.8	20.1	22.3	18.0	24.0	25.9	26.0	23.2	19.7	-	Triplicate Site with TP(A), TP(B) and TP(C) - Annual data provided for TP(C) only

DT ID	X OS Grid Ref (Easting)	Y OS Grid Ref (Northing)	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual Mean: Raw Data	Annual Mean: Annualised and Bias Adjusted 0.85	Annual Mean: Distance Corrected to Nearest Exposure	Comment
TW	445739	119856	36.7		29.0	24.4	21.5		21.3	22.1	24.3	25.4	27.5	29.7	26.2	22.2	-	
UNC	448090	112635	25.7	24.3	19.0	19.2	19.3	19.7	16.8	18.6	19.3	23.3	28.1	28.8	21.8	18.6	-	
WA	444483	119443	39.2	31.6		25.7	25.2		26.8	28.3	29.0	31.5	37.5	37.8	31.3	26.6	-	
WYV	449577	118165	37.4	24.8	30.2	22.7	28.0	23.4	26.8	26.2		25.5	30.1	30.0	27.7	23.6	-	

- 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.
- Eastleigh Borough Council confirm that all 2022 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 Eastleigh Borough Council During 2022

Eastleigh Borough Council has not identified any new sources relating to air quality within the reporting year of 2022.

Additional Air Quality Works Undertaken by Eastleigh Borough Council During 2022

Eastleigh Borough Council has not completed any additional works within the reporting year of 2022.

QA/QC of Diffusion Tube Monitoring

All diffusion tubes for monitoring in 2022 were supplied by Gradko with a 20% TEA in water preparation method. Gradko holds UKAS accreditation for this analysis and also participated in four rounds of the AIR-PT laboratory proficiency testing scheme during 2022, with 100% of their results determined to be satisfactory¹¹.

All 2022 diffusion tube results reported were collected in adherence with the Diffusion Tube Monitoring Calendar.

Diffusion Tube Annualisation

Sites with below the required 75% data capture in 2022 were annualised in accordance with Box 7.10 of the LAQM.TG22. A small number of sites which were removed during the year recorded less than 25% data capture and final results have not been included for these. Annualisation calculations were carried out using the Diffusion Tube Data Processing Tool provided by DEFRA. Input NO₂ data was from AURN sites at

¹¹ [WASP – Annual Performance Criteria for NO₂ Diffusion Tubes \(defra.gov.uk\)](https://www.defra.gov.uk)

Bournemouth, Chilbolton Observatory and Portsmouth, these sites were chosen as those geographically closest which are classified as urban or rural background and had over 85% data capture for the period. Details of the annualisation process carried out are shown in Table C.1.

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

Site ID	Annualisation Factor Bournemouth	Annualisation Factor Chilbolton Observatory	Annualisation Factor Portsmouth	Average Annualisation Factor	Raw Data Annual Mean	Annualised Annual Mean
BR2	1.0575	1.0936	1.0783	1.0765	29.8	32.0
HCF	0.8238	0.8622	0.9420	0.8760	34.1	29.9

Diffusion Tube Bias Adjustment Factors

The diffusion tube data presented within the 2023 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.

Eastleigh Borough Council has applied a national bias adjustment factor of 0.85 to the 2022 monitoring data (Spreadsheet Version Number: 09/23), as it would be the most consistent over 5 year period. A summary of bias adjustment factors used by Eastleigh 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
2022	National	09/23	0.85
2021	National	06/23	0.84
2020	National	03/21	0.81
2019	National	03/20	0.93
2018	National	03/19	0.93

National Diffusion Tube Bias Adjustment Factor Spreadsheet						Spreadsheet Version Number: 09/23						
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 March 2024	
Data only apply to tubes exposed monthly and are not suitable for correcting individual short-term monitoring periods											LAQM Helpdesk Website	
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 shown in blue at the foot of the final column.						
If a laboratory is not shown, we have no data for this laboratory.		If a preparation method is not shown, we have no data for this method at this laboratory.		If a year is not shown, we have no data.		If you have your own co-location study then see footnote 1. If uncertain what to do then contact the Local Air Quality Management Helpdesk at LAQMHelpdesk@bureauveritas.com or 0800 0327953						
Analysed By ¹	Method	Year	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 ²	Bias Adjustment Factor (A) (Cm/Dm)		
Gradko	20% TEA in Water	2022	R	Dudley Mbc	11	42	38	10.5%	G	0.90		
Gradko	20% TEA in Water	2022	UB	Dudley Metropolitan Borough Council	12	21	15	38.1%	G	0.72		
Gradko	20% TEA in Water	2022	R	Nottingham City Council	9	32	36	-9.8%	G	1.11		
Gradko	20% TEA in Water	2022	R	Eastleigh Borough Council	12	23	22	7.8%	G	0.93		
Gradko	20% TEA in water	2022		Overall Factor (33 studies)					Use	0.85		

Table C.3 – Local Bias Adjustment Calculation

	Local Bias Adjustment Input 1	Local Bias Adjustment Input 2	Local Bias Adjustment Input 3
Periods used to calculate bias	3	5	12
Bias Factor A	0.81 (0.69 - 0.97)	0.96 (0.89 - 1.04)	0.93 (0.87 - 1)
Bias Factor B	24% (3% - 45%)	4% (-4% - 12%)	7% (0% - 15%)
Diffusion Tube Mean (µg/m ³)	33.6	22.9	23.2
Mean CV (Precision)	1.4%	3.7%	2.8%
Automatic Mean (µg/m ³)	27.1	22.1	21.6
Data Capture	98%	100%	99%
Adjusted Tube Mean (µg/m ³)	27 (23 - 33)	22 (20 - 24)	22 (20 - 23)

Notes:

A combined local bias adjustment factor of 0.9 has not been used to bias adjust the 2022 diffusion tube results.

NO₂ Fall-off with Distance from the Road

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

Table C.4 – 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
OH2	1.2	5.8	38.6	17.5	31.6	OH2
PH2	2.4	5.3	37.5	17.5	33.6	PH2
SR1	2.0	6.3	36.3	15.1	30.6	SR1

QA/QC of Automatic Monitoring

Air quality measurements from automatic instruments are validated and ratified to the standards described in LAQM.TG22. Automatic monitoring sites are visited fortnightly by a trained Council officer to calibrate the instrument reading against gas standards of a known concentration obtained from a certified supplier. A comprehensive service and maintenance contract is maintained with an external organisation which includes 6-monthly servicing of the analysers and emergency call-outs. Data presented in the ASR has been validated and ratified by Imperial College London's Environmental Research Group as part of a data management contract. This contract includes a website displaying live and historic data, at [Eastleigh My-Air](#), and annual site audits carried out by the National Physical Laboratory.

PM₁₀ and PM_{2.5} Monitoring Adjustment

Monitoring of PM₁₀ and PM_{2.5} has been carried out since February 2020 using a Fidas analyser, which does not require the application of a correction factor. Data validation and ratification, along with equipment maintenance and servicing, is also carried out for this analyser as detailed above.

Automatic Monitoring Annualisation

Due to ongoing faults data capture for instruments at Southampton Road and Steele Close were 35.2% and 46.7% respectively. Data from these sites was annualised in accordance with Box 7.9 of LAQM.TG22. Input NO₂ data was from AURN sites at Portsmouth, Chilbolton Observatory and Southampton Centre, these sites were chosen as those geographically closest which are classified as urban or rural background and had over 85% data capture for the period. Details of the annualisation process carried out are shown in Table C.4-C.6.

Due to <25% of data capture of 19.8% for PM₁₀ and PM_{2.5}, no annualisation was performed.

Table C.5: Automatic Stations Annualisation

Site ID	Raw Data Annual Mean	Period Data Capture (%)	Ratio (A _m /P _m)	Annualised Annual Mean
ES1	27.7	35.2	1.02	28.2
ES2	21.4	46.7	0.90	19.2

Table C.6 Southampton Road, ES1 annualisation

AURN Site	Annual mean, 2022 (A _m)	Period mean, 2022 (P _m)	Ratio (A _m /P _m)
Chilbolton Observatory	6.8	6.5	1.054
Portsmouth	14.9	15.2	0.981
Southampton Centre	23.9	23.5	1.018

Table C.7 Steele Close, ES2 annualisation

AURN Site	Annual mean, 2022 (A _m)	Period mean, 2022 (P _m)	Ratio (A _m /P _m)
Chilbolton Observatory	6.85	7.53	0.91
Portsmouth	14.9	16.6	0.90
Southampton Centre	23.9	26.8	0.89

NO₂ Fall-off with Distance from the Road

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

No automatic NO₂ monitoring locations within Eastleigh Borough required distance correction during 2022.

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

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

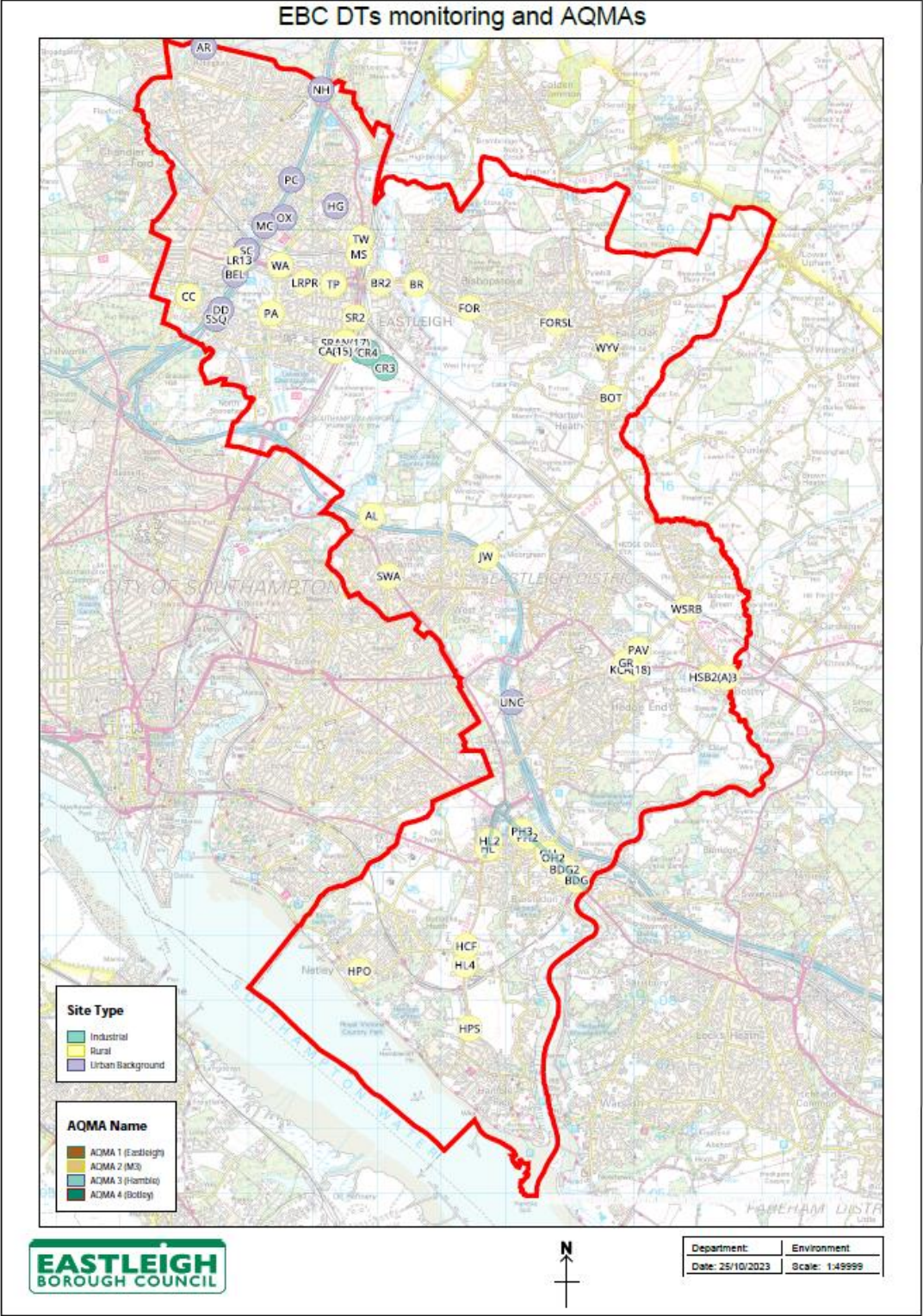


Figure D.2 – Map of Automatic, Non-Automatic Monitoring Site and AQMAs

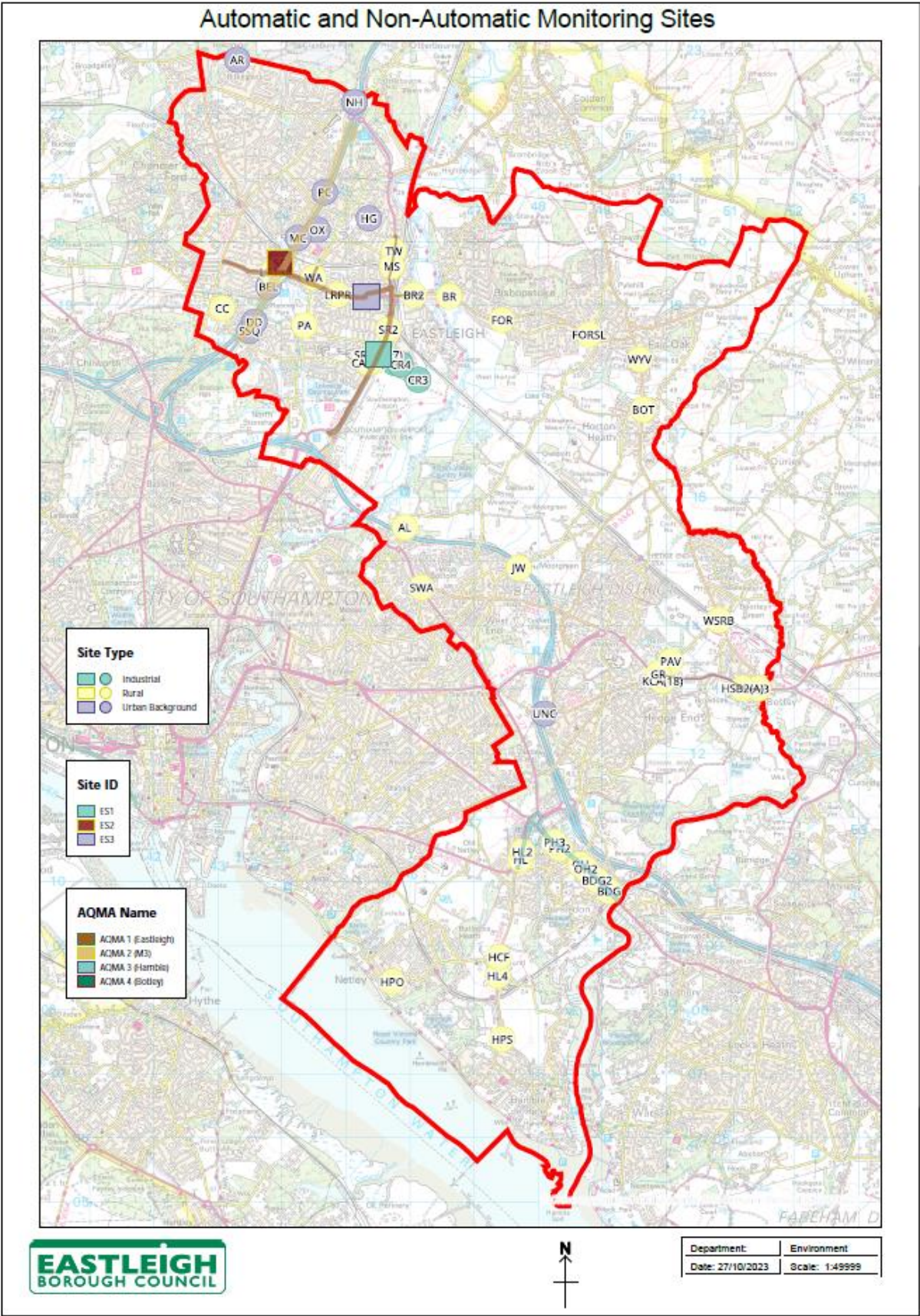


Figure D.3 – Eastleigh AQMA No.1 (A335) and diffusion tubes locations

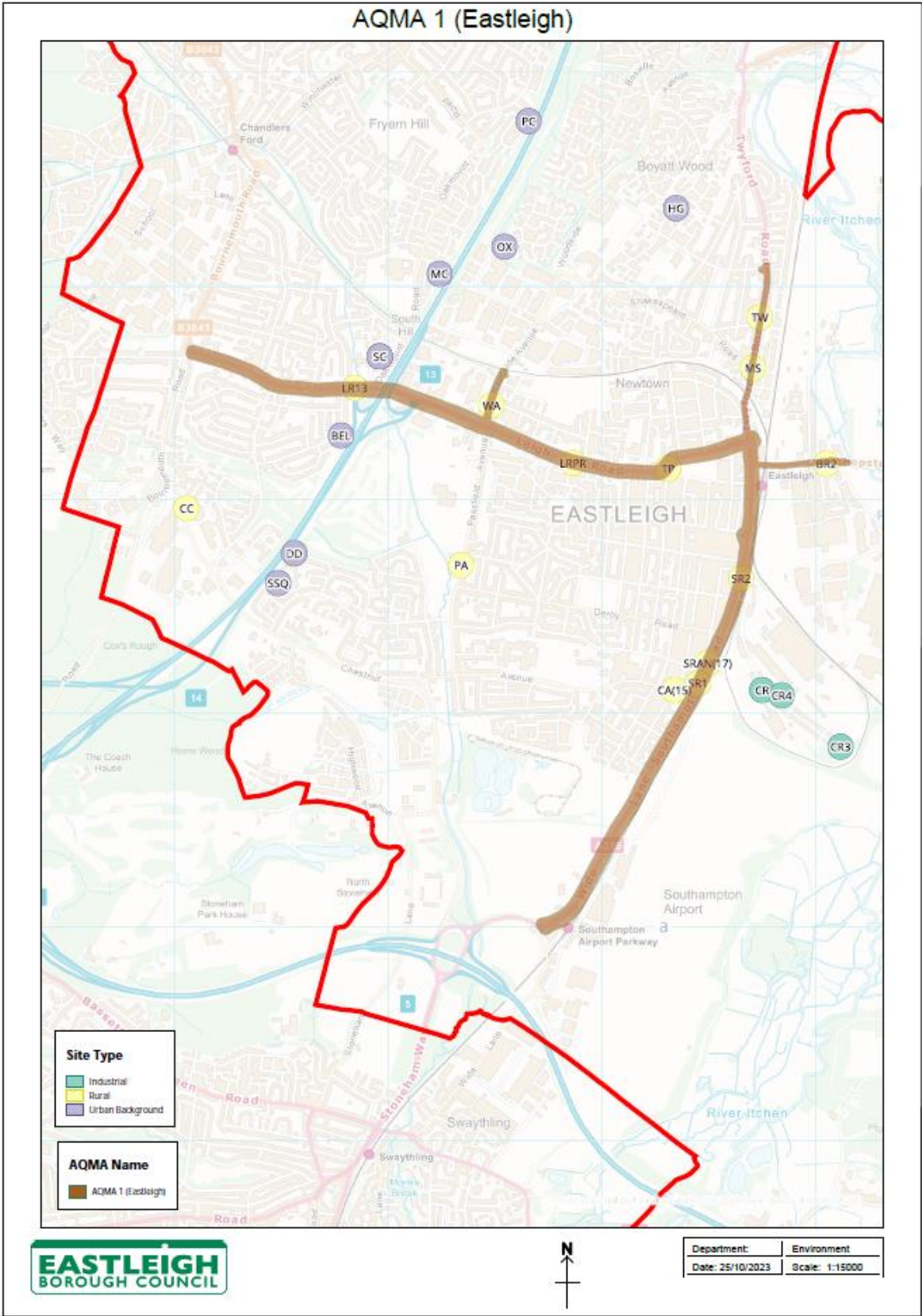


Figure D.4 – Eastleigh AQMA No. 2 (M3) and diffusion tubes locations

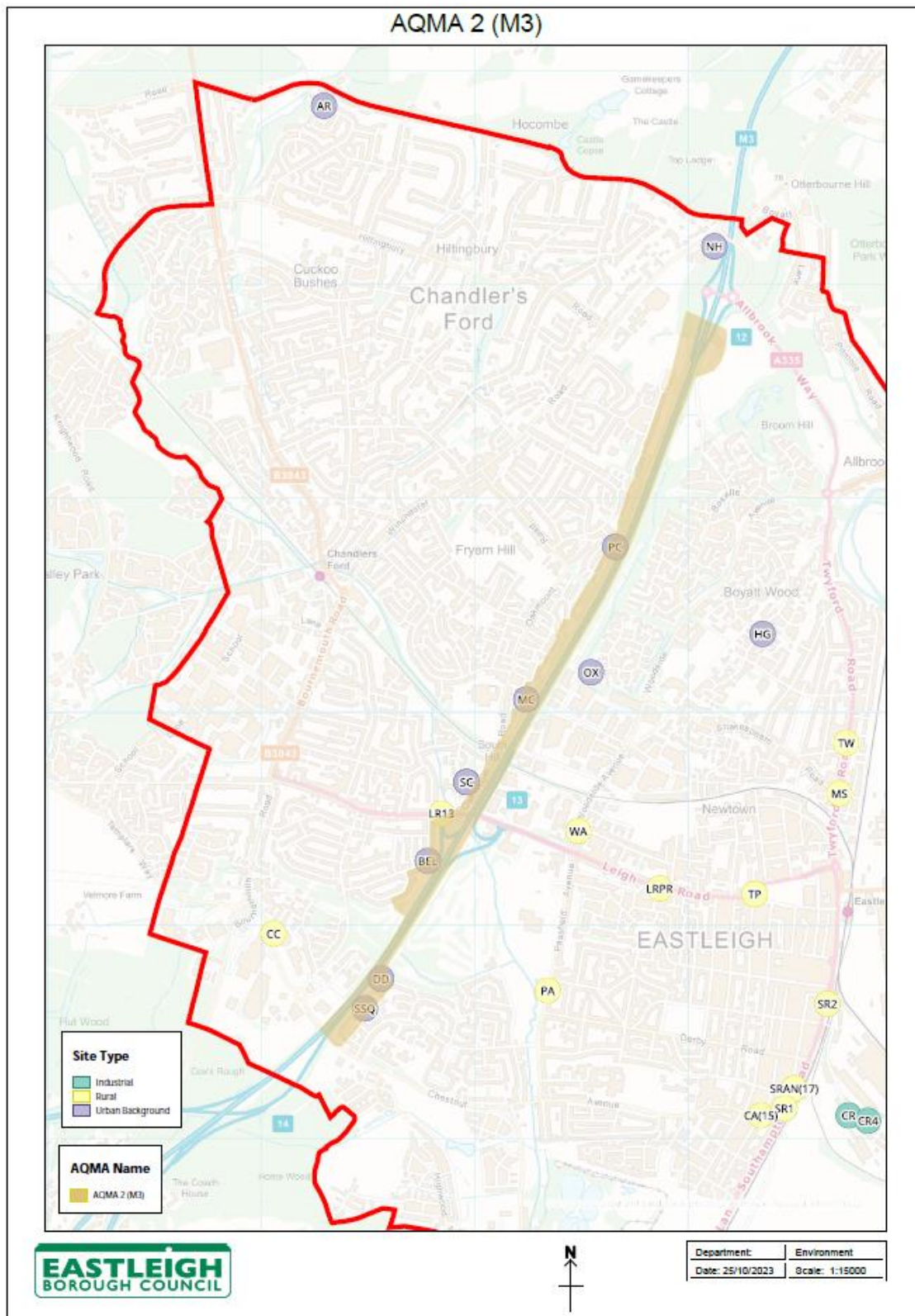


Figure D.5 – Hamble Lane Area AQMA No. 3 and Bursledon/Hamble north diffusion tube locations

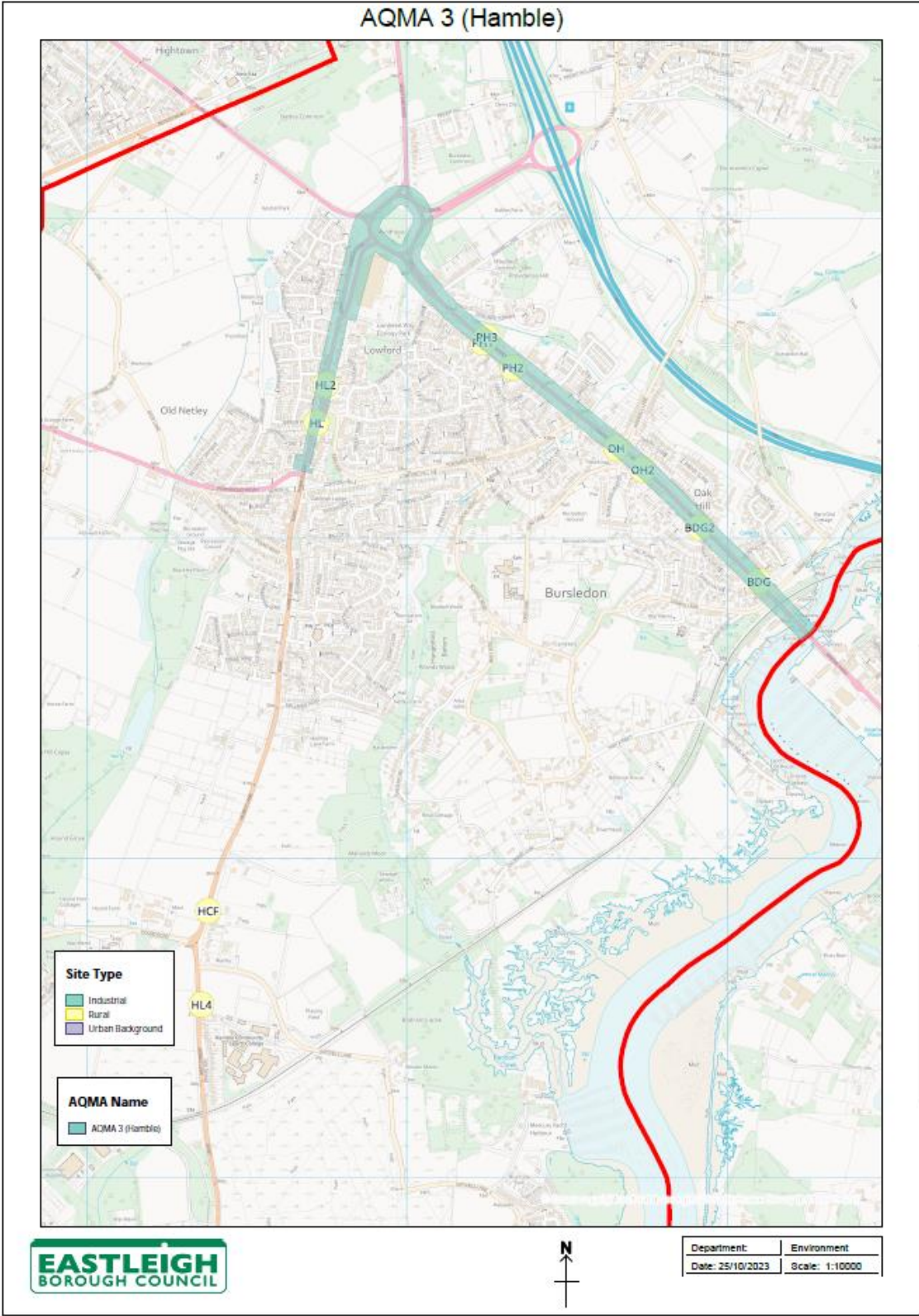
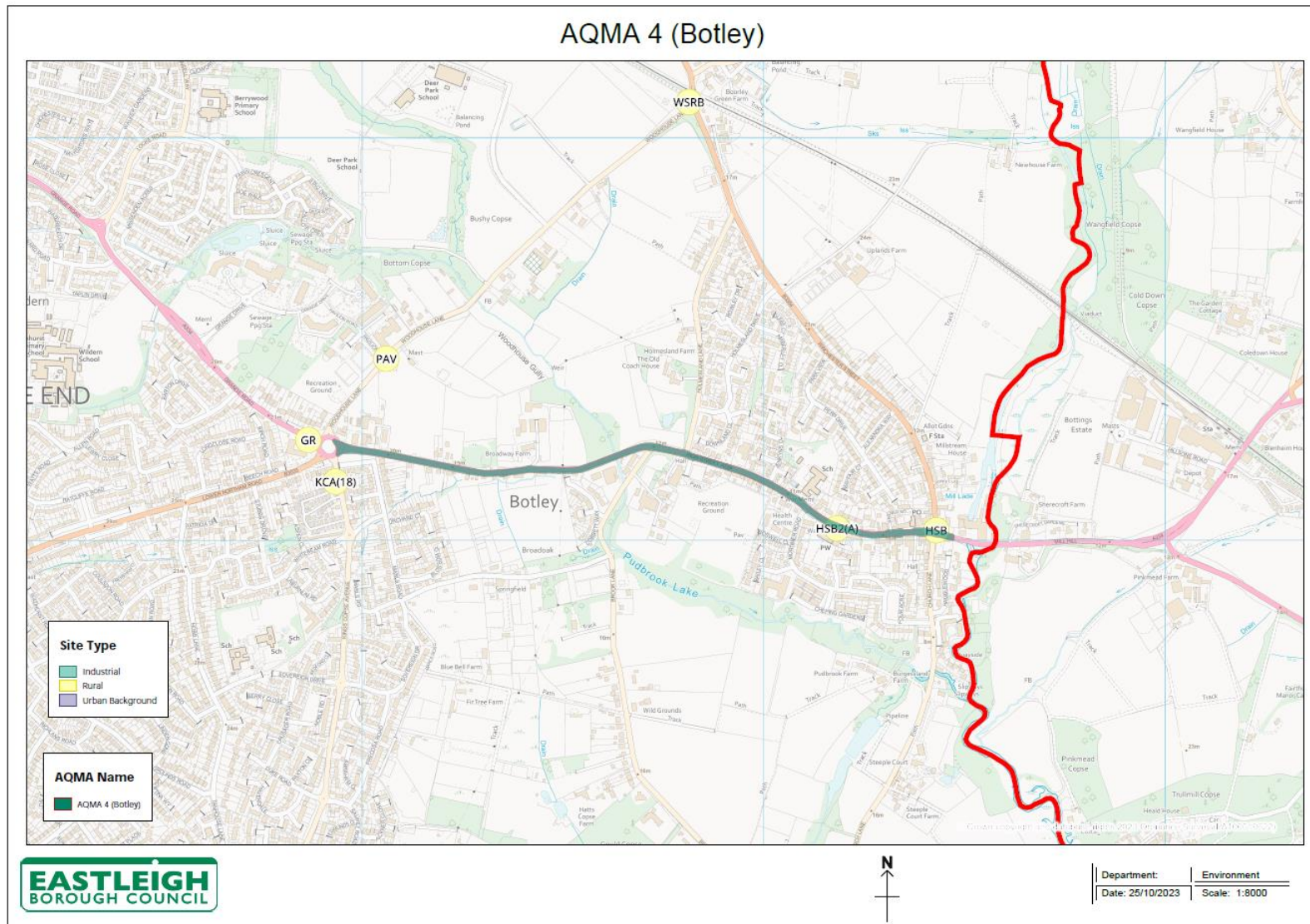


Figure D.6 – High Street Botley AQMA 4 and diffusion tube locations



Appendix E: Summary of Air Quality Objectives in England

Table E.1 – Air Quality Objectives in England¹²

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

¹² 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

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.