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: August 2023

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Executive Summary: Air Quality in Our Area

This 2023 report summarises the results of air pollutant monitoring undertaken by Braintree District Council as part as of its Local Air Quality Management role during 2022.

In total 24 diffusion tubes were placed around the district to assess nitrogen dioxide (NO_2) levels in 2022.

No exceedances of the air quality objective levels at locations of relevant exposure (i.e residential building facades) were determined and therefore no Air Quality Management Area has been confirmed.

As for previous years the highest measured pollutant levels were determined at Head Street/Colchester Road junction in Halstead. Braintree District Council will continue to monitor this location and liaise with the Highways Authority on any proactive improvements that might be made to reduce concentrations.

Improvements to air quality can also be achieved by behavioural and technological changes. Braintree District Council's Climate Change and cycling strategies supports both and implementation of key projects to encourage and support low emission travel and behaviour are detailed in Table 2.2 of the report.

There are always added challenges to reducing air pollution as new developments such as major housing developments and business projects within the district progress with potential to increase road traffic pollution but all are carefully assessed against the relevant air quality objective levels and designed to avoid exceedances at sensitive receptors.

Braintree District Council will proceed to prepare an Air Quality Strategy which integrates with its climate change strategy and the air pollutant reduction objectives and activities of other working partners such as Essex County Council Highways Authority.

Contact and comments from members of the public and businesses within the district and any other interested parties are welcomed on how Braintree District Council may improve or do better on reducing air pollution.

Air Quality in Braintree District

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 ages[3], with a total estimated healthcare cost to the NHS and social care of £157 million in 2017[4].

The main pollutant of concern that is monitored in Braintree District Council is nitrogen dioxide from road traffic sources. As shown in Appendix 1 pollutant levels are still below pre covid levels and this is in line with National Air quality statistics in the UK, 1987 to 2022 - Nitrogen dioxide (NO_2) which were updated 27 April 2023. No exceedances of the air quality objectives have been determined and the hot spot area in Halstead will continue to be monitored to assess against the short term objective level of 60µg/m^3 at pavement locations and the annual objective level of 40µg/m^3 at residential facades. This is discussed in section 3.2.1.

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.

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[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

The Environmental Improvement Plan[5] 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 reduce $PM_{2.5}$ in their areas. The Road to Zero[6] 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.

Currently Braintree District Council does not monitor particulate matter. It was not successful in a recent grant application to implement particulate monitoring and is examining how particulate monitoring may be introduced to obtain some reference data or indicative trends to determine reductions to support the UK Government's objectives of The Environmental Targets (Fine Particulate Matter) (England) Regulations 2023.

As a member of the Essex Air Quality consortium then Braintree District Council continues to work with other Essex local authorities and Essex County Council to drive forward good practice in AQ monitoring and implementation of action plans and quantifying improvements as in Table 2.2. The Essex Air website will be relaunched in 2023.

Braintree District Council states within its website Braintree District Council Annual Plan that it commits to -

Respond to the requirements of the Environmental Act 2021 in relation to air quality, biodiversity, water and waste reduction

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

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

Conclusions and Priorities

As all monitoring locations are showing NO_2 levels below the air quality objective of 40µg/m^3 (annual mean) at relevant receptors then there is no requirement to declare an AQMA. Braintree District Council will continue to monitor at the same location points in 2023 and will adjust and augment monitoring where an independent air monitoring review undertaken in 2022 recommends. The review is currently in progress of examination at senior officer level to progress to recommendations to councillors and therefore may not be reported currently.

Braintree District Council will continue to work with external partners such as other local authorities and communicate, promote discussion and sharing of knowledge between internal departments to maintain and promote good air quality and to fulfil the requirements of its ambitious Climate Change Braintree District Council Climate Change page and Cycling strategies Braintree District Council Cycling Strategy page . It will continue to maintain and progress other projects and controls as shown in Table 2.2 of this report. Strategies may be viewed at Braintree District Council website and the Essex Air website (essexair.org.uk) which is currently being redesigned to be launched later in 2023.

Local Engagement and How to get Involved

Braintree District Council would encourage members of the public to liaise with us where there are concerns about air quality. For new development this can be via the Planning section of the District Council and for any air quality related queries or suggestions to improve or promote good air quality and stakeholder engagement of the topic then please make contact

Go online and make a comment on our website at www.braintree.gov.uk

e-mail our Customer Service Centre at csc@braintree.gov.uk

Leave written comments at our main office - Causeway House, Braintree CM7 9HB

Telephone our Customer Service Centre on 01376 552525

Speak to your local Councillor who will be able to pass your comments on if you wish.

Local Responsibilities and Commitment

This ASR was prepared by the Public Health and Housing section of Braintree District Council with the support and agreement of the following officers:

Colin Batchelor – Environmental Health Manager

Josie Falco – Head of Environment

This ASR has not been signed off by a Director of Public Health at Essex County Council but a copy has been sent.

If you have any comments on this ASR please use the contact details previously given in the report on the previous page.

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1 Local Air Quality Management

This report provides an overview of air quality in Braintree District Council 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) setting out the measures it intends to put in place in order to achieve and maintain the objectives and the dates by which each measure will be carried out. This Annual Status Report (ASR) is an annual requirement showing the strategies employed by Braintree District 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.

Braintree District Council currently does not have any declared AQMAs. A local Air Quality Strategy is under development to prevent and reduce polluting activities and for the adoption of cleaner and sustainable forms of transport and heating.

2.2 Progress and Impact of Measures to address Air Quality in Braintree District

Defra's appraisal of last year's ASR concluded

On the basis of the evidence provided by the local authority the conclusions reached are accepted for all sources and pollutants. Following the completion of this report, BDC should submit an Annual Status Report in 2023 and draw up an Air Quality Strategy.

The local Air Quality Strategy requirement aims to encourage local authority prevention and reduction of polluting activities in preference to only taking steps to reduce air pollution once exceedances have been identified.

Braintree District Council has taken forward a number of direct measures during the current reporting year of 2022 in pursuit of improving local air quality. This includes regulatory work under the Environmental Protection Act in connection with regulation of permitted processes and investigation of smoke nuisance, dust and odour complaints.

The requirement for construction management plans on construction sites which require dust management and air pollution controls are actively enforced by the planning enforcement section and construction may not commence without the documents being approved.

Through its cycling strategy and climate strategy and also health education then low emission travel is promoted

Details of all measures completed, in progress or planned are set out in Table 2.1. measures are included within Table 2.1, with the type of measure and the progress Braintree District Council has 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 2.1.

Braintree District Council's priorities for the coming year are to produce an Air Quality Strategy informed by the Air Quality Review which took place in late 2022 (details still to be approved at Management Board/ Councillor level), maintain ongoing measures within Table 2.1 which complement Braintree's Climate Change and cycling strategies.

Table 2.1 – Progress on Measures to Improve Air Quality

No.	Measure	Category	Classification	Year	Completion Year	Organisation invoved	Funding Source	Defra Grant Fund	Fund status	Est. Cost	Measure Status	Reduction In Pollutant/ Emission from measure	KPI	Progress to date	Comments or barriers to implementation
1	Planning considerations specific to AQ impact assessment and mitigation (e.g provision of EV charging points and measures/site design to offset adverse impact)	Policy Guidance and Development Control	Air Quality Planning and Policy Guidance	2021	ongoing	Local Authority Planning.	Local Authority	NO	n/a	n/a	Implementation	No AQMA – not quantified	n/a	Implemented through local planning and transport cooperation.	None
2	Provision of air impact assessment and mitigation for construction and demolition stage by developers	Policy Guidance and Development Control	Air Quality Planning and Policy Guidance	ongoing	ongoing	Local Authority Planning/Environmental Health.	Local Authority	NO	Funded	n/a	Implementation	No AQMA – not quantified	n/a	Climate annual action plan to reinforce this	none
3	Provision of travel plans through planning process	Alternatives to private vehicle use	Other	ongoing	ongoing	Local Authority Environmental Health, Local Authority Transport Dept.	Local Authority	NO	Funded	n/a	Implementation	No AQMA – not quantified	n/a	Implemented through local planning and transport cooperation	none

4	Enforcement and inspection of polluting industry and emissions to air through environmental permitting and statutory nuisance legislation	Environmental Permits	Other measure through permit systems and economic instruments	Historical legislation	ongoing	Local Authority Environmental Health	Local Authority	NO	Funded	Statutory function	Implementation	No AQMA – not quantified	n/a	Actively enforced	none
5	Biomass/combustion chimney height assessments	Environmental Permits	Other measure through permit systems and economic instruments	Historical legislation	ongoing	Local Authority Environmental Health	Local Authority	NO	Funded	statutory function	Implementation	No AQMA – not quantified	n/a	Actively enforced	none
6	Implementation of climate change strategy	Policy Guidance and Development Control	Low Emissions Strategy	2021	2030	local authority	Local Authority	NO	Partially Funded	n/a	Implementation	No AQMA – not quantified	n/a	Climate Change Strategy adopted in 2021 and Action plan released Climate change officer funded and in post to promote initiatives and implement measures 2ithin the action plan	
7	Live well campaign	Alternatives to private vehicle use	Other	2017	ongoing	Local authority	Local Authority	NO	Funded	n/a	Implementation	No AQMA – not quantified	n/a	Actively promoted walking/cycling for health since 2017 now being promoted through BDC Climate Change and cycling strategies	Public hesitancy to adopt different lifestyle
8	“Routine attendance of Essex Air Quality Consortiumderivation of Essex wide policy	Policy Guidance and Development Control	Regional Groups Co-ordinating programmes to develop Area wide Strategies to reduce emissions and improve air quality	1999	ongoing	Local Authority Environmental Health	Local Authority	NO	Funded	n/a	Implementation	No AQMA – not quantified	n/a	Held every three months	Have continued as virtual meetings

9	Adopted road traffic act powers to require switching off of engines	Traffic Management	Anti-idling enforcement	Historical legislation	ongoing	Local authority Environmental Health	Local Authority	NO	Funded	n/a	Implementation	No AQMA – not quantified	n/a	Legislation useful as an education tool	supported by Climate Change Action plan
10	Review of Licensing Policies to create greener fleet of taxis in The District	Promoting Low Emission Transport	Taxi Licensing conditions	2021	ongoing	Local Authority Licensing	Local Authority	NO	Funded	n/a	Implementation	No AQMA – not quantified	n/a	Implementation on-going	supported by Climate Change Action plan
11	Encouraging staff to use lower emission vehicles through leased car and cycle schemes	Promoting Low Emission Transport	Company Vehicle Procurement - Prioritising uptake of low emission vehicles	2012	ongoing	Local Authority	Local Authority	NO	Part Funded	n/a	Implementation	No AQMA – not quantified	n/a	Option existed for a number of years, 87 bicycles supplied	Lower take up as cheaper/more flexible alternatives to the scheme Climate Change action Plan – continue to research and evaluate ultra-low emission alternatives for the Council's fleet of vehicles - ~~££££~~ ion costs
12	The Council will continue to promote alternatives to domestic bonfires and responsible waste management.	Public Information	Other		ongoing	Local Authority	Local Authority	NO	Funded	n/a	Implementation	No AQMA – not quantified	n/a	Implementation on-going as opportunities arise -offers a green waste kerb collection	
13	Climate change Strategy	Other	Other	2019	ongoing	Local Authority	Local Authority	NO	Funded		Completed	No AQMA – not quantified	n/a	linked to climate change strategy process	Climate change strategy and action plan for BDC produced and initiatives being implemented
14	School travel plans	Promoting Travel Alternatives	Other		ongoing	Local Authority both Tiers	Local Authority	NO	Funded	n/a	Implementation	No AQMA – not quantified	n/a	Implementation with cooperation from ECC	
15	Cycling strategy	Promoting Travel Alternatives	Promotion of cycling	2020	ongoing	Local Authority	Local Authority	NO	Funded	n/a	Planning	No AQMA – not quantified	n/a	Strategy adopted	Signage , speed limits revised in town centre areas (particularly Braintree) to promote cycling.

16	Public electric charging points in all BDC owned car parks and nnuali ECC to increase electric charging infrastructure on streets	Promoting Low Emission Transport	Procuring alternative Refuelling infrastructure to promote Low Emission Vehicles, EV recharging, Gas fuel recharging	2016	ongoing	Local Authority	OLEV	NO	Funded	£100k - £500k	Implementation	No AQMA – not quantified	n/a	additional 16 charging points at 4 locations in 2021 in addition to 7 existing sites owned by BDC	UK's first electric forecourt in full operation after opening in December 2020
17	Independent review of current Air Quality Monitoring	Policy Guidance and Development Control	Air Quality Planning and Policy Guidance	2021	2022	Local Authority	Local Authority	NO	Funded	£10k - 50k	Implementation	No AQMA - not quantified	n/a	Air Quality monitoring review in progress by reputable air quality consultants and will be reported on in on 2022	This may not be reported on until it has been reviewed by Councillors
18	Climate change Action - installing solar panels on its existing estate and any new buildings	Promoting Low Emission Plant	Shift to installations using low emission fuels for stationary and mobile sources	2021	ongoing	Local Authority	Local Authority	NO	Funded	Info not available	Implementation	No AQMA - not quantified	n/a	current total of 0.5MW	
19	Climate Change Action - boiler replacements including from solid fuel boilers to A rated boilers	Promoting Low Emission Plant	Shift to installations using low emission fuels for stationary and mobile sources	2021	ongoing	Local Authority	Eco/Green Homes Grants	NO	Funded	Info not available	Implementation	No AQMA - not quantified	n/a	Implementation ongoing	Will review as to other alternative fuel/ equipment types as the technology/costs allows
20	Climate Change Action - facilitating schemes for reduced gas/oil use such as Air source heat pumps	Promoting Low Emission Plant	Shift to installations using low emission fuels for stationary and mobile sources	2021	ongoing	Local Authority	Grant schemes	NO	Funded	Info not available	Implementation	No AQMA - not quantified	n/a	Implementation ongoing	
21	Climate Change Action - developed its I-Construct flagship building to provide an exemplar of sustainable development and encourage developers to build to high sustainable standards.	Promoting Low Emission Plant	Shift to installations using low emission fuels for stationary and mobile sources	2021	ongoing	Local Authority		NO	Funded	Info not available	Completed	No AQMA - not quantified	n/a	Complete	Provides an example of sustainable development and encourages developers to build to high sustainable standards

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.

LAQM-TG22-August-22-v1.0 provides guidance on *Local Action to Reduce $PM_{2.5}$*

2.83 For the effective targeting of local action to help reduce $PM_{2.5}$ concentrations, it is important to first understand the source apportionment to total $PM_{2.5}$. Although this will vary by location, and it is acknowledged that there will be limited local $PM_{2.5}$ source apportionment studies (if any), consideration should be given to taking action that will address $PM_{2.5}$ associated with the following:

• *Primary $PM_{2.5}$ Sources (approximately 50% of UK total)35 . Comprising man made emissions from combustion (industrial processes and road traffic exhausts) and non-combustion processes (e.g. fugitive emissions from agricultural and industrial material handling; non-exhaust emissions from vehicles - tyre and brake wear, and road abrasion);*

and • *Secondary $PM_{2.5}$ Sources (approximately 50% of UK total)35 . Not all of the particulate matter found in the atmosphere has been directly emitted into the atmosphere by man-made sources. Secondary $PM_{2.5}$ is formed by natural and transboundary sources.*

2.84 To assist local authorities, the Action Toolbox of AQAP measures provided in ' LAQM Action Toolbox' and measures available on the Air Quality Hub indicate the measures that will likely be beneficial to reducing $PM_{2.5}$ levels (in addition to other pollutants).

Local authorities may already be implementing some of these measures to address other pollutants such as PM_{10} and NOx. Local authorities should therefore review any existing measures already currently being implemented to determine whether they are already taking positive action to reduce $PM_{2.5}$ emissions;

Such measures might include

1) assessment of bus fleet operating in local area and improvements to exhaust systems/updating fleet (BDC will assess this over 2023)
2) car sharing schemes (promotion of essexcarshare.com which is an essex wide scheme already active)
3) development planning (building in sustainable/active travel/heat sources) – this is done as a standard procedure within development planning but can be quantified the 2023 report
4) promoting active travel –(aside from point 3) through cycling strategy of Braintree District Council involves liaison with Essex Highways Authority to increase the cycle lane network/routes.(detail of initiatives will be reported in 2023)
5) liaising with transport intensive businesses (Braintree District Council has a number of industrial estates within its area and will consider means of improving liaison). BDC has added six Euro 6 vehicles to its own fleet to replace older refuse vehicles and has rechargeable electric bin lifts to reduce overall combustion emissions.
6) Anti idling education campaign outside schools (Essex Council Council has carried out a campaign during 2022 in a number of schools in Essex to educate and promote behavioural change).

Through actions like those given above and those within Table 2.2 to address NO_2 and PM_{10} from vehicle emissions then this will lead to some reduction in $PM_{2.5}$.

For other sources such as burning, construction sites and industrial processes then localised enforcement by Braintree District Council through statutory nuisance, environmental permitting, smoke and waste control regimes seeks to prevent emissions at source.

It is also appropriate to note that the National Local Air Quality Technical guidance (TG 16 paragraph 2.57) states that it is estimated that as much as 40% to 50% of the $PM_{2.5}$ levels found in any given area can be from sources outside a local authority's direct boundary and Braintree District Council recognises that reduction in air pollutants is a proactive requirement alongside Climate change and other environmental initiatives.

The Public Health Outcomes Framework introduced a $PM_{2.5}$ indicator "fraction of adult mortality attributed to particulate air pollution'. In the last reported period (2021) the information for Braintree as shown below indicates that the level is 5.39%. This is comparable to the East of England region average of 5.47% and England at 5.50% as

found at Public Health Outcomes Framework at the gov.uk website and as shown in graphical form below in Fig 2.1 against the England data.

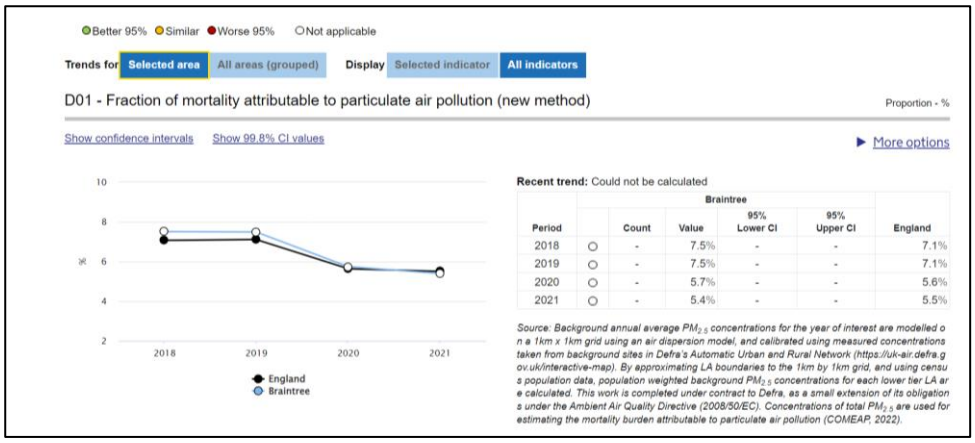


Fig 2.1 The Public Health Outcomes Framework – $PM_{2.5}$ indicator "fraction of adult mortality attributed to particulate air pollution.

During 2021 then the indicator would be influenced by behavioural changes in vehicle use and COVID measures in place such as mask wearing and restrictions on movement.

From the Defra Background Mapping Resource the maximum background annual mean PM2.5 concentration is 11.5 µg/m3. Of the 617 grid square (1km) for the district referenced to 2022 then two are greater than 11 µg/m^3, seven are greater than 10 µg/m^3 and the rest range from 8.5 to 10 µg/m^3.

Braintree District Council does not have any smoke control areas within its district and as in previous years will continue to limit particulate emissions through industrial process regulation, waste enforcement, prevention of burning through education and waste enforcement and statutory nuisance investigations and restrictions on planning consents during site clearance and construction processes.

Sustainable travel and reduction of congestion is promoted through the planning process and local Highways Panels which can also reduce emissions from brakes and tyres.

Braintree District Council will continue to review air quality and focus on reducing and preventing air pollution (including $PM_{2.5}$) through the planning regime, air pollution and regulatory control, traffic management with Highways assistance and various local initiatives to promote behavioural change shown in Table 2.1

The air quality monitoring review to be produced in 2023 will inform Braintree District Council's $PM_{2.5}$ monitoring strategy.

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

This section sets out the monitoring undertaken within 2022 by Braintree District 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 Non-Automatic Monitoring Sites

Braintree District Council undertook non- automatic (i.e. passive) monitoring of NO_2 at 20 sites during 2022. Table A.1 in Appendix A presents the details of the non-automatic sites.

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

3.2 Individual Pollutants

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

3.2.1 Nitrogen Dioxide (NO_2)

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

For diffusion tubes, the full 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.

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

For diffusion tubes, the full 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.

No exceedances of the air quality objective for NO_2 has been determined for both annual mean(40µg/m^3) and 1-hour (200µg/m^3) objectives. For the pavement/kerbside site at BR14 (11 Head street) there are commercial premises immediate to the site so the annual mean objective does not apply as there is no relevant residential receptor. As the monitored concentration on the pavement is not greater than 60µg/m^3, which would indicate an exceedance of the 1-hour mean then there is also no predicted exceedance of the 1 hour (200µg/m^3) objective .

Figures A1a to A1d show trend charts of concentrations over five years where the data is available for various site in the Braintree District area. Whilst sites show a downward trend over 5 years with depressed readings in 2020 due to the pandemic travel restrictions there is a worrying increase in 2022 as traffic levels may be increasing to towards pre pandemic levels.

Appendix A: Monitoring Results

Table A.1 – Details of Non-Automatic Monitoring Sites

Diffusion Tube ID	Site Name	Site Type	X OS Grid Ref (Easting)	Y OS Grid Ref (Northing)	Pollutants Monitored	In AQMA? Which AQMA?	Distance to Relevant Exposure (m) (1)	Distance to kerb of nearest road (m) (2)	Tube Co-located with a Continuous Analyser?	Tube Height (m)
BR1	Blandford House Braintree	Roadside	575600	222900	NO2	No	6.0	1.2	No	2.0
BR3	A12 Foxden Rivenhall	Roadside	583859	216497	NO2	No	19.0	2.0	No	1.8
BR4	Beckers Green Road Braintree	Urban Background	577800	222500	NO2	No	12.2	8.3	No	2.0
BR5	Chipping Hill Witham	Roadside	582002	215111	NO2	No	7.0	2.0	No	1.9
BR6	Victoria Street Braintree	Roadside	576204	222958	NO2	No	4.0	2.0	No	2.0
BR7	Stilemans Wood Braintree	Roadside	577680	221964	NO2	No	20.0	9.0	No	1.8
BR9	A12 Rivenhall Hotel	Roadside	583891	216467	NO2	No	10.0	1.5	No	1.8
BR11	High St Kelvedon	Roadside	586386	219106	NO2	No	0.0	3.5	No	1.9

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)
BR12	A120 The Swan Bradwell	Roadside	580625	223115	NO2	No	11.7	2.9	No	1.8
BR13	Bridge Street Witham	Roadside	581851	214151	NO2	No	0.0	1.0	No	1.9
BR14, NC1, NC2	Head Street Halstead	Kerbside	581542	230738	NO2	No	N/A	0.7	No	1.9
BR16, NC3, NC4	Corner of Head St/Sudbury Road Halstead	Roadside	581564	230742	NO2	No	1.4	1.0	No	1.9
BR17	Oswicks Head St Halstead	Kerbside	581530	230731	NO2	No	N/A	1.0	No	1.9
BR18	Hedingham Road Halstead	Kerbside	581471	230711	NO2	No	N/A	0.5	No	1.9
BR20	33 Head Street Halstead	Roadside	581586	230775	NO2	No	0.0	2.3	No	1.9
BR21	Collingwood Road Witham	Roadside	582143	214630	NO2	No	1.0	2.6	No	1.9
BR22	60 Avenue Road Witham	Roadside	582033	215081	NO2	No	0.0	8.7	No	1.8
BR24	14 St Michaels Road Braintree	Roadside	575611	222892	NO2	No	0.0	5.0	No	1.9

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)
BR25	Corner Maldon Road/The St Hat Pev	Roadside	579402	211916	NO2	No	6.0	3.0	No	1.9
BR26	The Street Hat Pev	Roadside	578823	211654	NO2	No	0.0	3.0	No	1.8

Notes:

(1) 0m if the monitoring site is at a location of exposure (e.g. installed on the façade of a residential property).

(2) N/A if not applicable.

Table A.2 – Annual Mean NO_2 Monitoring Results: Non-Automatic Monitoring (µg/m^3)

Diffusion Tube ID	X OS Grid Ref (Easting)	Y OS Grid Ref (Northing)	Site Type	Valid Data Capture for Monitoring Period (%) [1]	Valid Data Capture 2022 (%) [2]	2018	2019	2020	2021	2022
BR1	575600	222900	Roadside	100	100.0	28.2	29.4	23.6	23.0	22.1
BR3	583859	216497	Roadside	100	100.0	**46.1**	**45.8**	37.2	33.8	33.6
BR4	577800	222500	Urban Background	100	100.0	16.2	16.6	12.7	13.3	13.3
BR5	582002	215111	Roadside	100	92.3	**40.4**	39.1	32.3	30.9	33.2
BR6	576204	222958	Roadside	100	100.0	22.9	21.4	16.9	18.5	17.6
BR7	577680	221964	Roadside	100	100.0	29.2	27.8	21.5	19.5	24.7
BR9	583891	216467	Roadside	100	100.0	**40.7**	35.5	26.6	27.9	33.6
BR11	586386	219106	Roadside	100	100.0	23.1	22.1	17.2	18.0	19.9
BR12	580625	223115	Roadside	100	100.0	25.9	27.3	20.9	22.0	22.0
BR13	581851	214151	Roadside	100	100.0	33.0	32.9	28.2	26.3	30.1

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
BR14, NC1, NC2	581542	230738	Kerbside	100	100.0	**59.9**	**56.8**	**47.6**	**45.0**	**49.1**
BR16, NC3, NC4	581564	230742	Roadside	100	100.0		**44.1**	35.2	36.3	39.3
BR17	581530	230731	Kerbside	100	92.3		**42.3**	32.6	33.6	36.5
BR18	581471	230711	Kerbside	100	100.0		33.0	24.1	27.3	28.0
BR20	581586	230775	Roadside	100	100.0		37.5	30.6	31.7	34.5
BR21	582143	214630	Roadside	100	100.0		28.2	20.0	24.1	22.3
BR22	582033	215081	Roadside	100	82.7		24.0	19.5	18.9	20.6
BR24	575611	222892	Roadside	100	100.0				25.0	21.3
BR25	579402	211916	Roadside	100	84.6				28.0	24.7
BR26	578823	211654	Roadside	100	92.3				27.8	26.1

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

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

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

Notes:

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

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

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

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

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

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

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

Figure A.1 – Trends in Annual Mean NO_2 Concentrations

Fig A.1 a Diffusion tube results for years 2018 to 2022 years for Braintree town sites BR1 BR4 BR6 and BR7

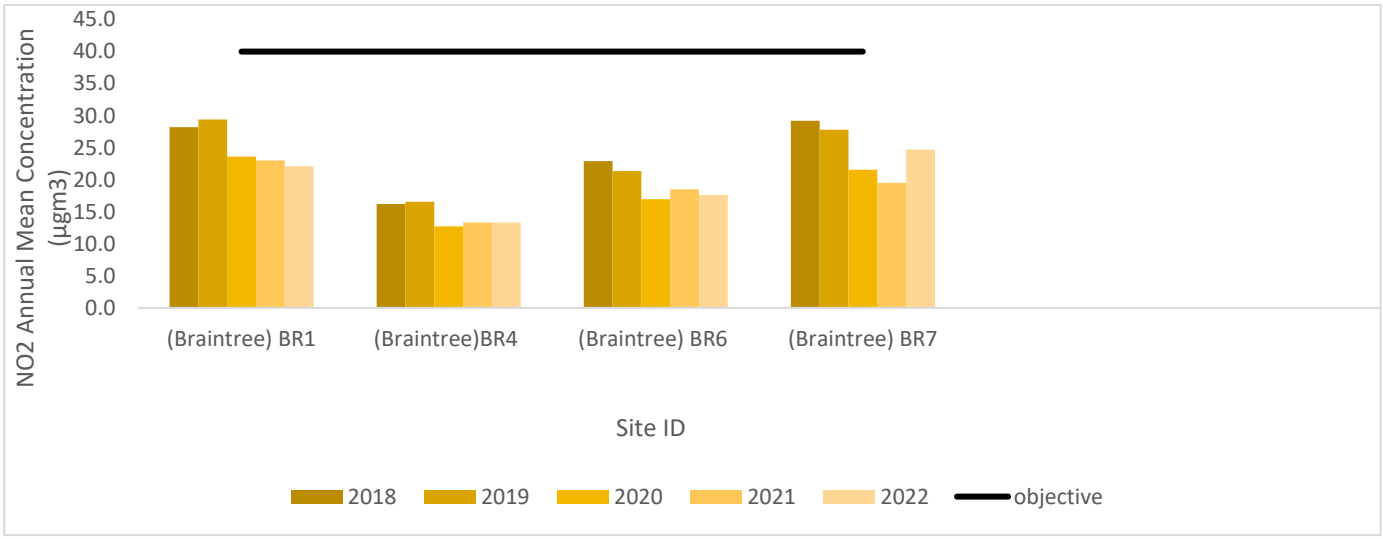


Fig A.1 b Diffusion tube results for years 2018 to 2022 years for Witham sites BR5 BR13 BR21 and BR22

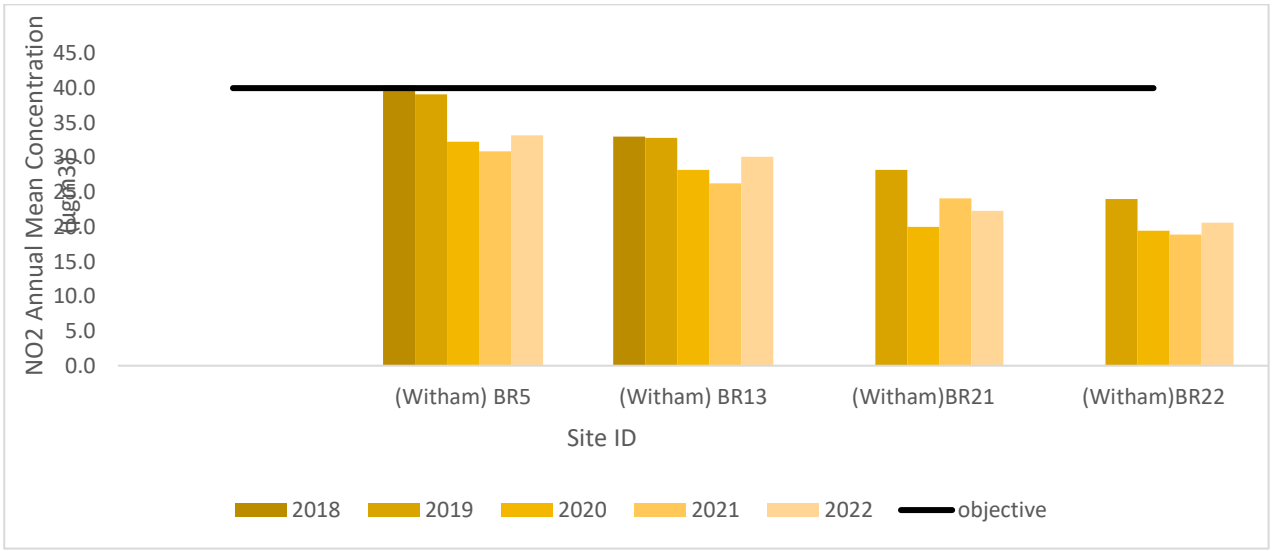


Fig A.1c Diffusion tube results for years 2018 to 2022 years for Halstead sites BR14 BR16 BR18 and BR20

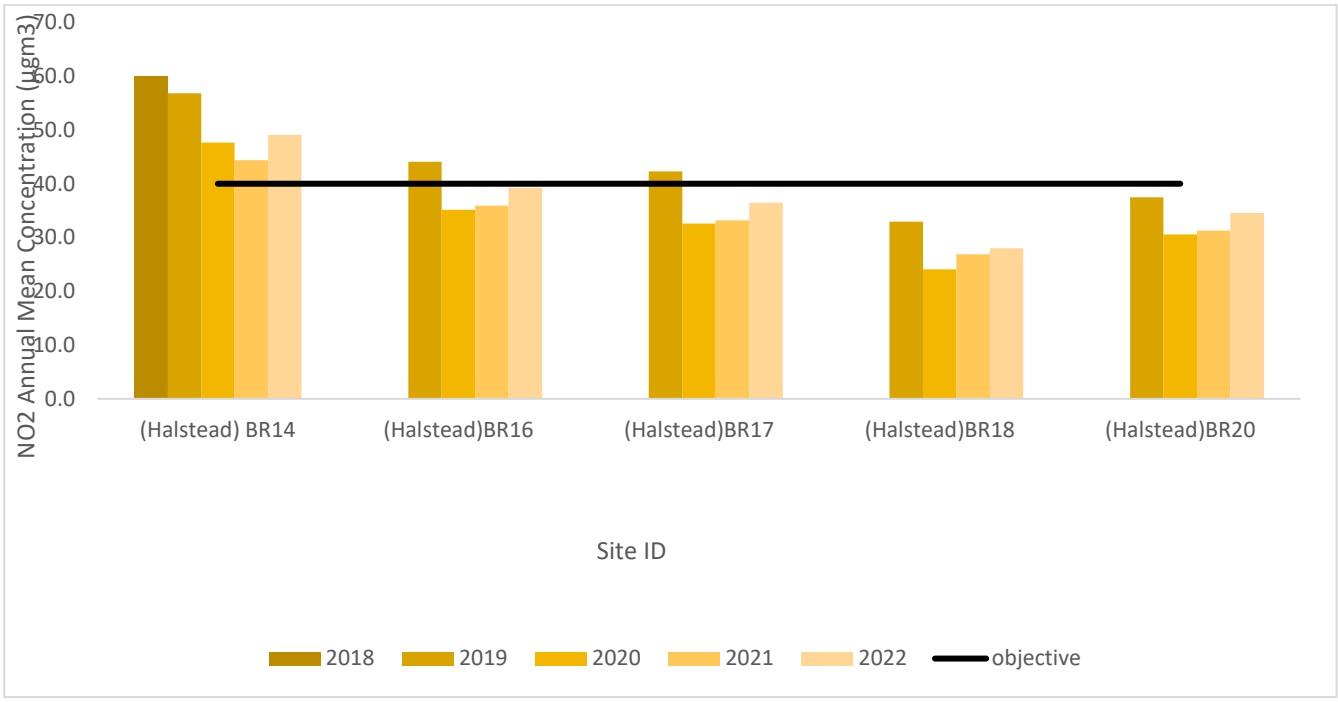
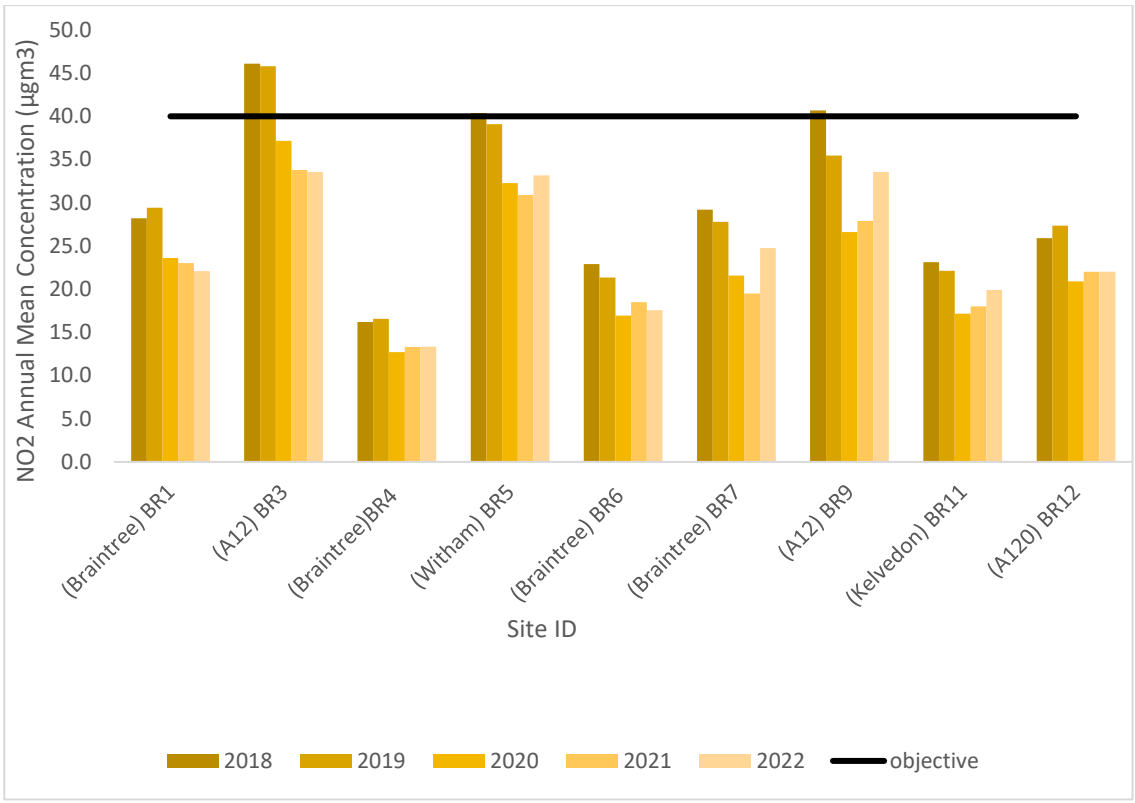


Fig A.1d Diffusion tube results for years 2018 to 2022 years for other sites not within previous trend types



Appendix B: Full Monthly Diffusion Tube Results for 2022

Table B.1 – NO_2 2022 Diffusion Tube Results ($\mu g/m^3$)

DT ID	X OS Grid Ref (Easting)	Y OS Grid Ref (Northing)	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual Mean: Raw Data	Annual Mean: Annualised and Bias Adjusted <(x.x)>	Annual Mean: Distance Corrected to Nearest Exposure	Comment
BR1	575600	222900	43.6	32.3	32.6	29.0	22.3	22.5	21.3	25.2	27.3	28.7	31.5	32.6	29.1	22.1	-	
BR3	583859	216497	44.5	52.4	52.7	35.2	42.7	45.2	40.1	41.3	30.8	50.5	52.9	42.0	44.2	33.6	-	
BR4	577800	222500	29.3	18.3	25.2	15.1	12.4	11.6	11.6	13.0	13.7	18.6	20.8	21.1	17.6	13.3	-	
BR5	582002	215111		45.2	44.9	35.2	42.5	41.4	39.0	42.2	46.8	47.1	47.9	47.7	43.6	33.2	-	
BR6	576204	222958	34.4	24.4	32.5	20.7	16.4	16.7	18.5	17.6	17.7	24.4	27.4	26.8	23.1	17.6	-	
BR7	577680	221964	38.6	34.1	36.6	22.9	30.8	32.3	30.3	27.8	27.6	39.0	37.4	33.3	32.6	24.7	-	
BR9	583891	216467	44.5	52.4	52.7	35.2	42.7	45.2	40.1	41.3	30.8	50.5	52.9	42.0	44.2	33.6	-	

BR11	586386	219106	39.5	26.6	36.7	25.2	20.9	17.8	19.1	25.7	22.0	25.0	27.3	28.6	26.2	19.9	-	
BR12	580625	223115	42.5	24.3	37.1	19.8	24.3	26.8	25.7	31.5	29.9	25.2	29.6	30.8	29.0	22.0	-	
BR13	581851	214151	44.0	37.1	50.0	39.5	34.9	32.7	39.8	45.3	35.9	41.0	37.1	38.3	39.6	30.1	-	
BR14	581542	230738	83.7	59.6	74.4	65.4	63.0	56.7	62.8	69.4	67.6	54.1	69.2	49.8	-	-	-	Comment 1
NC1	581542	230738	81.8	64.2	58.5	62.5	60.6	62.2	66.1	67.2	66.6	67.0	66.7	62.9	-	-	-	Comment 1
NC2	581542	230738	71.1	57.8	69.7	65.0	63.2	57.4	66.5	67.8	66.2	67.7	66.9	42.2	64.5	**49.1**	-	Comment 1
BR16	581564	230742	50.9	46.4	30.4	49.3	44.9	51.6	46.6	54.0	48.7	51.9	48.7	46.7	-	-	-	Comment 2
NC3	581564	230742	56.6	47.6	66.8	50.7	46.5	52.1	51.2	56.9	50.0	49.5	56.7	42.2	-	-	-	Comment 2
NC4	581564	230742	54.0	50.6	68.9	48.2	47.3	83.7	48.6	55.2	48.0	56.2	57.9	43.9	51.7	39.3	34.0	Comment 2
BR17	581530	230731	57.7		60.0	47.0	42.2	50.5	37.3	57.8	48.8	52.3	47.7	26.5	48.0	36.5	-	
BR18	581471	230711	45.0	30.2	45.9	42.2	30.2	31.2	32.3	36.8	34.6	35.5	37.3	41.0	36.9	28.0	-	
BR20	581586	230775	53.3	42.4	46.6	46.8	43.8	47.0	41.1	47.8	47.0	44.7	46.1	38.9	45.5	34.5	-	
BR21	582143	214630	40.1	27.9	37.9	27.2	21.4	21.0	22.6	27.6	28.4	31.2	31.9	34.3	29.3	22.3	-	
BR22	582033	215081	39.2		32.1	21.0		22.7	20.5	21.3	25.4	32.0	31.8	24.7	27.1	20.6	-	
BR24	575611	222892	39.8	26.3	36.8	27.6	22.6	24.9	21.1	27.6	24.6	25.7	28.3	30.9	28.0	21.3	-	

BR25	579402	211916	47.0	32.5	43.5	32.5	20.0		25.8	32.6	28.7	32.9		30.0	32.6	24.7	-	
BR26	578823	211654	49.5	33.2	48.4	34.4	26.7		29.9	29.6	31.6	29.4	33.0	31.8	34.3	26.1	-	

☒ **All erroneous data has been removed from the NO_2 diffusion tube dataset presented in Table B.1** ☒ **Annualisation has been conducted where data capture is <75% and >25% in line with LAQM.TG22**

☒ **Local bias adjustment factor used**

☒ **National bias adjustment factor used**

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

☒ Braintree District Council **confirm that all 2022 diffusion tube data has been uploaded to the Diffusion Tube Data Entry System**

Notes:

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

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

See Appendix C for details on bias adjustment and annualisation.

Comment 1 Triplicate Site with BR14, NC1 and NC2 - Annual data provided for NC2 only

Comment 2 Triplicate Site with BR16, NC3 and NC4 - Annual data provided for NC4 only

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

New or Changed Sources Identified Within Braintree District During 2022

The Braintree District has continued to see an increase in housing projects commencing/continuing construction. These would all be subject to requiring air quality assessments at the time of planning applications. None have identified the likelihood of exceedances of the air quality objectives but it is recognised that the increase in housing development does increase traffic flows on existing roads. In addition when there are incidents on strategic roads in particular the A120 Braintree town bypass this causes the traffic in Braintree Town Centre to congest.

Essex County Council reports that since 2020 traffic flows for commuters have changed in reducing the peak flows in the morning but suggesting that flows are more sustained during the morning thereby not reducing the traffic totals and trending an increase in total traffic which mirrors the data the trend data in Appendix A1.

Additional Air Quality Works Undertaken by Braintree District Council During 2022

A review of air quality within Braintree District Council has been undertaken by an external Air Quality Consultant.

This information is not available to share at the current time but will be used to produce an air quality strategy with particular regard to hot spot locations such as Halstead and to improve coverage of monitoring by using diffusion tubes and low cost sensors as appropriate to present indicators of where attention particularly in regard to particulate matter.

QA/QC of Diffusion Tube Monitoring

The supplier of diffusion tubes used throughout 2022 was Socotec (Didcot) using a 50% TEA in acetone. Precision information on the LAQM website - https://laqm.defra.gov.uk/air-quality/air-quality-assessment/precision-and-accuracy/ indicates good precision accuracy for a high number of test results.

Diffusion Tube Preparation Method	2020 Good	2020 Bad	2021 Good	2021 Bad	2022 Good	2022 Bad
ESG Didcot / SOCOTEC, 50% TEA in Acetone	24	0	25	3	26	0

AIR is an independent analytical proficiency-testing (PT) scheme, operated by LGC Standards and supported by the Health and Safety Executive (HSE). AIR PT is a new scheme, started in April 2014, which combined two long running PT schemes: LGC Standards STACKS PT scheme and HSE WASP PT scheme. The AIR PT scheme uses laboratory spiked Palmes type diffusion tubes to test each participating laboratory's analytical performance on a quarterly basis and continues the format used in the preceding WASP PT scheme. The latest results up to June 2022 are shown below and shows 100% satisfactory analysis results for Socotec. Source address is https://laqm.defra.gov.uk/wp-content/uploads/2022/07/LAQM-NO2-Performance-data_Up-to-June-2022_V2.1.pdf

Table 1: Laboratory summary performance for AIR NO_2 PT rounds AR037, 39, 40, 42, 43, 45, 46, 49 and 50

The following table lists those UK laboratories undertaking LAQM activities that have participated in recent AIR NO_2 PT rounds and the percentage (%) of results submitted which were subsequently determined to be **satisfactory** based upon a z-score of $\leq \pm 2$ as defined above.

AIR PT Round	AIR PT AR037	AIR PT AR039	AIR PT AR040	AIR PT AR042	AIR PT AR043	AIR PT AR045	AIR PT AR046	AIR PT AR049	AIR PT AR050
Round conducted in the period	May – June 2020	July – August 2020	September – October 2020	January – February 2021	May – June 2021	July – August 2021	September – October 2021	January – February 2022	May – June 2022
Aberdeen Scientific Services	NR [4]	NR [4]	100 %	100 %	100 %	100 %	100 %	100 %	100 %
Cardiff Scientific Services	NR [4]	NR [4]	NR [3]	NR [3]	NR [3]	NR [3]	NR [3]	NR [3]	NR [3]
Edinburgh Scientific Services	NR [4]	NR [4]	100 %	25 %	100 %	100 %	75 %	NR [2]	50 %
SOCOTEC	NR [4]	NR [4]	100 % [1]	100 % [1]	100 % [1]	87.5 % [1]	100 % [1]	100 % [1]	100 % [1]

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.

Braintree District Council have applied a national bias adjustment factor of 0.76 to the 2022 monitoring data. The version of the spreadsheet used is 03/23 and based on 26 studies as shown below.

National Diffusion Tube Bias Adjustment Factor Spreadsheet — Spreadsheet Version Number: 03/23

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

This spreadsheet will be updated at the end of June 2023

LAQM Helpdesk Website

The LAQM Helpdesk is operated on behalf of Defra and the Devolved Administrations by Bureau Veritas, in conjunction with contract partners AECOM and the National Physical Laboratory.

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

Step 1:	Step 2:	Step 3:	Step 4:								
Select the Laboratory that Analyses Your Tubes from the Drop-Down List	Select a Preparation Method from the Drop-Down List	Select a Year from the Drop-Down List	Where there is only one study for a chosen combination, you should use the adjustment factor shown with caution. Where there is more than one study, use the overall factor[3] shown in blue at the foot of the final column.								
If a laboratory is not shown, we have no data for this laboratory.	If a preparation method is not shown, we have no data for this method at this laboratory	If a year is not shown, we have no data[2]	If you have your own co-location study then see footnote[4]. If uncertain what to do then contact the Local Air Quality Management Helpdesk at LAQMHelpdesk@bureauveritas.com or 0800 0327953								
Analysed By[1]	**Method** To undo your selection, choose (All) from the pop-up list	**Year[5]** To undo your selection, choose (All)	**Site Type**	**Local Authority**	**Length of Study (months)**	**Diffusion Tube Mean Conc. (Dm) (µg/m³)**	**Automatic Monitor Mean Conc. (Cm) (µg/m³)**	**Bias (B)**	**Tube Precision[6]**	**Bias Adjustment Factor (A) (Cm/Dm)**	
SOCOTEC Didcot	50% TEA in acetone	2022		**Overall Factor[3] (26 studies)**				**Use**		**0.76**	

A summary of bias adjustment factors used by Braintree District Council over the past five years is presented in Table C.1.

Table C.1 – Bias Adjustment Factor

Monitoring Year	Local or National	If National, Version of National Spreadsheet	Adjustment Factor
2022	National	03/22	0.76
2021	National	03/21	0.78
2020	National	03/20	0.77
2019	National	03/19	0.75
2018	National	03/18	0.76

NO_2 Fall-off with Distance from the Road

Wherever possible, monitoring locations are representative of exposure. However, where this is not possible, the NO_2 concentration at the nearest location relevant for exposure has been estimated using the Diffusion Tube Data Processing Tool/NO_2 fall-off with distance calculator available on the LAQM Support website. Where appropriate, non-automatic annual mean NO_2 concentrations corrected for distance are presented in Table B.1.

Table C.2 – NO_2 Fall off With Distance Calculations (concentrations presented in $\mu g/m^3$)

Site ID	Distance (m): Monitoring Site to Kerb	Distance (m): Receptor to Kerb	Monitored Concentration (Annualised and Bias Adjusted	Background Concentration	Concentration Predicted at Receptor	Comments
BR14, NC1, NC2	0.7	n/a	49.1	9.7	**n/a**	Location is pavement to assess any exceedance of 60µg/m3 to indicate short term exposure concerns
BR16, NC3, NC4	1.0	2.4	39.3	9.7	34.0	No exceedance of annual mean identified
BR17	1.0	n/a	36.5	9.7	**n/a**	Location is pavement to assess any exceedance of 60µg/m3 to indicate short term exposure concerns

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

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

Figure D2.1 – Map of Non-Automatic Monitoring Sites Areas (detailed maps below)

- Denotes area of diffusion tubes with more detail in Figs D.1.2 to 1.7

Fig D.1.2 - NO_2 Diffusion Tube Locations for Braintree Town (central)

Fig D.1.3 - NO_2 Diffusion Tube Locations for Braintree Town (south east)

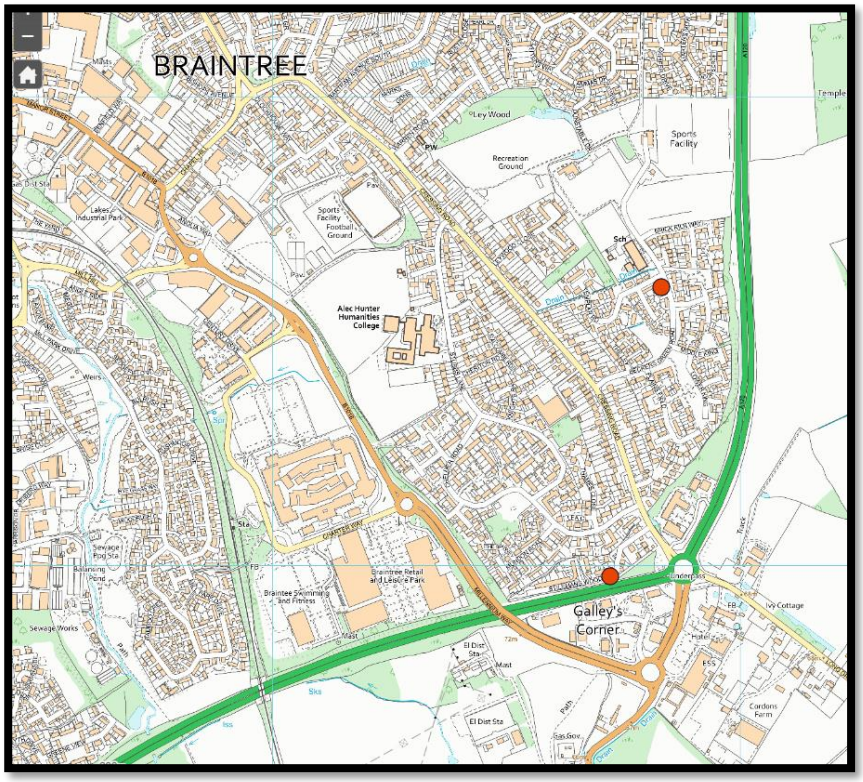


Fig D.1.4 - NO2 Diffusion Tube Locations for Witham

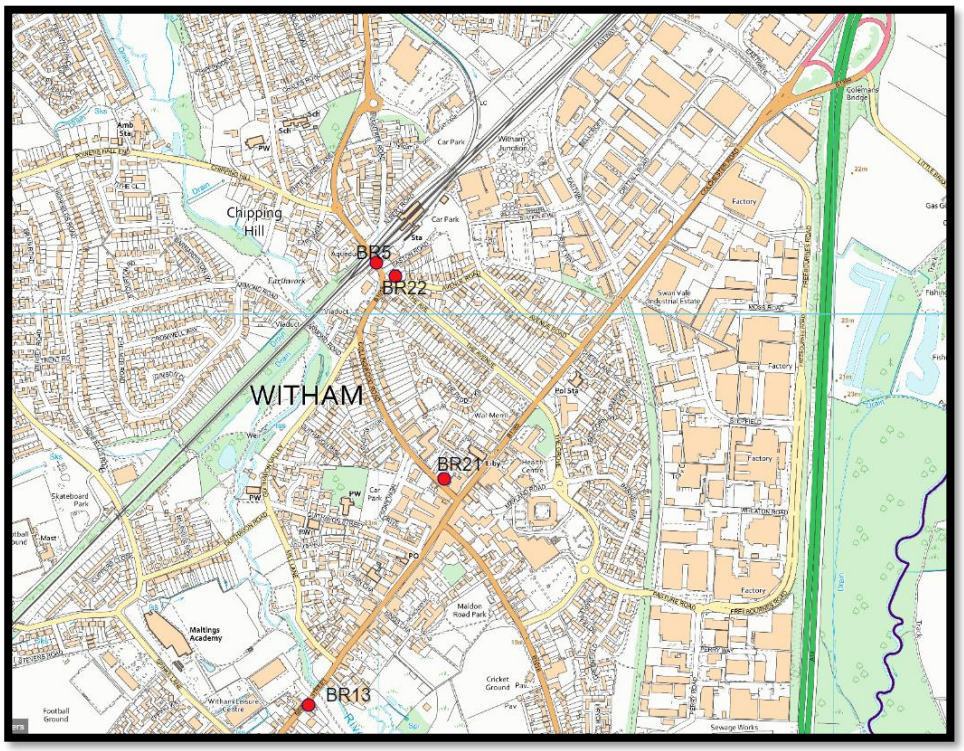


Fig D.1.5 - NO2 Diffusion Tube Locations for Halstead (overview)

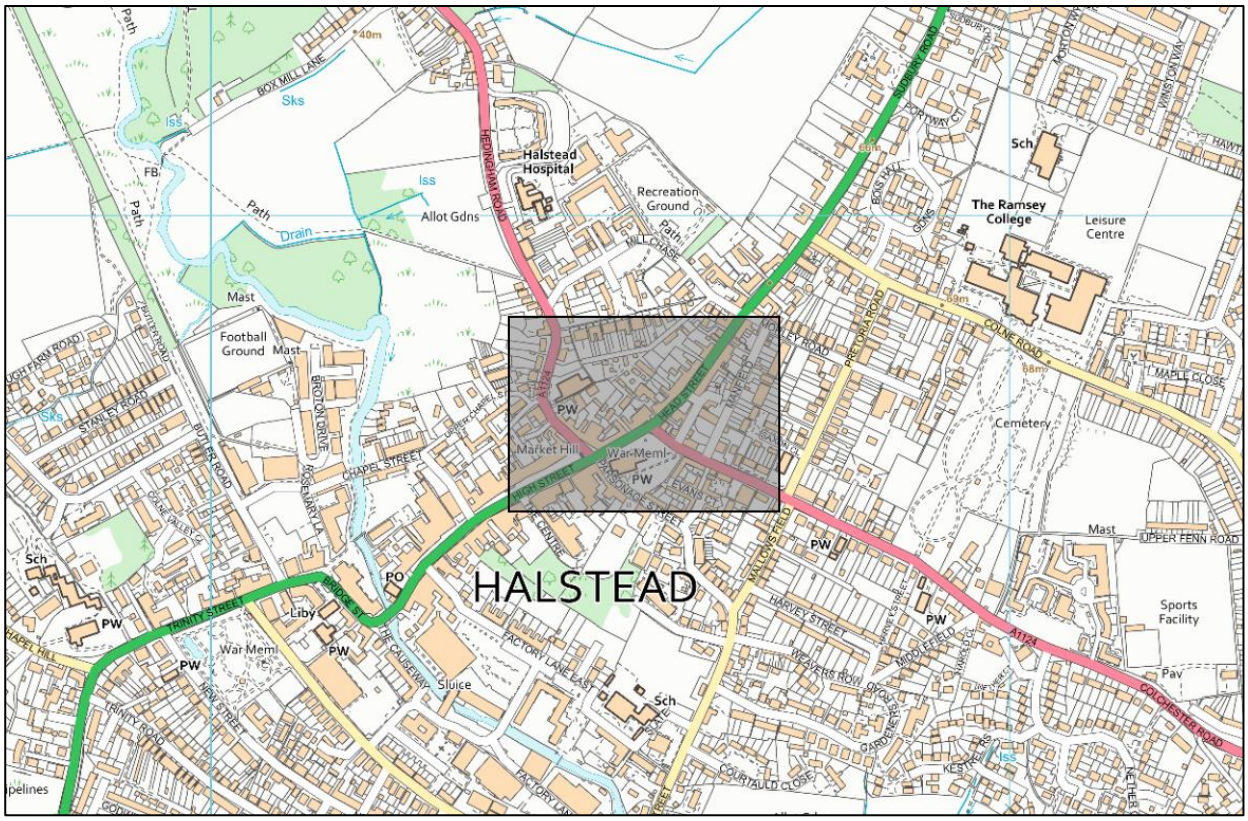
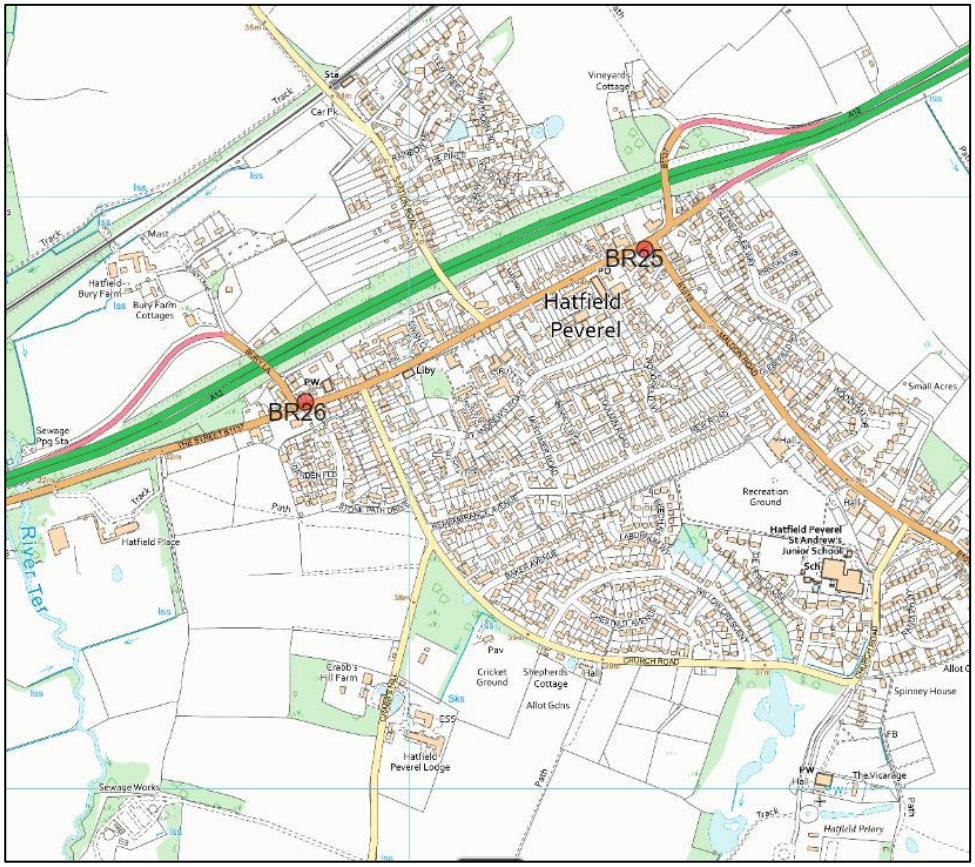


Fig D.1.6 - NO2 Diffusion Tube Locations for Halstead

Fig D.1.7 - NO2 Diffusion Tube Locations for Hatfield Peverel


BR25
Hatfield
Peverel
BR26
Vineyards
Cottage
Hatfield
Bury Farm
Bury Farm
Cottages
Liby
Small Acres
Recreation
Ground
Hatfield Peverel
St Andrew's
Junior School
Hatfield Place
River Ter
Pav
Cricket
Ground
Shepherds
Cottage
Allot Gdns
Crabb's
Hill Farm
Hatfield
Peverel Lodge
Spinney House
The Vicarage
Hatfield Priory
Sewage Works
CHURCH ROAD

Appendix E: Summary of Air Quality Objectives in England

Table E.1 – Air Quality Objectives in England[7]

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

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

Glossary of Terms

Abbreviation	Description
AQAP	Air Quality Action Plan - A detailed description of measures, outcomes, achievement dates and implementation methods, showing how the local authority intends to achieve air quality limit values'
AQMA	Air Quality Management Area – An area where air pollutant concentrations exceed / are likely to exceed the relevant air quality objectives. AQMAs are declared for specific pollutants and objectives
ASR	Annual Status Report
Defra	Department for Environment, Food and Rural Affairs
DMRB	Design Manual for Roads and Bridges – Air quality screening tool produced by National Highways
EU	European Union
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.