2021 Air Quality Annual Status Report (ASR)

In fulfilment of Part IV of the Environment Act 1995

Local Air Quality Management

Date: December 2021

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Executive Summary: Air Quality in Our Area

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 28,000 to 36,000 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 source of air pollution within the Braintree district is road traffic. The main pollutant of concern is nitrogen dioxide (NO_2) from vehicle combustion engines. The A120, A131 and A12 pass through the district. The three main towns are Braintree, Halstead and Witham and there are increasing traffic flows in the town centres due to both commercial and residential development. Within the towns and larger villages there is the potential for elevated NO_2 levels at residential facades (point of relevant exposure) close to road junctions and air pollutant monitoring is focussed on these locations.

Monitoring for the year 2020 comprises 18 NO_2 diffusion tubes which are analysed monthly to provide an annual average that is compared to the 40µg/m^3 objective level (Appendix E). In 2020 the site BR19 at High Street at Halstead was discontinued as the monitoring location was no longer available and a short term assessment at the façade of residential property on the A120 at Bradwell was carried out at local request at site BR23. There is full data for all sites apart from BR23 (50% capture) and BR14 in Halstead (90% capture). For the year 2020 locations there is a decreasing trend in concentration levels

[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, July 2020

[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

against previous years with between 15% and 29% reductions in concentrations from those reported in 2019. The pandemic restrictions led to traffic flow variations but monthly data shows that when the 'stay at home' policy was not in place there are still high monthly concentrations of NO_2 north of Halstead High Street where Colchester Road and Head Street converge at a mini roundabout. There remains concern of possible exceedances of both the NO_2 short term objective level (200µ/m3 -which would be indicated by an annual mean of greater than 60µg/m3) and annual mean objective level (40µg/m3) at relevant points of exposure in future years if traffic flows return to pre-pandemic levels. Focus will remain on the Halstead sites shown in Appendix D (Fig D4) in particular Site BR14, a pavement location alongside the road presenting as 47.6µg/m^3 in 2020 (56.8µg/m^3 in 2019) and site BR20 presenting as 35.2µg/m^3 in 2020 (44.1µg/m^3 in 2019) at 1.4m to the facade of residential property. The five year trend in NO_2 concentration levels at all locations with more than five years data is decreasing although 2020 is recognised as an atypical year due to the pandemic. Currently there are no AQMA's declared within Braintree District Council.

Actions to Improve Air Quality

Whilst air quality has improved significantly in recent decades, and will continue to improve due to national policy decisions, there are some areas where local action is needed to improve air quality further.

The 2019 Clean Air Strategy[5] sets out the case for action, with goals even more ambitious than EU requirements to reduce exposure to harmful pollutants. The Road to Zero[6] sets out 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.

No AQMAs were declared within the Braintree District area in 2020 and therefore no action plan is required formally. Table 2.2 in the report details actions being taken to maintain and where possible improve air quality.

[5] Defra. Clean Air Strategy, 2019

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

Braintree District Council continues to manage air quality through air pollutant monitoring as described above, assessment of proposed development and promotion of sustainable development, inspection of existing industrial sources through the permitted process regime including liaison with the EA where necessary, enforcement in regard to smoke nuisances, control of taxis via the licensing regime and liaison with interested parties to promote low emissions. Braintree District Council is a member of the Essex Air Quality group which meets regularly to promote good practice and improvements in air quality related issues ensuring that obligations under current UK Air Quality legislation are met within Essex. Essex County Council also attends this group to assist with County transport planning. Braintree District Council declared a climate emergency in July 2019 and announced a target to be carbon neutral as a Council as far as practicable by 2030, as well as supporting our communities to reduce the impacts of climate change across the Braintree District. The first Electric Forecourt in the UK is within Braintree District opened at the end of 2020. Braintree District Council has installed public charging points at various locations including car parks and at office spaces owned by Braintree District Council.

Currently Braintree District Council needs a significant growth of homes by 2033. The strategy through the local plan is to plan for infrastructure, control where development is located and to drive investment in rail, roads and the cycling infrastructure as well as looking at new modes of public transport. A key priority is to protect the environment and supporting the district to reduce energy consumption, carbon emissions and pollution.

Braintree District Council's Corporate Strategy published in August 2020 promotes the aim of a Green and Clean place to live and work making reference to the 'enhanced environment'.

A new Climate Change Strategy and a new Cycling Strategy will be consulted on in 2021 with key targets to be met by 2030 in recognising the climate emergency.

The Live Well initiative continues to promote healthy lifestyles including walking and cycling as alternatives to combustion engine transport and this is supported through the aforementioned strategies which may all be viewed on Braintree District Council's website. Links are given in the 'Local Engagement' section below.

The Rivenhall Integrated Waste Management Facility (IWMF) at Rivenhall Airfield which has received an environmental permit by the EA is due to be commissioned in 2025 No exceedance of air quality objectives at points of relevant exposure are predicted for this process.

Major infrastructure projects such as the widening/realignment of the A12 to the south of the district is due to commence construction in 2023 if approved as a NSIP (National Strategic Infrastructure Project) and is at the statutory consultation stage. Preliminary environmental impact reports indicate that there will be no exceedance of the air quality objectives within the Braintree District area of the project. The air quality impact will be further reviewed as the consultation progresses.

Conclusions and Priorities

No exceedances were identified from the NO_2 monitoring carried out in 2020. The results were heavily influenced by reduced traffic flows due to the pandemic and the general decreasing trend for all sites remains.

Highest concentrations in the Halstead Head Street/Colchester Road junction where there is nearby residential property and members of the public are likely to be present remains a priority in targeting monitoring.

Larger residential, commercial developments and infrastructure projects will continue to be assessed during the planning process and as more information becomes available to prevent exceedances of air quality objectives throughout the District.

Local Engagement and How to get Involved

Braintree District Council is a member of the Essex Air Quality Group (a group of representatives for Essex local authorities including Essex County Council (highways and Public Health) and other interested parties. The associated group website www.essexair.org.uk contains comprehensive information about Essex air quality. At www.cleanairday.org.uk also provides advice on how the public can get involved with free resources related to Clean Air Day held in June each year. Members of the public are encouraged to may comment on planning applications and the new local plan on the environmental impacts. Braintree District Council has a corporate strategy which promotes enhancement of the environment (page 10) and may be downloaded from the Braintree District Council website at Corporate Strategy Both the cycling strategy and the climate change strategy may be accessed at https://www.braintree.gov.uk/climatechange .

Any queries about air quality related matters are welcomed and may be sent to the Public Health and Housing Team. Email– phandh@braintree.gov.uk

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Tables

1 Local Air Quality Management

This report provides an overview of air quality in Braintree District Council during 2020. It fulfils the requirements of Local Air Quality Management (LAQM) as set out in Part IV of the Environment Act (1995) 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 pursuit of the objectives. 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 12 months setting out measures it intends to put in place in pursuit of compliance with the objectives.

Braintree District Council currently has no declared AQMAs and no Air Quality Action Plan is required to be submitted.

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

Braintree District Council is continuing to review NO_2 concentrations across the district particularly in the main towns of Braintree, Halstead and Witham. All tubes are showing a downward trend in measured concentrations and a marked reduction in 2020 due to pandemic variation in traffic flows. If diffusion tube concentrations at BR14 and BR16 are close to the exceedance levels in future years, then automatic continuous monitoring will be the preferred option to further assess the concentrations with better accuracy. This will better inform any decision to determine whether an AQMA at Head street/Colchester Road junction in Halstead should be declared, allow a review of particulate matter concentrations at a busy town junction and inform decision making for proposed planning developments where road traffic increases at the location are predicted.

Whilst Braintree does not have a formal air quality strategy, it promotes good air quality and reduces exposure to pollutants by fulfilling statutory duties to investigate air pollution nuisances and inspect permitted processes, promotes sustainable development and transport through planning policies (e.g. increasing cycle routes, increasing electric charging facilities).

Braintree District Council's Corporate Strategy promotes the aim of a Green and Clean place to live and work Corporate Strategy published in August 2020 refers to the enhanced environment.

Braintree District Council continues to promote Live well scheme found at livewell campaign on the Braintree District Council website to encourage healthier lifestyles.

Further to the declaration of a climate emergency in 2019 and the proposed target for the District area to be carbon neutral as a District area by 2030 the climate change and cycling strategies are in the consultation stages. Both strategies are available at https://www.braintree.gov.uk/climatechange and both support the aims of Local Air Quality Management reduction in air pollution by promoting sustainable development and travel.

Braintree District Council seeks to engage public participation through consultation and will work with communities. Monitoring will be expanded where there is justification. The decreasing trends in concentrations at all monitoring points serves to indicate that measures being taken are sufficient.

Defra's appraisal of last year's ASR accepted the conclusions of the 2020 report as indicated in the reproduced comments shown in italics below. The Public Health Outcome Framework indicators for $PM_{2.5}$ have been included as numerical data in this report in section 2.5.

Reference has been made to the Public Health Outcome Framework indicators for $PM_{2.5}$ however it would be beneficial for the Council to include the numerical data for their Council and nearby Councils so that a quantitative comparison can be made.

On the basis of the evidence provided by the local authority the conclusions reached are acceptable for all sources. Following the completion of this report, Braintree District Council should submit an Annual Status Report in 2021.

Braintree District Council has taken forward a number of direct measures during the current reporting year of 2020 in pursuit of improving local air quality. Details of all measures completed, in progress or planned are set out in Table 2.1. 16 measures are included within Table 2.1, with the type of measure and the progress Braintree District Council have made during the reporting year of 2020 presented. Where there have been, or continue to be, barriers restricting the implementation of the measure, these are also presented within Table 2.1.

Table 2.1 – Progress on Measures to Improve Air Quality

Measure No.	Measure	Category	Classification	Year Measure Introduced	Estimated / Actual Completion Year	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
1	Local Plan specific to AQ impact assessment (e.g provision of EV charging points and measures to offset adverse impact)	Policy Guidance and Development Control	Air Quality Planning and Policy Guidance		2022	Local Authority Planning.	Local Authority	NO	Funded		Implementation	No AQMA - not quantified	n/a	consultation ongoing	Local plan delayed - in consultation stage
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			Local Authority Planning/Environmental Health.	Local Authority	NO	Funded		Implementation	No AQMA - not quantified	n/a	Actively required	none
3	Provision of travel plans through planning process	Alternatives to private vehicle use	Other			Local Authority Environmental Health, Local Authority Transport Dept.	Local Authority	NO	Funded		Implementation	No AQMA - not quantified	n/a	Implemented through local planning and transport cooperation	none
4	Enforcement and inspection of pollution industry through environmental permitting and statutory nuisance legislation	Environmental Permits	Other measure through permit systems and economic instruments			Local Authority Environmental Health	Local Authority	NO	Funded		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			Local Authority Environmental Health	Local Authority	NO	Funded		Implementation	No AQMA - not quantified	n/a	Actively enforced	none
6	Implementation of climate change strategy	Policy Guidance and Development Control	Low Emissions Strategy		2030	local authority	Local Authority	NO	Partially Funded		Planning	No AQMA - not quantified	n/a	consultation ongoing	Public adoption hesitancy, cost of new technology
7	Live well campaign	Alternatives to private vehicle use	Other	2017		Local authority	Local Authority	NO	Funded		Implementation	No AQMA - not quantified	n/a	Actively promoted since 2017	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			Local Authority Environmental Health	Local Authority	NO	Funded		Implementation		n/a	Held every three months	Have continued as virtual meetings

Measure No.	Measure	Category	Classification	Year Measure Introduced	Estimated / Actual Completion Year	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
9	Adopted road traffic act powers to require switching off of engines	Traffic Management	Anti-idling enforcement			Local authority Environmental Health	Local Authority	NO	Funded		Implementation	No AQMA - not quantified		Legislation useful as an education tool	
10	Requirement for new licensed taxi s to be less than 5 years old on first licensing - policy in progress of being reviewed to be specific to EURO type	Promoting Low Emission Transport	Taxi Licensing conditions	2019		Local Authority Licensing	Local Authority	NO	Funded		Implementation	No AQMA - not quantified	n/a	Implementation on-going	
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		Local Authority	Local Authority	NO	Funded		Implementation	No AQMA - not quantified	n/a	Option existed for a number of years	Lower take up as cheaper alternatives become available in the open market
12	The Council will continue to promote alternatives to domestic bonfires and responsible waste management.	Public Information	Other			Local Authority	Local Authority	NO	Funded		Implementation	No AQMA - not quantified	n/a	Implementation on-going as opportunities arise	
13	Climate change working group	Other	Other	2019		Local Authority	Local Authority	NO	Funded		Completed		n/a	linked to climate change strategy process	
14	School travel plans	Promoting Travel Alternatives	Other			Local Authority both Tiers	Local Authority	NO	Funded		Implementation			Implementation with cooperation from ECC	
15	Cycling strategy	Promoting Travel Alternatives	Promotion of cycling	2020		Local Authority	Local Authority	NO			Planning			process of consultation	
16	Public electric charging points	Promoting Low Emission Transport	Procuring alternative Refuelling infrastructure to promote Low Emission Vehicles, EV recharging, Gas fuel recharging	2016		Local Authority	Local Authority	NO	Funded		Implementation	No AQMA - not quantified	n/a	8 locations across district with other sites planned	

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

As detailed in Policy Guidance LAQM.PG16 (Chapter 7), 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.

As detailed in Policy Guidance LAQM.PG16 (Chapter 7), 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.

There is no regulatory standard applied to $PM_{2.5}$ (for local authorities in England) to require action to reduce emissions or concentrations of fine particulate air pollution, although action to tackle PM_{10}/NOx would usually contribute to this. The EU Ambient Air Quality Directive does however set out air quality standards for $PM_{2.5}$ including an exposure reduction obligation for urban background, a target value and a limit value. The target annual mean value is given as 25µg/m^3 although the aim should be for all local authorities to reduce and minimise levels of $PM_{2.5}$ even where there is compliance with the target values.

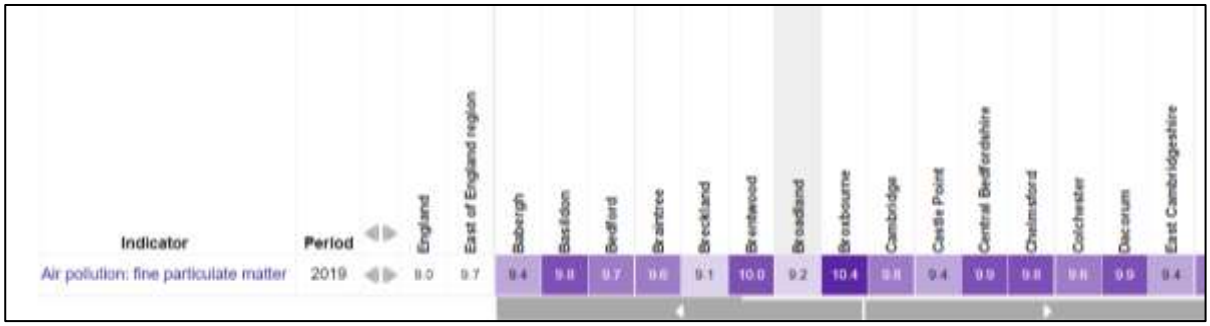
The National Local Air Quality Technical guidance (TG 16 paragraph 2.57) states that it is estimated that as much as 40% to 50% of the $PM_{2.5}$ levels found in any given area can be from sources outside a local authority's direct boundary.

An area where more work is required is communicating with the public about air pollution, (AQ1010 Final Report13) this is referred to in the TG16 guidance which promotes more active stakeholder engagement.

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 (2019) the information for Braintree as shown below indicates that the level is 9.6. This is comparable to levels for Chelmsford and Colchester to the South and East of 9.8 and 9.6 respectively and Babergh and Uttlesford to the north and East of 9.4 and 9.5 with an East of England

region average of 9.7 as found at https://fingertips.phe.org.uk/search/particulate%20matter at the Public Health England website and as shown in graphical form below in Fig 2.1.

Fig 2.1 The Public Health Outcomes Framework introduced a PM2.5 indicator "fraction of adult mortality attributed to particulate air pollution.



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 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 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 shown in Table 2.1

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

This section sets out the monitoring undertaken within 2020 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 2016 and 2020 where data is available to allow monitoring trends to be identified and discussed.

3.1 Summary of Monitoring Undertaken

3.1.1 Automatic Monitoring Sites

Braintree District Council has no automatic monitoring site. Note local authorities do not have to report annually on the following pollutants: 1,3 butadiene, benzene, carbon monoxide and lead, unless local circumstances indicate there is a problem.

3.1.2 Non-Automatic Monitoring Sites

Braintree District Council undertook non- automatic (i.e. passive) monitoring of NO_2 at 18 sites during 2020. 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 compares the ratified and adjusted monitored NO_2 annual mean concentrations for the past five years with the air quality objective of 40µg/m^3. Please 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 2020 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.

All the monitored locations assess road traffic pollution. Within Table B.1 there are no exceedances of the air quality objectives at receptor locations (at façade of residential property for the annual mean or at a pavement location for the short term mean) nor are any results within 10% of the objective levels at points of relevant exposure. All concentrations are reduced against 2019 levels due to reduced traffic flows during the pandemic.

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
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

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)
BR14	Head Street Halstead	Kerbside	581542	230738	NO2	NO	30.0	0.7	No	1.9
BR16	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	N/A	0.5	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
BR23	Mill View	Roadside	580965	223071	NO2	NO	0.0	12.0	No	1.8

(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 2020 (%) [2]	2016	2017	2018	2019	2020
BR1	575600	222900	Roadside	100	100.0	31.0	31.0	28.2	29.4	23.6
BR3	583859	216497	Roadside	100	100.0	**46.4**	**51.9**	**46.1**	**45.8**	37.2
BR4	577800	222500	Urban Background	100	100.0	17.3	18.3	16.2	16.6	12.7
BR5	582002	215111	Roadside	100	100.0	**45.9**	**45.3**	**40.4**	39.1	32.3
BR6	576204	222958	Roadside	100	100.0	23.2	24.6	22.9	21.4	16.9
BR7	577680	221964	Roadside	100	100.0	28.3	31.6	29.2	27.8	21.5
BR9	583891	216467	Roadside	100	100.0	**46.3**	**46.1**	**40.7**	35.5	26.6
BR11	586386	219106	Roadside	100	100.0	30.1	27.1	23.1	22.1	17.2
BR12	580625	223115	Roadside	100	100.0	31.3	31.5	25.9	27.3	20.9
BR13	581851	214151	Roadside	100	100			33.0	32.9	28.1
BR14	581542	230738	Kerbside	90.4	90.4			**59.9**	**56.8**	**47.6**
BR16	581564	230742	Roadside	100	100.0				**44.1**	35.2
BR17	581530	230731	Kerbside	100	100.0				**42.3**	32.6
BR18	581471	230711	Kerbside	100	100.0				33.0	24.1
BR20	581586	230775	Roadside	100	100.0				37.5	30.6
BR21	582143	214630	Roadside	100	100.0				28.2	20.0
BR22	582033	215081	Roadside	100	100.0				24.0	19.5
BR23	580965	223071	Roadside	40.4	40.4					17.2

☒ **Annualisation has been conducted where data capture is <75% and >25% in line with LAQM.TG16**

☒ **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.TG16 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%).

Figures A.1 – Trends in Annual Mean NO_2 Concentrations

Fig A.1a below presents **NO_2 annual mean concentrations for sites in Braintree District** BR1, BR3 to BR7, BR9, BR11 and BR12 between years 2016 to 2020 for sites. All have at least 5 year data capture. There are no exceedances of the annual mean objective in 2020 for these sites including alongside the A12 and there is a general trend of reduction experienced across all the sites.

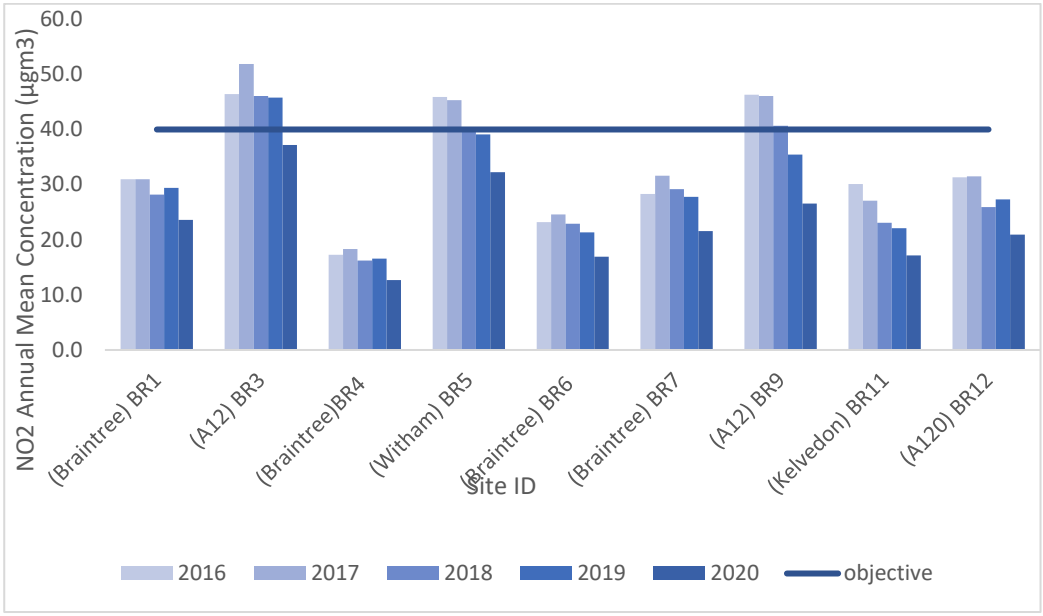


Figure A.1b below presents NO2 annual mean concentrations for sites in Braintree town area BR1, BR4, BR6 and BR7 between years 2016 to 2020 for sites with at least 5 year data capture. There are no exceedances of the annual mean objective in 2020 for these sites and there is a general trend of reduction experienced across all the sites.

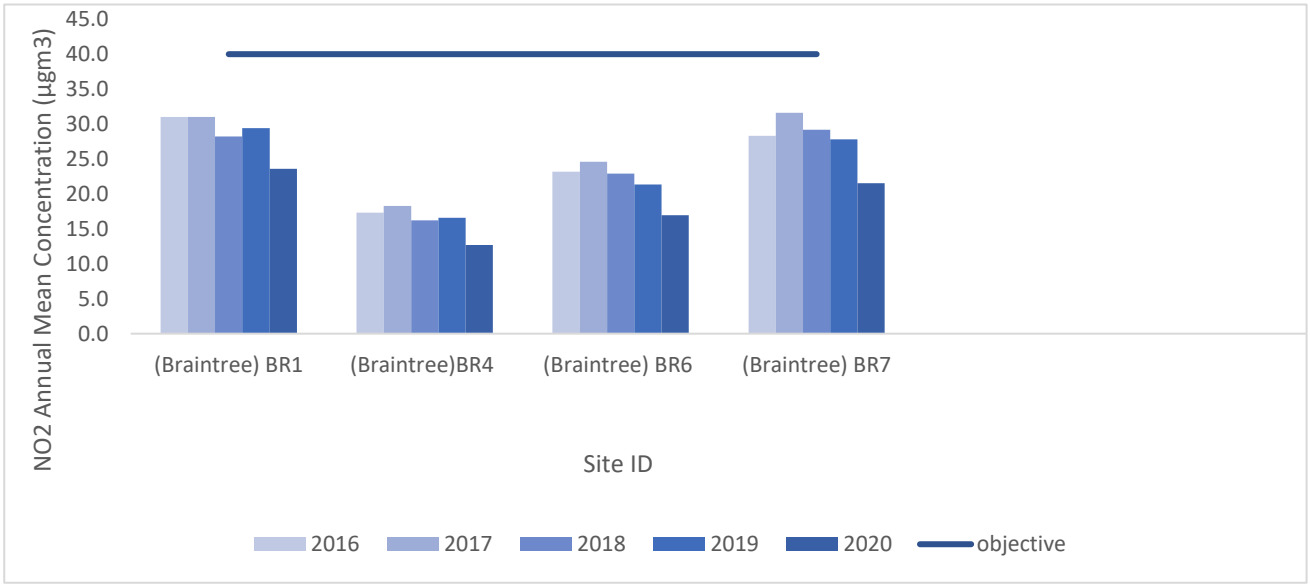


Figure A.1c below presents NO2 annual mean concentrations for sites in Witham town area BR5, BR13, BR21 and BR22 between years 2016 to 2020 for sites. There are no exceedances of the annual mean objective in 2020 for these sites.

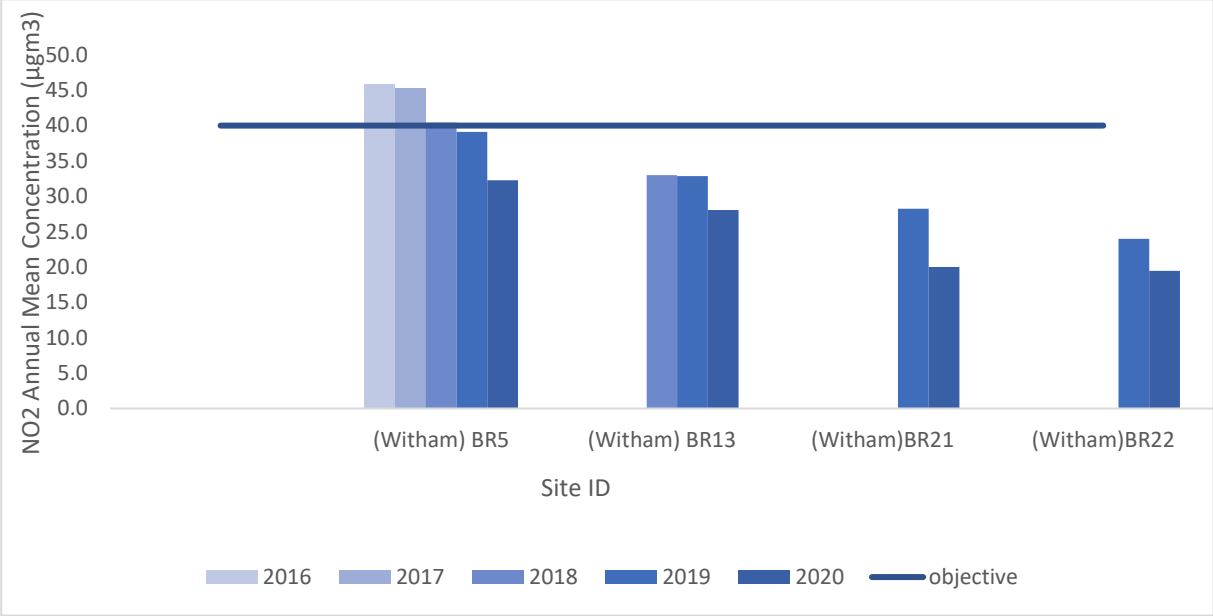
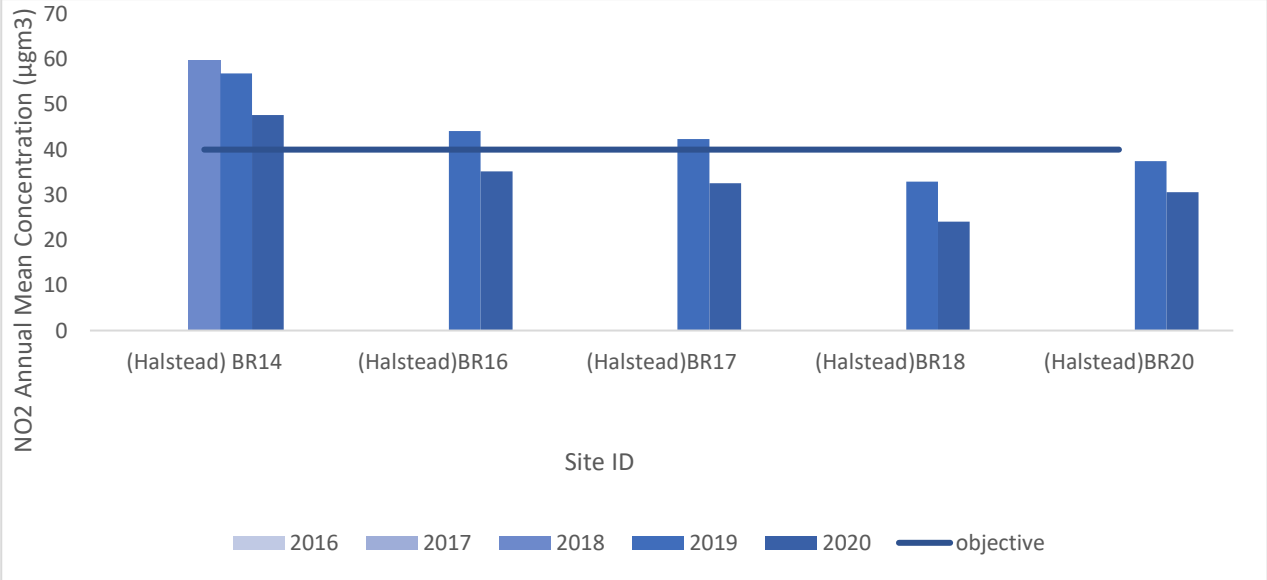


Figure A.1d below presents NO2 annual mean concentrations for sites in Halstead town area BR14, BR16, BR17, BR18 and BR20 between years 2018 to 2020. There are no exceedances of the annual mean objective in 2020 for these sites as site BR14 is a pavement location and not a sensitive receptor.



Appendix B: Full Monthly Diffusion Tube Results for 2020

Table B.1 – NO_2 2020 Diffusion Tube Results ($\mu g/m^3$)

DT ID	X OS Grid Ref (Easting)	Y OS Grid Ref (Easting)	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual Mean: Raw Data	Annual Mean: Annualised and Bias Adjusted (0.77)	Annual Mean: Distance Corrected to Nearest Exposure	Comment
BR1	575600	222900	42.8	35.2	29.7	22.3	20.3	28.2	22.3	27.3	29.4	34.3	40.4	35.9	30.7	23.6	-	
BR3	583859	216497	72.1	63.1	42.3	21.6	33.6	45.2	39.8	47.1	57.6	53.3	54.0	49.5	48.3	37.2	24.2	
BR4	577800	222500	27.1	19.2	15.6	11.9	10.0	13.9	10.9	12.2	15.0	20.7	23.6	17.7	16.5	12.7	-	
BR5	582002	215111	56.5	47.0	29.8	24.1	28.9	37.6	41.5	42.5	48.9	52.8	53.3	40.0	41.9	32.3	-	
BR6	576204	222958	44.5	24.4	20.6	15.5	12.8	17.1	14.5	16.9	21.2	24.9	28.7	23.0	22.0	16.9	-	
BR7	577680	221964	33.5	34.4	25.0	20.3	14.4	30.9	22.5	29.2	28.6	30.7	36.3	30.0	28.0	21.5	-	
BR9	583891	216467	51.1	45.7	34.5	21.8	25.0	26.6	31.2	30.0	44.7	34.3	40.4	28.7	34.5	26.6	-	
BR11	586386	219106	32.8	26.4	23.7	17.1	13.8	19.1	17.1	20.3	28.8	20.6	32.3	15.5	22.3	17.2	-	
BR12	580625	223115	36.2	32.4	23.5	17.0	22.3	26.5	27.9	27.3	30.3	26.6	31.9	24.0	27.2	20.9	-	
BR13	581851	214151	50.3	32.6	32.0	29.2	30.6	37.2	26.2	38.6	39.1	41.4	43.9		36.5	28.1	-	
BR14	581542	230738	83.2	71.4	46.1	38.4	46.5	55.1	55.5	70.4	71.7	73.7	68.7		61.9	**47.6**	21.8	
BR16	581564	230742	56.0	41.2	44.9	33.3	35.0	48.4	39.8	51.3	51.8	54.2	57.6	34.8	45.7	35.2	-	
BR17	581530	230731	54.0	40.0	34.7	32.6	37.4	47.1	36.9	49.6	45.7	48.0	45.7	36.2	42.3	32.6	-	
BR18	581471	230711	46.3	33.6	29.9	23.6	20.8	30.9	25.1	30.1	35.8	36.0	31.2	31.7	31.3	24.1	-	
BR20	581586	230775	56.6	43.2	36.0	24.7	17.0	37.8	42.5	41.5	50.5	44.3	41.6	41.0	39.7	30.6	-	
BR21	582143	214630	30.1	25.2	20.1	18.9	29.6	21.6	17.6	25.9	29.3	29.7	33.4	30.3	26.0	20.0	-	
BR22	582033	215081	38.7	29.4	21.8	16.0	14.9	20.9	22.1	21.7	28.5	31.4	31.5	26.5	25.3	19.5	-	
BR23	580965	223071			16.7	14.9	17.0	24.9	22.1						19.1	17.2	-	

☒ **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.TG16.**

☐ **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 2020 diffusion tube data has been uploaded to the Diffusion Tube Data Entry System.**

Notes:

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

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

See Appendix C for details on bias adjustment and annualisation.

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

New or Changed Sources Identified Within Braintree District During 2020

There is continual growth in homes being built in the district – with large residential developments on the edge of all the main towns being permitted and at various sites including the parishes of Kelvedon, Silver End, Cressing , Earls Colne, Coggeshall and Hatfield Peverel. The Horizon 120 site, a sustainable business park alongside the A131 at Great Notley nr Braintree has commenced construction. All large developments are required to submit air quality assessments and construction management plans to prevent, control and offset air pollution but the development will increase road traffic.

Additional Air Quality Works Undertaken by Braintree District Council During 2020

Braintree District Council has not completed any additional works within the reporting year of 2020

QA/QC of Diffusion Tube Monitoring

The nitrogen dioxide diffusion tubes are prepared and analysed by Socotec formerly known as Environmental Scientifics Group (ESG Didcot). The preparation method uses 50% triethanolamine (TEA) in acetone. The UKAS testing laboratory number is 1015.

AIR is an independent analytical proficiency-testing (PT) scheme, operated by LGC Standards and supported by the Health and Safety Laboratory (HSL). AIR PT is a new scheme, started in April 2014, which combined two long running quality assurance schemes PT schemes : LGC Standards STACKS PT scheme and HSL WASP PT scheme.

AIR offers a number of test samples designed to test the proficiency of laboratories undertaking analysis of chemical pollutants in ambient indoor, stack and workplace air. One such sample is the AIR NO2 test sample type that is distributed to participants in a quarterly basis.

Every quarter, roughly January, April, July and October each year, each laboratory receives four diffusion tubes doped with a known amount of nitrite, known to LGC

Standards, but not the participants. At least two of the tubes are usually duplicates, which enables precision, as well as accuracy, to be assessed. The masses of nitrite on the spiked tubes are different each quarter, and reflect the typical analytical range encountered in actual NO2 ambient monitoring in the UK

The results shown in the table below (Fig C.1) from the LAQM website https://laqm.defra.gov.uk/documents/LAQM%20NO2%20Performance%20data_Up%20to%20March%202021_v2.pdf indicate that SOCOTEC meets a satisfactory standard for analysis as shown in table below. Monitoring was completed in adherence with the 2020 Diffusion Tube Monitoring Calendar.

Fig C.1 below shows 2017 to 2019 summary of precision results for Nitrogen Dioxide diffusion tube collocation studies by laboratory

Table 1: Laboratory summary performance for AIR NO_2 PT rounds AR0030, 31, 33, 34, 36. 37, 39, 40 and 42

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 AR030	AIR PT AR031	AIR PT AR033	AIR PT AR034	AIR PT AR036	AIR PT AR037	AIR PT AR039	AIR PT AR040	AIR PT AR042
Round conducted in the period	January – February 2019	April – May 2019	July – August 2019	September – November 2019	January – February 2020	May – June 2020	July – August 2020	September – October 2020	January – March 2021
Aberdeen Scientific Services	75 %	100 %	100 %	100 %	100 %	NR [3]	NR [3]	100 %	100 %
Edinburgh Scientific Services	100 %	NR [2]	100 %	25 %	50 %	NR [3]	NR [3]	100 %	25 %
SOCOTEC	87.5 % [1]	100 % [1]	100 % [1]	100 % [1]	100 % [1]	NR [3]	NR [3]	100 % [1]	100 % [1]
Glasgow Scientific Services	100 %	100 %	100 %	50 %	100 %	NR [3]	NR [3]	100 %	50 %
Gradko International	75 %	100 %	100 %	100 %	75 %	NR [3]	NR [3]	75 %	25 %
Lambeth Scientific Services	50 %	100 %	50 %	100 %	100 %	NR [3]	NR [3]	100 %	100 %
Milton Keynes Council	100 %	100 %	50 %	100 %	100 %	NR [3]	NR [3]	25 %	0 %
Somerset Scientific Services	100 %	100 %	100 %	100 %	100 %	NR [3]	NR [3]	100 %	100 %
South Yorkshire Air Quality Samplers	100 %	100 %	100 %	75 %	100 %	NR [3]	NR [3]	100 %	100 %
Staffordshire County Council	100 %	75 %	75 %	75 %	100 %	NR [3]	NR [3]	50 %	100 %
Tayside Scientific Services (formerly Dundee CC)	100 %	NR [2]	100 %	NR [2]	100 %	NR [3]	NR [3]	100 %	NR [2]
West Yorkshire Analytical Services	100 %	100 %	100 %	50 %	100 %	NR [3]	NR [3]	NR [2]	NR [2]

Diffusion Tube Annualisation

One site BR23 at Mill View in Bradwell is alongside the A120 in the 40mph zone at the façade of property and with only 50% data capture being less than the required 75% data capture then annualisation was necessary. Calculation was undertaken using the Diffusion Tube Data Processing Tool. Full year monitoring data from two roadside sites at Standford-Le Hope and Sandy Hill were used and data is provided in Table C.2. Annualisation summary.

All other diffusion tube monitoring locations within Braintree District recorded data capture of 75% therefore it was not required to annualise this monitoring data.

Diffusion Tube Bias Adjustment Factors

The diffusion tube data presented within this Annual Status Report (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.TG16 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 0.77 to the 2020 monitoring data. A summary of bias adjustment factors used by Braintree District Council over the past five years is presented in Table C.1.

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A national bias adjustment is applied from version 03/21 version of the national spreadsheet https://laqm.defra.gov.uk/bias-adjustment-factors/national-bias.html and there are 22 studies applicable to the factor used. The number of studies of 22 is comparable to the number of studies in 2019 and 2018 which were 24 and 21 respectively.

Table C.1 – Bias Adjustment Factor

Year	Local or National	If National, Version of National Spreadsheet	Adjustment Factor
2020	National	03/21	0.77
2019	National	03/20	0.75
2018	National	03/19	0.76
2017	National	03/18	0.77
2016	National	03/17	0.77

NO_2 Fall-off with Distance from the Road

Wherever possible, local authorities should ensure that monitoring locations are representative of exposure. However, where this is not possible, the NO_2 concentration at the nearest location relevant for exposure should be 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.

For both BR3 (alongside the A12 at Foxden Rivenhall) and BR14 (a kerbside location at Head Street in Halstead) – residential property facades are distant from the diffusion tube location. BR14 is a pavement location and chosen to assess the short term objective level should the annual mean concentration exceed 60µg/m^3 . The output from the Diffusion Tube Data Processing Tool is presented in Table C.4 with no exceedance of the annual mean.

Table C.2 – Annualisation Summary (concentrations presented in µg/m^3)

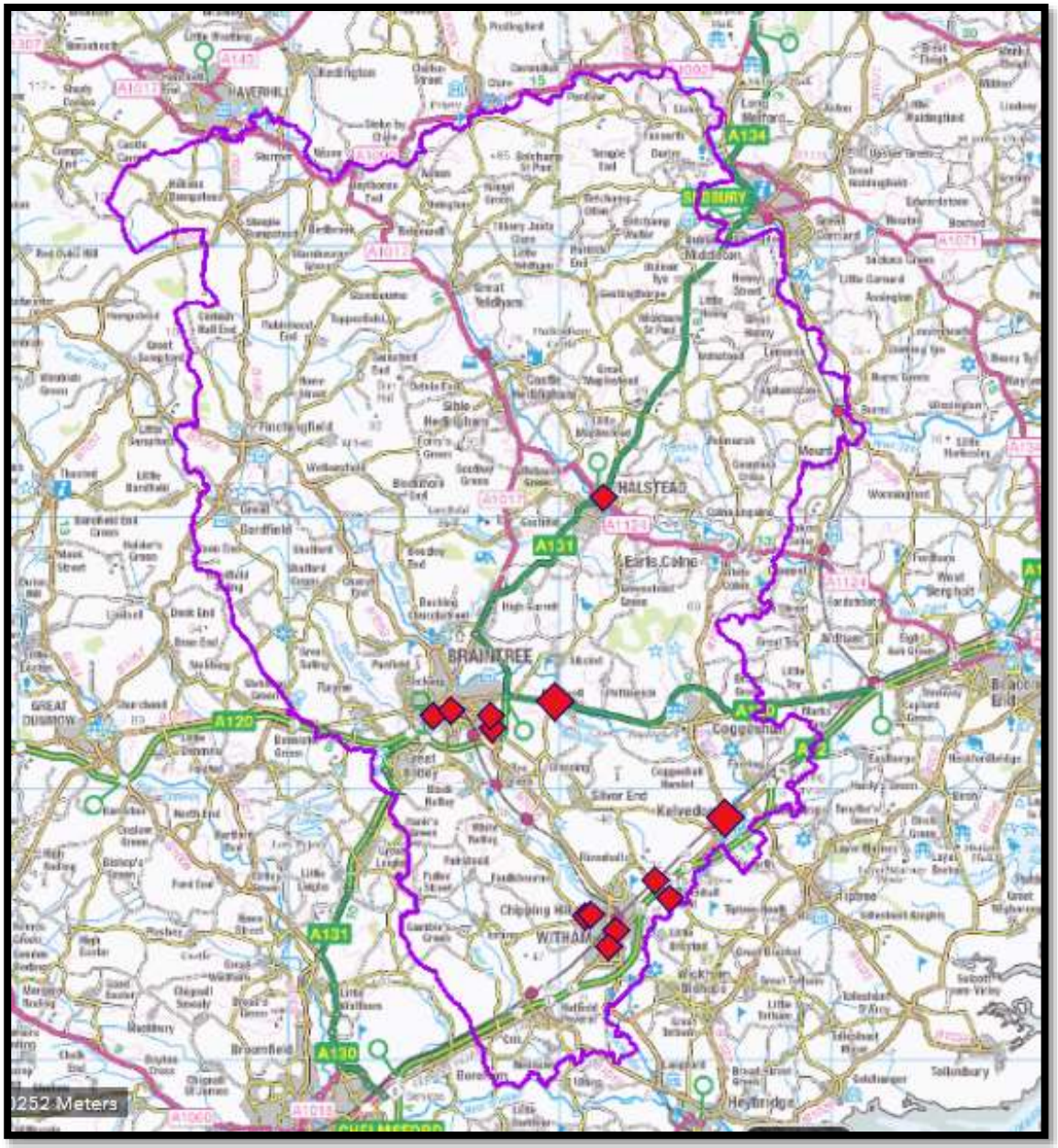
Site ID	Annualisation Factor Stanford le Hope Roadside	Annualisation Factor Sandy Roadside	Annualisation Factor Site 3 Name	Annualisation Factor Site 4 Name	Average Annualisation Factor	Raw Data Annual Mean	Annualised Annual Mean	Comments
BR23	1.0932	1.2455	n/a	n/a	1.1693	19.1	22.4	*Below annual mean objective level of 40µg/m^3*

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

Site ID	Distance (m): Monitoring Site to Kerb	Distance (m): Receptor to Kerb	Monitored Concentration (Annualised and Bias Adjusted	Background Concentration	Concentration Predicted at Receptor	Comments
BR3	2.0	21.0	37.2	13.6	24.2	*Warning: your receptor is more than 20m further from the kerb than your monitor - treat result with caution.*
BR14	0.7	30.7	47.6	11.3	21.8	*Warning: your receptor is more than 20m further from the kerb than your monitor - treat result with caution.*

Appendix D: Map(s) of Monitoring Locations

Fig D.1.1 - NO_2 Diffusion Tube Locations for Braintree District area (year 2020)



◆ symbol indicates location of diffusion tube (N.B. in Halstead there are six tube locations within small area so shown as one location, site at Kelvedon is BR11 (*not shown in separate maps below*))

Fig D.1.2 - NO_2 Diffusion Tube Locations for Braintree Town and Bradwell

(BR23 – short term assessment location opposite side of road to BR12 is not shown and has now been removed)

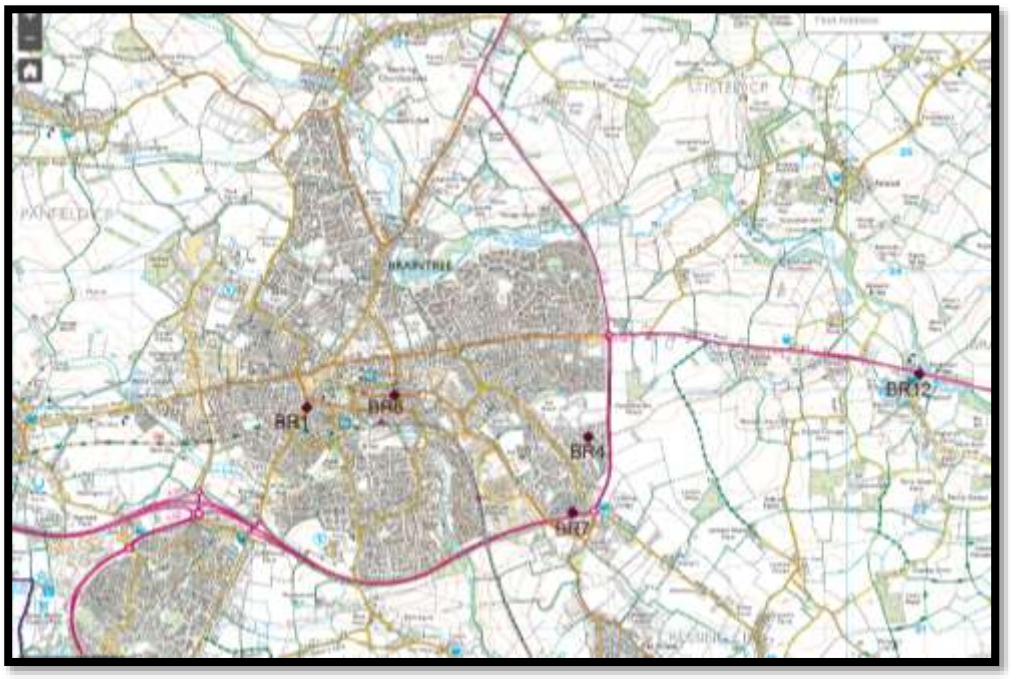
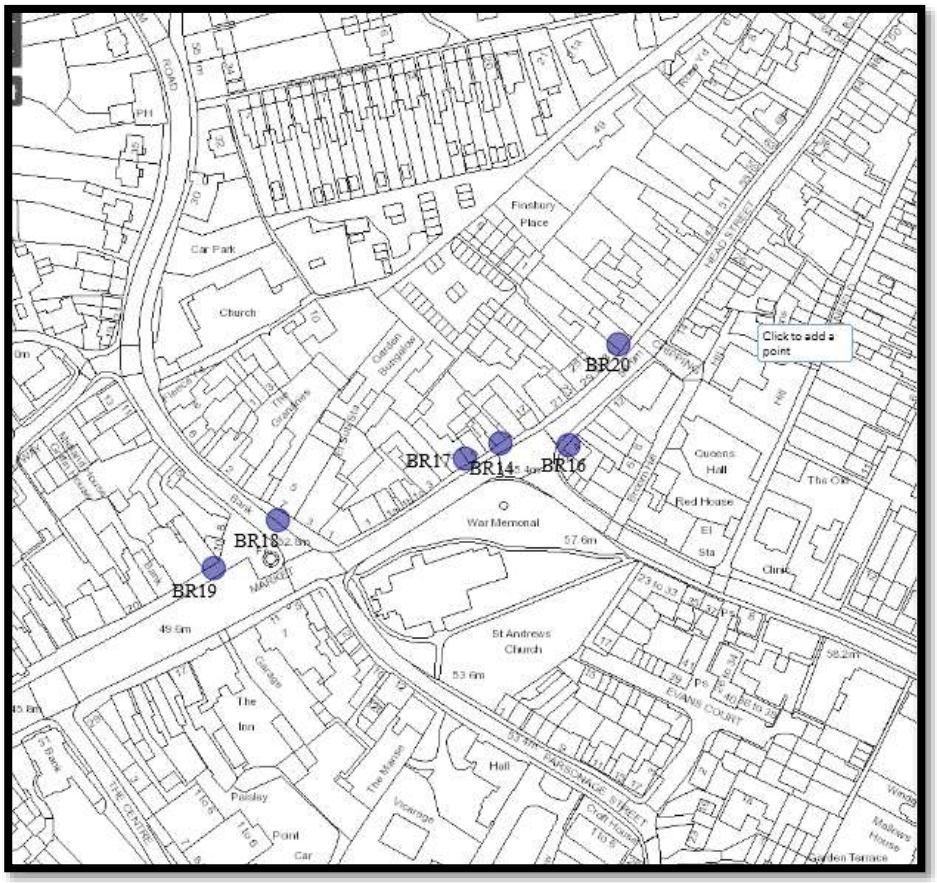


Fig D.1.3 –NO_2 Diffusion Tube Locations for Witham Town and Rivenhall

Fig D.4 - NO_2 Diffusion Tube Locations for Halstead Town referred to in this report – BR19 now removed



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).

Appendix F: Impact of COVID-19 upon LAQM

COVID-19 has had a significant impact on society. Inevitably, COVID-19 has also had an impact on the environment, with implications to air quality at local, regional and national scales.

COVID-19 has presented various challenges for Local Authorities with respect to undertaking their statutory LAQM duties in the 2021 reporting year. Recognising this, Defra provided various advice updates throughout 2020 to English authorities, particularly concerning the potential disruption to air quality monitoring programmes, implementation of Air Quality Action Plans (AQAPs) and LAQM statutory reporting requirements. Defra has also issued supplementary guidance for LAQM reporting in 2021 to assist local authorities in preparing their 2021 ASR. Where applicable, this advice has been followed.

Despite the challenges that the pandemic has given rise to, the events of 2020 have also provided Local Authorities with an opportunity to quantify the air quality impacts associated with wide-scale and extreme intervention, most notably in relation to emissions of air pollutants arising from road traffic. The vast majority (>95%) of AQMAs declared within the UK are related to road traffic emissions, where attainment of the annual mean objective for nitrogen dioxide (NO_2) is considered unlikely. On 23rd March 2020, the UK Government released official guidance advising all members of public to stay at home, with work-related travel only permitted when absolutely necessary. During this initial national lockdown (and to a lesser extent other national and regional lockdowns that followed), marked reductions in vehicle traffic were observed; Department for Transport (DfT) data[8] suggests reductions in vehicle traffic of up to 70% were experienced across the UK by mid-April, relative to pre COVID-19 levels.

This reduction in travel in turn gave rise to a change of air pollutant emissions associated with road traffic, i.e. nitrous oxides (NO_x), and exhaust and non-exhaust particulates (PM). The Air Quality Expert Group (AQEG)[9] has estimated that during the initial lockdown period in 2020, within urbanised areas of the UK reductions in NO_2 annual mean concentrations were between 20 and 30% relative to pre-pandemic levels, which

[8] Prime Minister's Office, COVID-19 briefing on the 31st of May 2020

[9] Air Quality Expert Group, Estimation of changes in air pollution emissions, concentrations and exposure during the COVID-19 outbreak in the UK, June 2020

represents an absolute reduction of between 10 to 20µg/m^3 if expressed relative to annual mean averages. During this period, changes in $PM_{2.5}$ concentrations were less marked than those of NO_2. $PM_{2.5}$ concentrations are affected by both local sources and the transport of pollution from wider regions, often from well beyond the UK. Through analysis of AURN monitoring data for 2018-2020, AQEG have detailed that $PM_{2.5}$ concentrations during the initial lockdown period are of the order 2 to 5µg/m^3 lower relative to those that would be expected under business-as-usual conditions.

As restrictions are gradually lifted, the challenge is to understand how these air quality improvements can benefit the long-term health of the population.

Impacts of COVID-19 on Air Quality within Braintree District Council

Braintree District Council has no AQMAs but notes that the monitored concentrations of NO2 between March and June of 2020 were significantly reduced against the same time period for 2019. For Head Street at Halstead then concentrations within that time period in 2020 are reduced by in the order of 45% and do not return to the levels monitored at the start of the year at any time in 2020. Essex was subject to higher tier Covid restrictions in November and throughout December and as can be seen in Table A4 showing non automatic monitoring results for 2017 to 2021 reduced the annual mean concentrations were reduced by between 15 and 29 % more commonly by at least 20%.

Opportunities Presented by COVID-19 upon LAQM within Braintree District Council

No LAQM related opportunities have arisen directly as a consequence of COVID-19 within Braintree District Council.

Challenges and Constraints Imposed by COVID-19 upon LAQM within Braintree District Council

Tubes were exposed in accordance with the set exposure dates. On occasions tubes would be stored for longer prior to being sent for analysis due to home-working but would be stored in accordance with guidance so this would present a small impact.

No significant challenges or constraints relating to LAQM have arisen during 2020 as a consequence of COVID-19 within Braintree District.

Table F 1 – Impact Matrix

Category	Impact Rating: None	Impact Rating: Small	Impact Rating: Medium	Impact Rating: Large
Automatic Monitoring – Data Capture (%)	More than 75% data capture	50 to 75% data capture	25 to 50% data capture	Less than 25% data capture
Automatic Monitoring – QA/QC Regime	Adherence to requirements as defined in LAQM.TG16	Routine calibrations taken place frequently but not to normal regime. Audits undertaken alongside service and maintenance programmes	Routine calibrations taken place infrequently and service and maintenance regimes adhered to. No audit achieved	Routine calibrations not undertaken within extended period (e.g. 3 to 4 months). Interruption to service and maintenance regime and no audit achieved
Passive Monitoring – Data Capture (%)	More than 75% data capture	50 to 75% data capture	25 to 50% data capture	Less than 25% data capture
Passive Monitoring – Bias Adjustment Factor	Bias adjustment undertaken as normal	<25% impact on normal number of available bias adjustment colocation studies (2020 vs 2019)	25-50% impact on normal number of available bias adjustment studies (2020 vs 2019)	>50% impact on normal number of available bias adjustment studies (2020 vs 2019) and/or applied bias adjustment factor studies not considered representative of local regime
Passive Monitoring – Adherence to Changeover Dates	Defra diffusion tube exposure calendar adhered to	Tubes left out for two exposure periods	Tubes left out for three exposure periods	Tubes left out for more than three exposure periods
Passive Monitoring – Storage of Tubes	Tubes stored in accordance with laboratory guidance and analysed promptly.	Tubes stored for longer than normal but adhering to laboratory guidance	Tubes unable to be stored according to be laboratory guidance but analysed prior to expiry date	Tubes stored for so long that they were unable to be analysed prior to expiry date. Data unable to be used
AQAP – Measure Implementation	Unaffected	Short delay (<6 months) in development of a new AQAP, but is on-going	Long delay (>6 months) in development of a new AQAP, but is on-going	No progression in development of a new AQAP
AQAP – New AQAP Development	Unaffected	Short delay (<6 months) in development of a new AQAP, but is on-going	Long delay (>6 months) in development of a new AQAP, but is on-going	No progression in development of a new AQAP

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 Highways England
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.TG16. April 2021. 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.PG16. May 2016. Published by Defra in partnership with the Scottish Government, Welsh Assembly Government and Department of the Environment Northern Ireland.