



***Boston Borough Council
Annual Status Report 2021***

Bureau Veritas

June 2021



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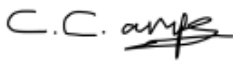



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2021 Air Quality Annual Status Report (ASR)

In fulfilment of Part IV of the Environment Act 1995
Local Air Quality Management

Date: June 2021

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Executive Summary: Air Quality in Our Area

Air Quality in Boston Borough Council

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 ages³, with a total estimated healthcare cost to the NHS and social care of £157 million in 2017⁴.

High usage of private vehicles for short frequent trips within Boston are a major cause of Boston's air quality issues. Nearly half of Boston's work commutes are made by private motor vehicles and start and end in Boston. These journeys are made predominantly along major arterial roads including; Sleaford Road, John Adams Way, Spalding Road and Spilsby Road, which causes peak period congestion. Boston Borough Council currently has two designated Air Quality Management Areas (AQMA) located at Haven Bridge and Bargate Bridge (https://uk-air.defra.gov.uk/aqma/local-authorities?la_id=27), declared in 2001 and 2005 respectively. The two AQMAs have been declared in relation to exceedances of the AQS annual mean objective of 40 µg/m³ for NO₂, largely due to traffic emissions from private vehicles along major arterial roads, which all connect to form the main transportation network within the region. These high-capacity roads pass by residential areas where exposure is at its highest, thus raising public health concerns.

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

To outline the actions to be taken to improve air quality within the local authority, Boston Borough Council have introduced a 2020 Air Quality Action Plan (AQAP).

During 2020, the mean annual NO₂ concentrations have decreased at all 15 sites when compared to 2019 concentrations. This is in line with the 2020 national decrease in NO₂ concentrations due to a reduction in road traffic emissions resulting from Covid-19 restrictions.

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 Strategy⁵ sets out the case for action, with goals even more ambitious than EU requirements to reduce exposure to harmful pollutants. The Road to Zero⁶ 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.

The Council have implemented a number of measures during 2020 to target sources of pollution in the Borough. The measures include, improving transport links, encouraging greener modes of transport, and implementing standards and air quality assessments for construction sites. The Council have faced some challenges in implementing some measures due to the Covid-19 pandemic and changes in national guidance. Despite the challenges faced by the Council, some measures, including requesting air quality assessments for developments that are likely to have significant impact on air quality, have still been implemented.

Across the UK, there has been a general reduction in road traffic throughout 2020, as a consequence of Covid-19 restrictions. It is therefore difficult to conclude whether the

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

reduction in NO₂ annual mean concentrations has been caused by the implementation of Boston Borough Council's measures.

Conclusions and Priorities

During 2020, exceedances of the NO₂ annual mean objective were only identified at one site within the Haven Bridge AQMA. The NO₂ annual mean concentrations at the 14 other sites were not within 10% of the annual mean objective of 40 µg/m³. This is the first time in over 4 years that only one site has exceeded the annual mean objective and shows NO₂ concentrations in Boston Borough Council are declining. NO₂ concentrations at over half of the sites have been declining since 2018 and the measures Boston Borough Council have put in place are likely to have contributed to the continuation in decline in concentrations. The Covid-19 pandemic, however, has played a major part in the reduction of NO₂ concentrations across the UK therefore the significant fall in annual mean NO₂ concentrations is partly attributed to this.

The 2020 AQAP outlines the following as being key priorities for Boston Borough Council in addressing air quality:

- Improve traffic flows within Boston;
- Increase public awareness on local air quality, including the promotion of alternative methods of transport;
- Low emission public transport for the town centre;
- Electric vehicle uptake encouragement;
- Assessments of air quality and dust control standards to be implemented for new developments and construction sites;
- Low emission updates to existing fleet; and
- Encouragement of increased rail use, both for freight and passenger rail.

In recent years the level of NO₂ within the Bargate Bridge AQMA have fallen and there is now consistent compliance with the AQS annual mean objective of 40 µg/m³. The reduction in nitrogen dioxide levels within the AQMA was declared is likely resultant from improvements in vehicular engines and fuels driven by UK Government and EU legislation. As a result of the consistent compliance with the annual mean objective, the Council are considering revocation of the Bargate Bridge AQMA and have consulted widely on revoking the AQMA towards the end of 2021. The Council plan to continue

monitoring after the revocation of the AQMA to ensure concentrations remain below the annual mean objective.

Local Engagement and How to get Involved

As transport is the main source of air pollution within Boston Borough Council, a good way for the public to contribute to improving air quality is to look less polluting travel options.

The following are suggested alternatives to private travel that are given within the AQAP measures that would contribute to improving the air quality within the Borough:

- Encouragement of electric vehicle use – The Council are increasing electric charging points across the Borough;
- Use of public transport – Facility improvements and investigations into the feasibility of the provision of lower emission buses are being carried out. This will help reduce pollutant concentrations through the reduction in the number of private vehicles and congestion; and
- Walk or cycle if your journey allows – Improvements to cycling infrastructure and promotion of alternative travel are taking place across the Borough. From choosing to walk or cycle, the number of vehicles is reduced and there is the added benefit of keeping fit and healthy.

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1 Local Air Quality Management

This report provides an overview of air quality in Boston Borough 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 Boston Borough Council to improve air quality and any progress that has been made.

The statutory air quality objectives applicable to LAQM in England are presented in Table E.1.

2 Actions to Improve Air Quality

2.1 Air Quality Management Areas

Air Quality Management Areas (AQMA) 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.

A summary of AQMA declared by Boston Borough Council can be found in Table 2.. The table presents a description of the two AQMA that are currently designated within Boston Borough Council. Appendix D: Map(s) of Monitoring Locations and AQMA provides maps of AQMA and also the air quality monitoring locations in relation to the AQMA. The air quality objective pertinent to the current AQMA designations:

- Nitrogen Dioxide (NO₂) annual mean

Boston Borough Council are considering revocation of the Bargate Bridge AQMA as, in recent years levels of NO₂ within this AQMA have fallen and there is now consistent compliance with the AQS annual mean objective of 40 µg/m³. The LAQM Covid-19 Guidance note states:

“We advise against considering the revocation of an AQMA based solely upon compliance being achieved in 2020, as this year may not be representative of long-term trends in pollutant concentrations and we must be confident that air quality objectives will continue to be met in future years. Where 2020 is one of many (i.e. at least three) consecutive years of compliance, this may still be considered for revocation where the supporting evidence is considered suitably robust.”

As monitoring has now been below 40µg/m³ for three years within the Bargate AQMA, it is considered that the effect of the Covid-19 pandemic is not solely responsible for the reduction of concentrations and so it is appropriate to consider revocation. Table 2.1 and Table 2.2 below show monitored concentrations over the last 7 years within the areas of highest monitored concentrations.

Table 2.1 – Monitored Annual Nitrogen Dioxide Levels within AQMA ($\mu\text{g}/\text{m}^3$)

Site Description	2014	2015	2016	2017	2018	2019	2020
Bargate Roundabout	34.2	31.1	31.1	31.3	32.5	31.3	30.1
30 Spilsby Road	46.6	44.2	41.5	43.6	39.4	37.0	36.9
20 Spilsby Road	41.6	36.6	36.7	37.1	37.8	35.8	33.6
23 Spilsby Road	31.7	28.5	28.2	27.7	27.9		
32 Spilsby Road	25.2	21.4	21.8	22.5	21.8		

Red = above AQS; Yellow=within 10% of AQS; Green=>10% below AQS

Table 2.2 – Distance Correct Annual Nitrogen Dioxide Levels ($\mu\text{g}/\text{m}^3$) at 20 & 30 Spilsby Road, Boston

Site Description	2014	2015	2016	2017	2018	2019	2020
30 Spilsby Road 6m	38.0	36.2	34.2	35.8	32.7	30.9	30.8
20 Spilsby Road 5m	35.5	31.6	31.7	32.0	32.5	30.9	28.3

Red = above AQS; Yellow=within 10% of AQS; Green=>10%below AQS

Table 2.3 – Declared Air Quality Management Areas

AQMA Name	Date of Declaration	Pollutants and Air Quality Objectives	One Line Description	Is air quality in the AQMA influenced by roads controlled by Highways England?	Level of Exceedance: Declaration	Level of Exceedance: Current Year	Name and Date of AQAP Publication	Web Link to AQAP
AQMA 1 - Haven Bridge	10/09/2001	NO ₂ Annual Mean	A major highway consisting of John Adams Way (A16), Queen Street and Liquorpond Street (A52).	NO	44.7 µg/m ³	42.1 µg/m ³	Boston Borough Council, Air Quality Action Plan 2020	https://www.mybostonuk.com/wp-content/uploads/2020/08/Boston-Borough-Council-AQAP2020-Final-1.pdf
AQMA 2 - Bargate Bridge	01/03/2005	NO ₂ Annual Mean	Key roundabout for the A16 and A1137.	NO	42.9 µg/m ³	29.9 µg/m ³	Boston Borough Council, Air Quality Action Plan 2020	https://www.mybostonuk.com/wp-content/uploads/2020/08/Boston-Borough-Council-AQAP2020-Final-1.pdf

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

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

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

- “After completion of a detailed assessment in 2018, BBC considered amending their existing AQMAs potentially into a proposed singular AQMA after continued monitoring. However, the Council have stated that they intend to keep the Haven Bride AQMA and will review the Bargate Bridge AQMA for potential revocation.” The council are taking steps to revoke the Bargate Bridge AQMA.
- “...only 2 monitoring sites exceeded the NO₂ annual mean objective. Both within the Haven Bridge AQMA.” Only one monitoring site exceeded the NO₂ annual mean objective during 2020.
- “For the diffusion tubes that have been present for a number of years, there is a largely downward trend apparent for 7 diffusion tubes (DT3, DT8, DT9, DT12, DT14, DT20 & DT21) with a slight increase in comparison to 2018 concentrations at DT1, DT4 & DT5.” The downward trend continued during 2020, with diffusion tube concentrations decreasing at each site.

Boston Borough 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.. 20 measures are included within Table 2., with the type of measure and the progress Boston Borough 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..

More detail on these measures can be found in their respective Action Plans. Key completed measures are:

- M8: Request air quality assessments for developments that are likely to have significant impact on air quality;
- M12: Implement standards for dust and emissions from large construction sites;
- M13: Promote travel plans for new developments;

- M14: Liaise with EA in respect of industrial emissions from permitted sites to ensure AQMAs considered when setting emission standards – the Council’s Environmental Health team acts as a statutory consultee on all Part A1 permit applications. The Environmental Health team ensures all appropriate screening has taken place with regards to emissions to air and that there is no detriment to current AQMA's; and
- M15: Promote green waste services and discourage use of bonfires for disposal of waste at domestic and commercial sites.

Boston Borough Council expects the following measure to be completed over the course of the next reporting year:

- Emission Standards for Taxis

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

- For the installation of EV infrastructure (M4) there is a major reliance on grant funding and poor grid capacity out of the main town centre, which inhibits rapid charging.
- There are no realistic options for low emission zones (M20) due to one major bridge crossing of river Haven that divides town north to south. All main routes cross this bridge no alternative routes available, therefore measure 20 is limited to promotion of good fleet management.

Progress on the following measures has been slower than expected due to:

- The Covid-19 pandemic has severely affected passenger numbers and therefore most routes and bus operators require the support of LCC/CG and bus operators. This has impacted the introduction of cleaner buses and the increase of bus services into town (M7 and M6).
- The investigation reduced car parking charges for EV/Hybrid vehicles in LA car parks and priority parking for these vehicles has been aborted. This is because the Covid-19 pandemic resulted in car parking charges being reduced to zero at times to support business and help recovery. Whilst this decision may have help economically, it may discourage greener transport options.

Table 2.4 – 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	Provision of Outer Distributor Road	Transport Planning and Infrastructure	Other	2018	2032	Lincolnshire County Council	DfT, Midlands Direct, LCC, Private sector	NO	Partially Funded	> £10 million	Implementation	Significantly reduce levels of HGV's achievement of annual target mean <40microgrammes/m3	Traffic count/non-automated monitoring	Phase 1 of Boston Distributor Road completed as part of Quadrant development scheme linking A16 with B1397. Feasibility study funded by LCC of Quadrant stage 2 including link from B1397 to A52 commissioned	Full distributor road scheme (bypass) requires support and funding of Midlands direct - not currently on their radar. DfT will not fund feasibility study directly despite local MP approach costs of which are otherwise prohibitive for LCC/BBC. Current phase 1 a delivered by private sector development
2	Improve Traffic Flows	Traffic Management	Strategic highway improvements, Re-prioritising road space away from cars, including Access management, Selective vehicle priority, bus priority, high vehicle occupancy lane	2019	2024	Lincolnshire County Council	Lincolnshire County Council	NO	Partially Funded	£100k - £500k	Planning	Significant	Traffic count/non-automated monitoring	LCC looking at 9 potential road/junction improvement schemes in the town - 6 schemes now not progressing to full feasibility study as found to not off significant improvement to traffic flows. Improvements. Alteration to queuing arrangement to McDonalds on Queen Street trading park has been	Review and refresh of Boston Transport Strategy to begin July 2021

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
														achieved by informal arrangement. This prevents traffic backing up into Queen Street and causing significant congestion at peak times. Queen Street in Bargate Bridge AQMA.	
3	Emission Standards for Taxis	Promoting Low Emission Transport	Taxi Licensing conditions	2019	2021	Boston Borough Council	Boston Borough Council	NO	Funded	< £10k	Implementation	Minor	NO2 levels around taxi ranks	Internal meetings taken place with Licensing team and agreement reached on implementation-	Part of full review of taxi licensing policy and therefore will need to go through council committee procedures
4	Encourage the use of electric vehicles by providing public charging points	Promoting Low Emission Transport	Procuring alternative Refuelling infrastructure to promote Low Emission Vehicles, EV recharging, Gas fuel recharging	2019	2023	Boston Borough Council Lincolnshire County Council OLEV	External Grant funding	NO	Partially Funded	£50k - £100k	Implementation	Minor	Measure usage of local authority controlled EV points	23 EV charging points installed with major car parks operated by Boston BC with OLEV funding. Additional charging points for 8 other car park locations being considered under central Government grant scheme. Numerous EV charging points achieved at commercial development through development control processes. WSP consultancy has been commissioned	Major reliance on grant funding to install EV infrastructure. Poor grid capacity out of main town centre inhibitor to rapid charging.

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	
															by LCC to develop a strategy to accelerate ULEV take up, assessing electric vehicle infrastructure requirement across the county and identify barriers which may slow the transition to electric vehicles. Boston BC met with WSP to input into the study the findings of which are expected late 2021.	
5	Encourage electric charging facilities in new build homes and commercial premises through the development process	Promoting Low Emission Transport	Procuring alternative Refuelling infrastructure to promote Low Emission Vehicles, EV recharging, Gas fuel recharging	2019	2023	Boston Borough Council	Boston Borough Council	NO	Funded	< £10k	Implementation	Minor	Monitor via planning enforcement of conditions requiring EV charging	Air Quality and mitigations now fully embedded in planning process via local plan and additional guidance to developers produced by Boston BC. Requirements for AQ mitigations, including the provision of EV charging now routinely required on planning applications for new residential and commercial developments.		
6	Into town bus service - increase patronage/service provision	Alternatives to private vehicle use	Other	2019	2022	Lincolnshire county Council	Lincolnshire County Council	NO	Not Funded	£100k - £500k	Planning	Moderate	Increase public transport use	Boston Transport Strategy Group to look at review of into town bus services in terms of	Covid-19 pandemic has severely affected passenger numbers and therefore	

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	
															timings and routes including if they can extend to main employment areas. All bus stops now include code than can be texted to get real time next bus information.	most routes and bus operators have had to be support by LCC/CG just to survive. Needs support and cooperation of bus operators.
7	Investigate the provision of cleaner buses for in to town services (other bus routes)	Alternatives to private vehicle use	Other	2019	2024	Lincolnshire County Council /WSP consultancy	Lincolnshire County Council/Grant Funding for CG	NO	Not Funded	£1 million - £10 million	Planning	Minor	Low emission bus procurement/routes	WSP commissioned by LCC to look at whether certain bus routes across Lincolnshire lend themselves to alternatively fuelled buses. Included within the 30 routes shortlisted for study include 10 that service Boston including the 'into town' services. Major local bus provider in Boston part of study and actively involved.	Needs cooperation of existing bus operators and likely external funding sources to move to alternative fuels.	
8	Request air quality assessments for developments that are likely to have significant impact on air quality	Policy Guidance and Development Control	Air Quality Planning and Policy Guidance	2019	2020	Boston Borough Council	Boston BC	NO	Funded	< £10k	Completed	Minor	Obtain the additional AQ information and report on any impacts in ASR	Requirements embedded in South Lincolnshire Local Plan - Air Quality guidance based around national guidance produced for developer and provided on website.		
9	Investigate reduced car parking charges	Promoting Low	Priority parking for LEV's	2019	2020	Boston Borough Council	Boston BC	NO	Not Funded	£100k - £500k	Aborted	Minor	N/A	New EV charging point provided with	Loss of vital revenue to local	

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	
	for EV/Hybrid vehicles in LA car parks and priority parking for such vehicles	Emission Transport													dedicated space for EV only. Covid19 resulted in car parking charges being reduced to zero for 1sr hour to support business and help recovery. Whilst this decision may help economically may discourage greener transport options. To revisit as charges re-instated.	authority through loss of car parking income.
10	Promote cycling and walking as an alternative to cars	Promoting Travel Alternatives	Promotion of cycling	2019	2023	Lincolnshire County Council/Boston Borough Council	Lincolnshire County Council	NO	Partially Funded	£100k - £500k	Implementation	Minor	Increase numbers of participants / traffic counts	The Boston Transport Strategy proposes a number of measures to promote walking. In addition, all schools in the Boston area now have an approved School Travel Plans to encourage walking, cycling and bus use. LCC are working Cycling and Walking Network Plan for Boston that will provide a basis for investment in active travel going into the future.	Review and refresh of Boston Transport Strategy to begin July 2021	
11	Encourage low emission vehicles in the wider community	Promoting Low Emission Transport	Other	2019	2023	Boston Borough Council	Boston Borough Council	NO	Funded	£10k - 50k	Implementation	Moderate	Traffic counts/non automated monitoring	Actively requires EV charging through planning	Webpages need to be more prominent -	

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	
															process. Provision of EV charging in council car parks. Promotes EV and ULEV's on its website with links to GO ULTRA LOW and OLEV grant funding schemes.	need to explore
12	Implement standards for dust and emissions from large construction sites	Policy Guidance and Development Control	Air Quality Planning and Policy Guidance	2019	2021	Boston Borough Council	Boston Borough Council	NO	Funded	< £10k	Completed	Minor	Number of complaints regarding construction/demolition activities	Construction management plans now routinely requested for larger developments both residential and commercial. These must include dust control measures. Construction Management Plans conditioned as part of planning consent process. Guidance to developers produced and available on councils website. Also request method statements for demotion notices through Building Control. Complaints (very few) promptly investigated.		
13	Promote travel plans for new developments	Policy Guidance and Development Control	Air Quality Planning and Policy Guidance	2019	2019	Boston Borough Council/Lincolnshire County Council	Boston Borough Council	NO	Funded	< £10k	Completed	Minor	Air Quality assessments, conclusions and data			

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
14	Liaise with EA in respect of industrial emissions from permitted sites to ensure AQMAs considered when setting emission standards	Environmental Permits	Measures to reduce pollution through IPPC Permits going beyond BAT	2019	2019	Boston Borough Council	Boston Borough Council	NO	Funded	< £10k	Completed	Negligible	100% response rate to consultations received	Environmental Health at BBC acts as a statutory consultee on all Part A1 permit applications, MCPD applications and certain permitted waste operations made to the agency. BBC ensures all appropriate screening has taken place with regards to emissions to air and that no detriment to current AQMA's. Stricter emission targets requested in such event.	
15	Promote green waste services and discourage use of bonfires for disposal of waste at domestic and commercial sites	Public Information	Via the Internet	2019	2019	Boston Borough Council	Boston Borough Council	NO	Funded	< £10k	Completed	Negligible	tonnage green waste collected/formal actions on waste related burning	Regularly publicity around the garden waste collection service - this year 12k signed up for garden waste collections. A proportion of this waste would have been burned on garden fires causing localised nuisance and contributing to poor air quality. Robust enforcement of complaints regarding burning and promotion of greener alternatives for	Support Boston BC climate change agenda

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
														disposal of green wastes	
16	Investigate the use of council procurement procedures as a tool to encourage greener transport services	Promoting Low Emission Plant	Other Policy	2019	2023	Boston Borough Council	Boston Borough Council	NO	Partially Funded	£500k - £1 million	Implementation	Negligible	Number of low emission vehicles procured	Council is small and therefore fleet vehicle numbers small however this year replace street sweeper, 7 refuse collection vehicles and tractor all of which are Euro 6 compliant. More work to be done in respect of this measure.	Additional costs of procurement
17	Provision of AQ information to the public	Public Information	Via the Internet	2019	2020	Boston Borough Council	Boston Borough Council	NO	Funded	< £10k	Implementation	Negligible	Webpage views	Implemented in part with dedicated webpages on AQ and transport related issues	Look to rationalise all AQ information to one page
18	Work with operators to increase the use of rail freight/shipping and passenger services	Alternatives to private vehicle use	Other	2019	2024	Lincolnshire County Council/Boston Borough Council/East Midlands Rail	Boston Borough Council/Lincolnshire County Council/Port of Boston/Network Rail	NO	Partially Funded	> £10 million	Planning	Moderate	Rail passenger figures / Tonnage of freight moved by rail	As part of the councils town fund bid which has been successful East Midlands rail has proposed station enhancements to supplement the town funds intent to a transport interchange and rail to town centre cycle routes. Current discussions ongoing with LCC Economic development, Port of Boston, Network Rail regarding a new link access to port	

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	
															and to encourage more rail freight through the port. This would also reduce significant rail/road crossing down time at a number of rail crossings which lead to congestion in the Haven Bridge AQMA. Port of Boston currently moving 225 000 tonnes a year of freight by train which is equivalent to 18000 HGV's a year all of which would pass through Haven Bridge AQMA.	
19	Workplace lift sharing scheme	Promoting Travel Alternatives	Workplace Travel Planning	2019	2023	Liccolnshire County Council Public Health/Boston Borough Council	Boston Borough Council	NO	Not Funded	< £10k	Aborted	Negligible	Number of car users/levels of revenue from parking	Liaison with Public Health at LCC commenced but has not progressed at this time due to Covid-19 - car sharing did not lend itself to car sharing during pandemic. There are national schemes that could be promoted in future across Boston and wider Lincolnshire - may be revisited in future.	Currently aborted but may resist during life of AQAP.	
20	Promote good fleet management, fuel efficiency	Promoting Low Emission Transport	Other	2019	2022	Boston Borough Council	Boston Borough Council	NO	Funded	< £10k	Implementation	Negligible		Promotion of the Energy Savings Trust free guidance	No realistic options for low emission	

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	
	and new technologies with local LGV/HGV business operators														and assistance to fleet operators and eco driving schemes. Circular letter and information sent out to local fleet operators in September 2020 - positive response by some larger operators who advised they would be following up with energy saving trust to see their offer.	zones due to one major bridge crossing of river Haven that divides town north to south. All main routes cross this bridge no alternative routes available. Therefore, limited to promotion of good fleet management.

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.

The current Defra 2020 background maps for Boston Borough Council (2018 based⁷) show that all background concentrations of PM_{2.5} are well below the 2020 annual mean objective for PM_{2.5}. The highest concentration is predicted to be 9.6µg/m³ within the 1km x 1km grid square with the centroid grid reference of 532500, 343500.

The Public Health Outcomes Framework data tool⁸ compiled by Public Health England (PHE) quantifies the mortality burden of PM_{2.5} within England on a county and local authority scale. The 2019 fraction of mortality attributable to PM_{2.5} pollution across England is 5.1%. Boston is slightly higher at 5.3% which is the same as the East Midlands region average.

Boston Borough Council aren't taking any specific measures to address PM_{2.5} but are taking measures to address NO₂ which will subsequently affect PM_{2.5} concentrations. These measures go as follows:

- 1) M8- Request air quality assessments for proposed developments that are likely to have significant impact on local air quality
- 2) M12- Implement standards for control of dust from and emissions from large construction sites
- 3) M14- Liaise with Environment Agency in respect of industrial emissions from permitted sites to ensure AQMA considered when setting emission standards

⁷ Defra Background Mapping data for local authorities (2018-based), available online at <https://uk-air.defra.gov.uk/data/laqm-background-maps?year=2017>

⁸ Public Health Outcomes Framework, Public Health England. data tool available online at <https://fingertips.phe.org.uk/profile/public-health-outcomes-framework/data#page/0/qid/1000043/pat/6/par/E12000004/ati/401/iid/30101/age/230/sex/4/cid/4/tbm/1>

- 4) M15- Promote green waste services and discourage use of bonfires for disposal of waste at domestic and commercial sites

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

This section sets out the monitoring undertaken within 2020 by Boston Borough 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 to allow monitoring trends to be identified and discussed.

3.1 Summary of Monitoring Undertaken

3.1.1 Automatic Monitoring Sites

No automatic (continuous) monitoring was carried out by Boston Borough Council.

3.1.2 Non-Automatic Monitoring Sites

Boston Borough Council undertook non- automatic (i.e. passive) monitoring of NO₂ at 15 sites during 2020. Table A.1 – Details of Non-Automatic Monitoring Sites 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 (NO₂)

Table A.2 in Appendix A compare the ratified and adjusted monitored NO₂ annual mean concentrations for the past five years with the air quality objective of 40µg/m³. Note that the concentration data presented represents the concentration at the location of the monitoring site, following the application of bias adjustment and annualisation, as required (i.e. the values are exclusive of any consideration to fall-off with distance adjustment).

For diffusion tubes, the 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.

During 2020 only site 1 (located within Haven Bridge AQMA) exceeded the annual mean objective for NO₂. None of the other 14 sites monitored annual mean concentrations within 10% of the annual mean objective. As there have been no exceedances of the NO₂ annual mean objective within the Bargate Bridge AQMA for 3 years, Boston Borough Council are considering revoking the AQMA. 1-hour NO₂ mean concentrations were not measured, however no exceedances were predicted as the annual mean concentrations are all below <60 µg/m³.

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)
1	Adjacent to new air quality monitoring station, North side of Haven Bridge Road	Roadside	532575	343696	NO ₂	Boston	0.0	1.5	NO	3.0
3	Adjacent to 68 Liquorpond Street	Roadside	532470	343736	NO ₂	Boston	0.1	0.5	NO	3.0
4	Adjacent to 18 Queen Street	Roadside	532331	343848	NO ₂	Boston	0.1	1.5	NO	3.0
5	John Adams Way intersection with Haven Bridge	Roadside	532859	343760	NO ₂	Boston	3.5	2.2	NO	3.0
16	Entrance to South Quay Car Park	Roadside	532855	343719	NO ₂	No	0.0	2.0	NO	3.0
17	Opposite 4-6 South End, Boston	Roadside	532877	343690	NO ₂	No	0.0	2.0	NO	3.0
8	Bargate Roundabout	Roadside	533112	344476	NO ₂	Bargate	0.0	2.3	NO	3.0
9	Roadside adjacent to 30 Spilsby Road	Roadside	533251	344642	NO ₂	Bargate	4.0	2.0	NO	3.0
18	ATS Roundabout, London Road, Boston	Roadside	532600	342737	NO ₂	No	0.0	2.0	NO	3.0
20	Kerbside, Haven Bridge	Roadside	532744	343719	NO ₂	No	16.0	2.0	NO	3.0
12	Junction of New Asda Road and Sleaford Road, Boston.	Roadside	532168	343987	NO ₂	No	8.9	1.5	NO	3.0
21	36 Sleaford Road, Boston	Roadside	532024	344060	NO ₂	No	8.0	1.5	NO	3.0
14	Roadside adjacent to 20 Spilsby Road	Roadside	533226	344624	NO ₂	Bargate	3.0	2.0	NO	3.0
19	Opposite 55 London Road, Boston	Roadside	532630	342760	NO ₂	No	0.0	2.0	NO	3.0
22	Adjacent to 94 Liquorpond Street	Roadside	532544	343702	NO ₂	Boston	0.1	8.0	NO	2.3

Notes:

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

(2) N/A if not applicable.

Table A.2 – Annual Mean NO₂ Monitoring Results: Non-Automatic Monitoring (µg/m³)

Diffusion Tube ID	X OS Grid Ref (Easting)	Y OS Grid Ref (Northing)	Site Type	Valid Data Capture for Monitoring Period (%) ⁽¹⁾	Valid Data Capture 2020 (%) ⁽²⁾	2016	2017	2018	2019	2020
1	532575	343696	Roadside	82.7	82.7	45.8	49.4	42.4	49.2	42.1
3	532470	343736	Roadside	55.8	55.8	46.2	53.2	48.3	46.5	35.2
4	532331	343848	Roadside	82.7	82.7	38.6	38.0	39.4	39.8	29.4
5	532859	343760	Roadside	67.3	67.3	34.6	36.8	34.7	34.8	27.6
16	532855	343719	Roadside	82.7	82.7	-	-	-	30.1	24.8
17	532877	343690	Roadside	82.7	82.7	-	-	-	30.5	24.2
8	533112	344476	Roadside	82.7	82.7	31.1	31.3	32.5	31.3	25.3
9	533251	344642	Roadside	82.7	82.7	41.5	43.6	39.4	37.0	29.9
18	532600	342737	Roadside	82.7	82.7	-	-	-	33.8	28.3
20	532744	343719	Roadside	75.0	75.0	-	-	46.3	41.6	34.0
12	532168	343987	Roadside	75.0	75.0	26.8	27.6	31.8	28.9	20.4
21	532024	344060	Roadside	75.0	75.0	-	-	30.0	29.0	23.7
14	533226	344624	Roadside	82.7	82.7	36.7	37.1	37.8	35.8	27.2
19	532630	342760	Roadside	82.7	82.7	-	-	-	27.5	22.9
22	532544	343702	Roadside	70.0	57.7	-	-	-	35.9	26.6

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/m³.

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

NO₂ annual means exceeding 60µg/m³, indicating a potential exceedance of the NO₂ 1-hour mean objective are shown in **bold and underlined**.

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%).

Figure A.1 – Trends in Annual Mean NO₂ Concentrations: Sites 1, 3, 4, 5 & 16

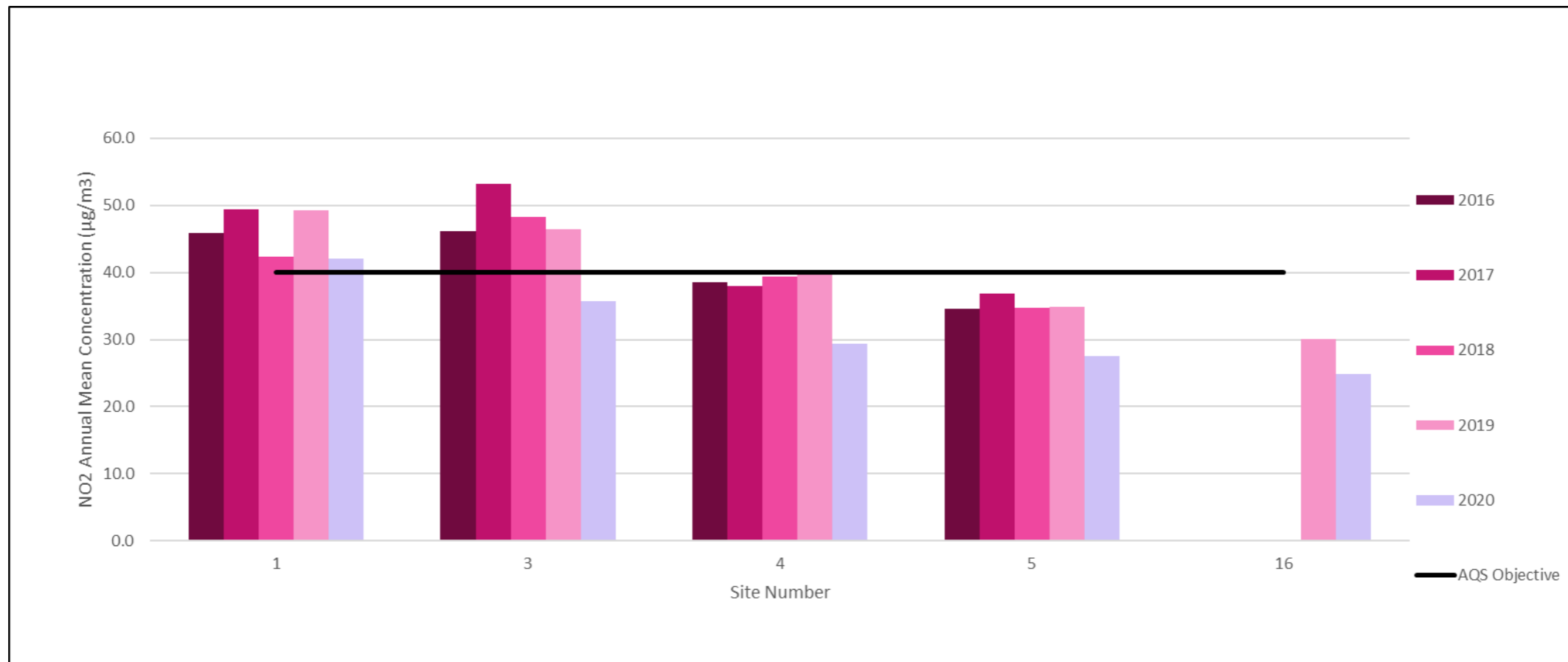


Figure A.2 – Trends in Annual Mean NO₂ Concentrations : Sites 17, 8, 9, 18 & 20

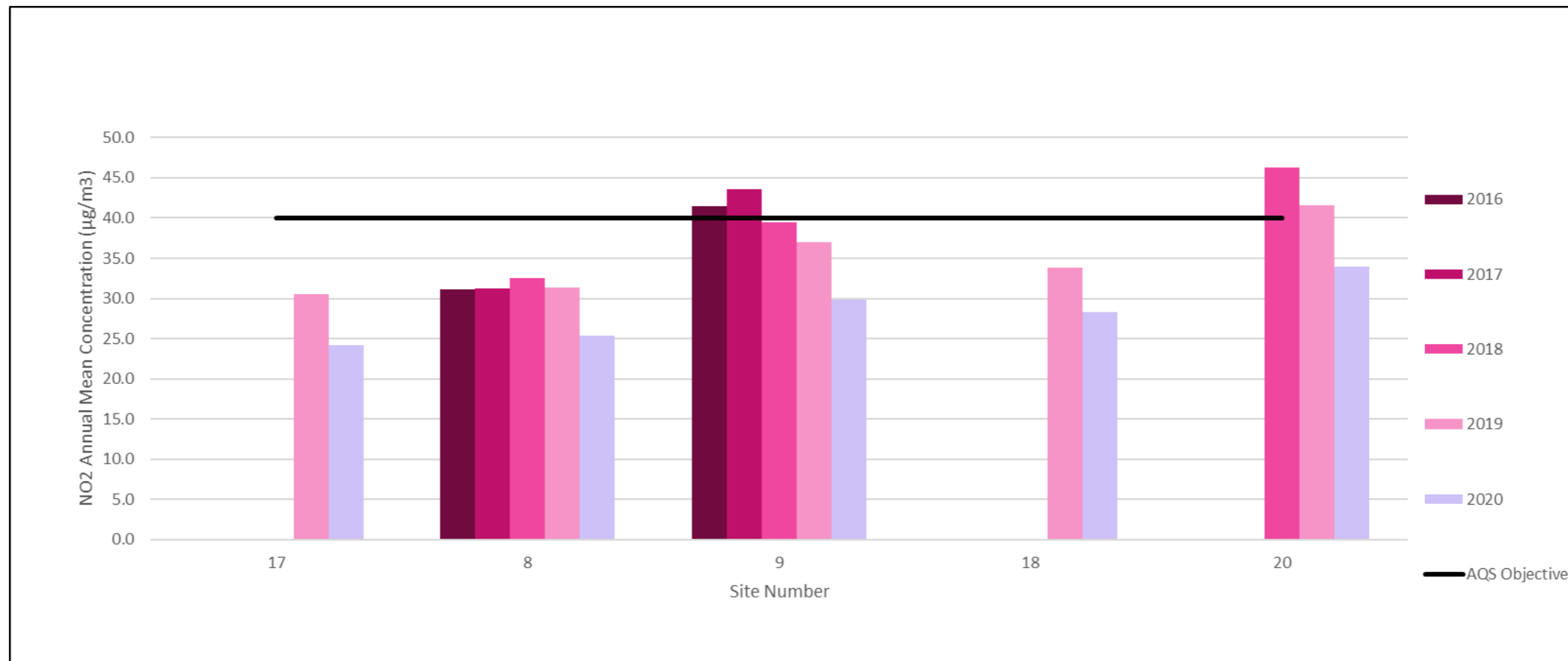
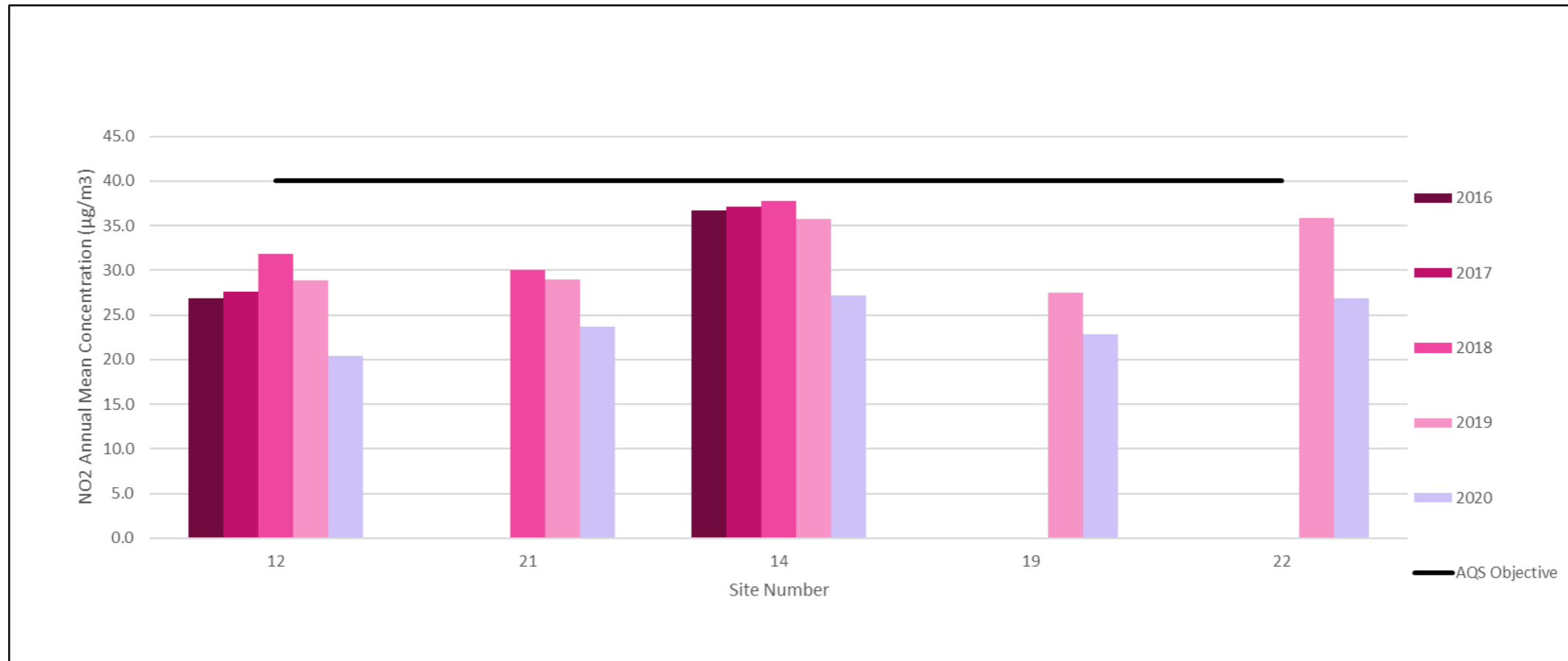


Figure A.3 – Trends in Annual Mean NO₂ Concentrations : Sites 12, 21, 14, 19 & 22



Appendix B: Full Monthly Diffusion Tube Results for 2020

Table B.1 – NO₂ 2020 Diffusion Tube Results (µg/m³)

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 (0.81)	Annual Mean: Distance Corrected to Nearest Exposure	Comment
1	532575	343696	59.9	52.3	48.6			51.0	52.1	45.2	52.3	51.9	55.9	50.9	52.0	42.1	-	
3	532470	343736	44.3	34.2	44.3			37.0	43.6	43.9	45.2				41.8	35.2	-	
4	532331	343848	36.6	27.2	37.5			40.7	25.5	39.0	35.9	37.1	40.5	43.4	36.3	29.4	-	
5	532859	343760	42.3					26.7	37.0	29.5	35.8	35.1	40.1	40.3	35.9	27.6	-	
16	532855	343719	35.1	24.9	29.5			23.8	25.3	29.8	29.7	33.2	37.0	37.9	30.6	24.8	-	
17	532877	343690	37.4	17.8	29.2			25.1	23.8	29.2	29.6	31.9	38.2	36.2	29.8	24.2	-	
8	533112	344476	33.3	29.9	29.8			28.3	26.8	29.8	32.5	31.5	35.9	34.7	31.3	25.3	-	
9	533251	344642	46.3	36.6	35.7			31.8	29.5	31.9	36.1	42.0	39.2	39.6	36.9	29.9	-	
18	532600	342737	43.2	36.2	33.4			27.1	31.9	32.4	38.7	36.7	35.6	34.5	35.0	28.3	-	
20	532744	343719	43.3	N/R	44.2			42.0	32.9	44.7	44.8	42.4	40.4	42.6	41.9	34.0	-	
12	532168	343987	23.4	19.1	N/R			26.7	19.9	27.9	25.6	22.6	30.2	31.1	25.2	20.4	-	
21	532024	344060	33.6	N/R	28.1			24.9	25.0	29.5	28.4	30.3	34.2	29.5	29.3	23.7	-	
14	533226	344624	45.6	30.5	33.8			27.8	26.6	31.6	34.8	35.4	35.0	34.7	33.6	27.2	-	
19	532630	342760	36.9	29.7	26.8			21.1	25.5	23.4	29.6	28.9	32.0	28.5	28.2	22.9	-	
22	532544	343702			34.4			26.3	28.3	26.9	32.6	34.7	36.0		31.3	26.6	-	

- All erroneous data has been removed from the NO₂ diffusion tube dataset presented in Table B.1.
- Annualisation has been conducted where data capture is <75% and >25% in line with LAQM.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.
- Boston Borough Council confirm that all 2020 diffusion tube data has been uploaded to the Diffusion Tube Data Entry System.

Notes:

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

NO₂ annual means exceeding 60µg/m³, indicating a potential exceedance of the NO₂ 1-hour mean objective are shown in **bold and underlined**.

See Appendix C for details on bias adjustment and annualisation.

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

New or Changed Sources Identified Within Boston Borough Council During 2020

Boston Borough Council had over 500 planning applications during 2020, with 17 considered major developments. The major developments mainly consist of residential developments, storage and distribution centres. All but one development of 23 dwellings in Fosdyke Parish Council were considered favourable and were granted planning permission.

Additional Air Quality Works Undertaken by Boston Borough Council During 2020

Boston Borough Council has not completed any additional works within the reporting year of 2020.

QA/QC of Diffusion Tube Monitoring

Gradko International Ltd supply and analyse Boston Borough Council's diffusion tubes. The tubes were prepared using the 20% TEA in water preparation method. During 2020, Boston Borough Council's diffusion tube monitoring was carried out for 10/12 months. No tubes were deployed during April or May owing to lab closures due to Covid-19.

Diffusion Tube Annualisation

Three non-automatic monitoring (diffusion tube) sites recorded data capture of <75% therefore requiring annualisation. Annualisation was conducted using an average annualization factor, calculated using background concentrations from the four closest AURN sites to Boston Borough Council. Raw diffusion tube data was the annualised using the average annualization factor to provide annual annualised mean concentrations. An annualization summary is provided in Table C.2.

Diffusion Tube Bias Adjustment Factors

The diffusion tube data presented within the 2020 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/NO₂ continuous analysers. Alternatively, the national database of diffusion tube co-location surveys provides bias factors for the relevant laboratory and preparation method.

Boston Borough Council have applied a national bias adjustment factor to the 2020 monitoring data of 0.81 (based on 18 studies, version 03/21) as derived from the national bias adjustment factor spreadsheet. A summary of bias adjustment factors used by Boston Borough Council over the past five years is presented in Table C.1.

Table C.1 – Bias Adjustment Factor

Year	Local or National	If National, Version of National Spreadsheet	Adjustment Factor
2020	National	03/21	0.81
2019	National	09/20	0.92
2018	National	06/19	0.93
2017	National	09/18	0.89
2016	National	06/17	0.92

NO₂ 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 NO₂ concentration at the nearest location relevant for exposure should be estimated using the Diffusion Tube Data Processing Tool/NO₂ fall-off with distance calculator available on the LAQM Support website. Where appropriate, non-automatic annual mean NO₂ concentrations corrected for distance are presented in Table B.1.

No diffusion tube NO₂ monitoring locations within Boston Borough Council required distance correction during 2020.

Table C.2 – Annualisation Summary (concentrations presented in $\mu\text{g}/\text{m}^3$)

Site ID	Annualisation Factor Nottingham Centre	Annualisation Factor Leicester University	Annualisation Factor Woodlands Avenue	Annualisation Factor	Average Annualisation Factor	Raw Data Annual Mean	Annualised Annual Mean	Comments
3	1.0114	1.0257	1.0850		1.0407	41.8	43.5	
5	0.9247	0.9598	0.9714		0.9519	35.9	34.1	
22	1.0596	1.0406	1.0478		1.0493	31.3	32.9	

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

Figure D.1 – Map of Non-Automatic Monitoring Site: Haven Bridge AQMA

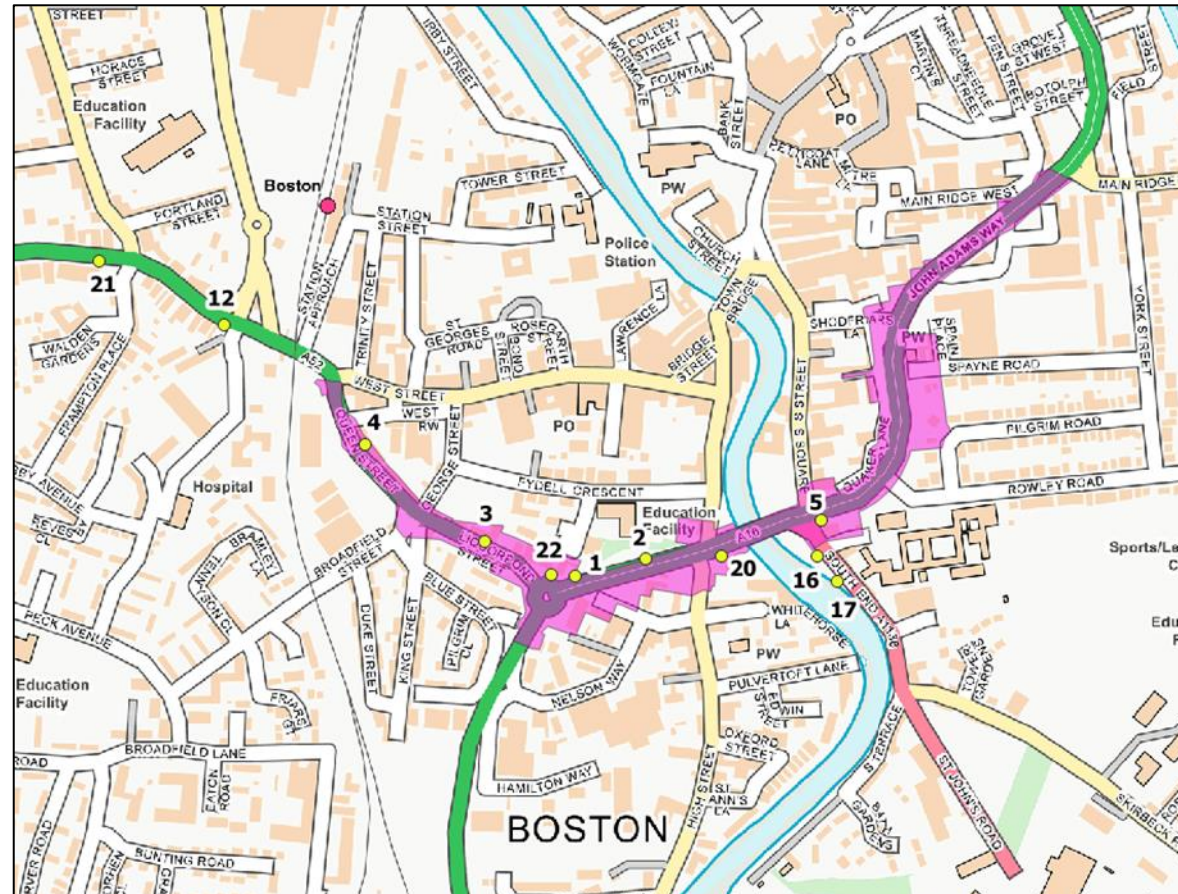


Figure D.2 – Map of Non-Automatic Monitoring Site: Bargate Bridge AQMA

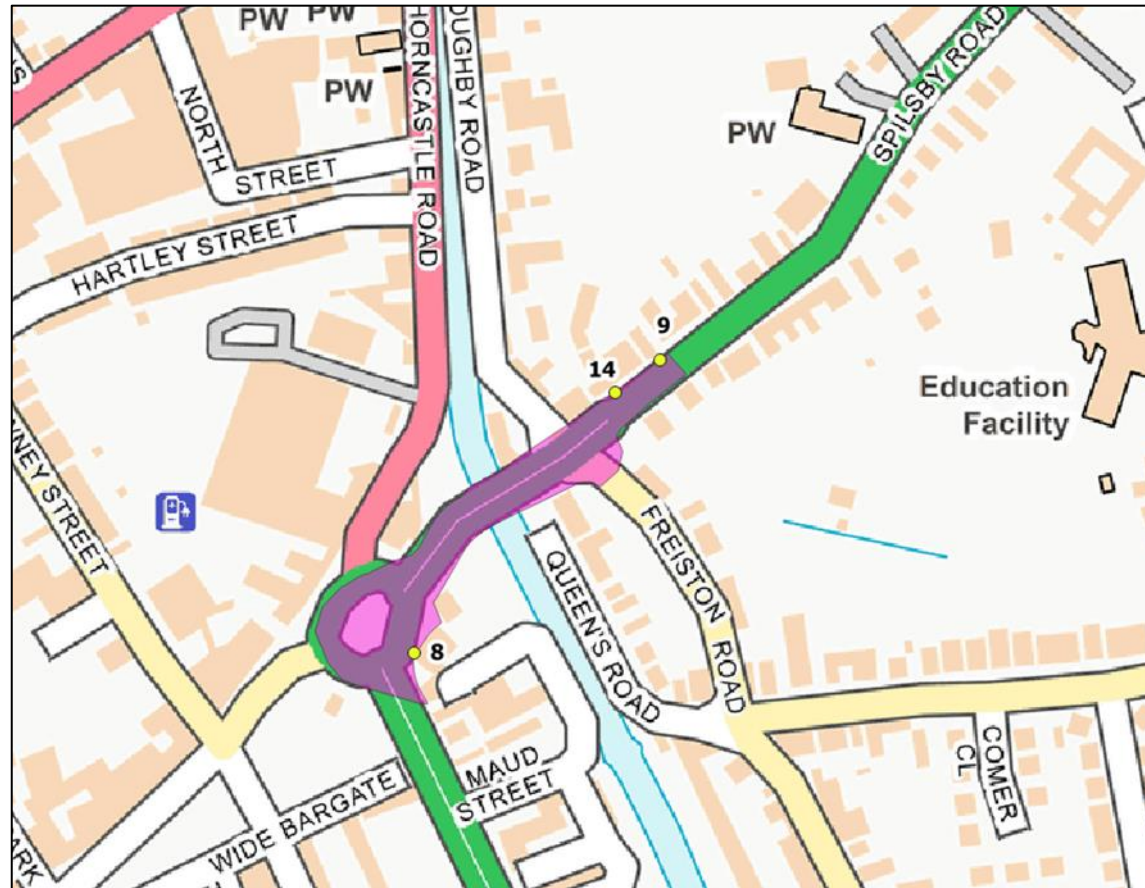
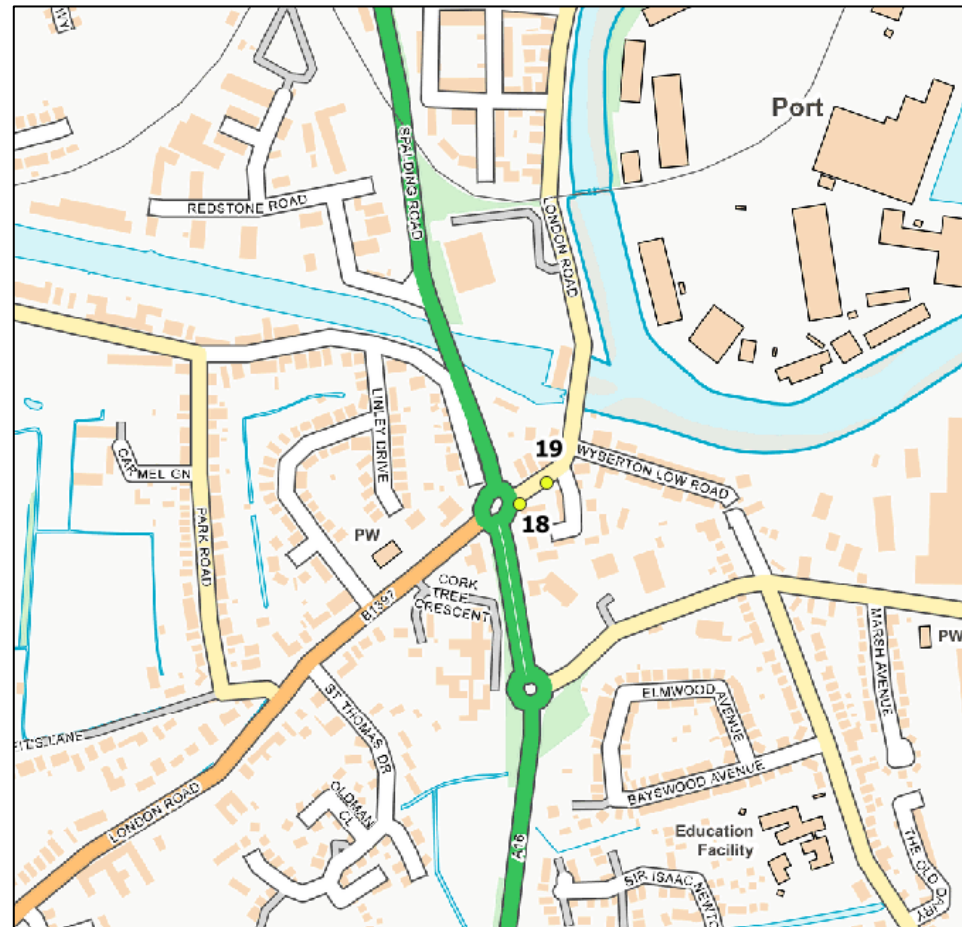


Figure D.3 – Map of Non-Automatic Monitoring Site: Boston South



Appendix E: Summary of Air Quality Objectives in England

Table E.1 – Air Quality Objectives in England⁹

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

⁹ The units are in microgrammes of pollutant per cubic metre of air (µg/m³).

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 (NO₂) 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) data¹⁰ 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)¹¹ has estimated that during the initial lockdown period in 2020, within urbanised areas of the UK reductions in NO₂ annual mean concentrations were between 20 and 30% relative to pre-pandemic levels, which

¹⁰ Prime Minister's Office, COVID-19 briefing on the 31st of May 2020

¹¹ 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 20 $\mu\text{g}/\text{m}^3$ if expressed relative to annual mean averages. During this period, changes in $\text{PM}_{2.5}$ concentrations were less marked than those of NO_2 . $\text{PM}_{2.5}$ 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 $\text{PM}_{2.5}$ concentrations during the initial lockdown period are of the order 2 to 5 $\mu\text{g}/\text{m}^3$ 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 Boston Borough Council

During 2020, many staff members within Boston Borough Council were redeployed to deal with the Covid-19 pandemic. This affected work across the air quality sector, nevertheless, the council still made progress towards their AQAP actions.

Bus operators within the local authority saw a sharp decline in revenue as a result of the Covid-19 pandemic, therefore maintaining existing routes became a priority rather than the AQAP aim of expanding network provision. There is now consideration again of expansion and/or better routing of 'INTU Town' bus routes through the Boston Transport Group. The AQAP measure around lift sharing has also not been pursued yet due to the Covid-19 pandemic.

Opportunities Presented by COVID-19 upon LAQM within Boston Borough Council

No LAQM related opportunities have arisen as a consequence of COVID-19 within Boston Borough Council.

Challenges and Constraints Imposed by COVID-19 upon LAQM within Boston Borough Council

During April and May 2020, diffusion tube monitoring was not carried out in Boston Borough due to Covid-19 restrictions.

Action plan measure 19 surrounding lift sharing has been discouraged due to Covid-19 national guidance. The implementation of action plan measures 6 and 7; the increase of bus services into town and the introduction of cleaner buses have been impacted by the Covid-19 pandemic. This is because the pandemic has severely affected passenger numbers and as a result, most routes and bus operators require the support of LCC/CG and bus operators. The expansion of network provision has also been delayed due to financial constraints imposed upon public transport during 2020.

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.
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- Boston Borough Council 2020 Annual Status Report.
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- Boston Borough Council 2018 Annual Status Report.
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