



Boston Borough Council
Air Quality Action Plan
Draft for Consultation

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

2020

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1. Executive Summary

This Air Quality Action Plan (AQAP) has been produced as part of our statutory duties required by the Local Air Quality Management framework. It outlines the action we will take to improve air quality in Boston Borough Council between 2020 and 2025.

This action plan replaces the previous action plan which was published in 2006 and subsequently updated in 2010.

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 and older people, and those with heart and lung conditions. There is also often a strong correlation with equalities issues, because areas with poor air quality are also often the less affluent areas^{1,2}.

The annual health cost to society of the impacts of particulate matter alone in the UK is estimated to be around £16 billion³. Boston Borough Council is committed to reducing the exposure of people in Boston to poor air quality in order to improve health.

We have developed actions that can be considered under 3 broad topics:

- Transport;
- Public Health;
- Planning and Infrastructure.

Based upon the conclusions of a Detailed Modelling Study completed in 2018 to inform the AQAP, together with discussions contained within the Steering Group and LAQM reporting, the following priorities were identified as key areas within the topics outlined above:

- Improve traffic flows within Boston;

¹ Environmental equity, air quality, socioeconomic status and respiratory health, 2010

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

³ Defra. Abatement cost guidance for valuing changes in air quality, May 2013

Boston Borough Council

- 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. Junction and road improvements to improve traffic flows within Boston;
- In this AQAP we outline how we plan to effectively tackle air quality issues within our control. However, we recognise that there are a large number of air quality policy areas that are outside of our influence (such as vehicle emissions standards, which are subject to Europe wide standards), but for which we may have useful evidence, and so we will continue to work with regional and central government on policies and issues beyond Boston's direct influence.

Responsibilities and Commitment

This AQAP has been prepared by the Environmental Health Department of Boston Borough Council with the support and agreement of officers and departments as listed in Table 5.2.

This AQAP will be subject to an annual review, appraisal of progress and reporting to the relevant Council Committee. Progress each year will be reported in the Annual Status Reports (ASRs) produced by Boston Borough Council as part of our statutory Local Air Quality Management duties.

If you have any comments on this AQAP please send them to the Environmental Health at:

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Table of Contents

1. Executive Summary	i
Responsibilities and Commitment.....	iii
2. Introduction	1
3. Summary of Current Air Quality in Boston Borough Council	2
3.1. Source Apportionment.....	9
4. Boston Borough Council’s Air Quality Priorities	10
4.1. Public Health Context.....	10
4.2. Planning and Policy Context.....	10
4.3. Source Apportionment Results	11
4.4. Required Reduction in Emissions.....	20
4.5. Key Priorities	21
4.6. AQAP Measures	22
5. Development and Implementation of Boston Borough Council AQAP	33
5.1. Consultation and Stakeholder Engagement.....	33
5.2. Steering Group.....	35
6. Appendix A: Response to Consultation	36
7. Appendix B: Reasons for Not Pursuing Action Plan Measures	40
8. Appendix C: Consideration of Measures	41
9. Glossary of Terms	45
10. References	46

List of Tables

Table 3.1 – Monitoring Results 2017 & 2018.....	3
Table 3.2 – 2017 base year modelled exceedances	4
Table 4.1 – Detailed Source Apportionment of NO _x Concentrations Covering the Entirety of the Modelled Domain.....	17
Table 4.2 – Detailed Source Apportionment of NO _x Concentrations Covering Area B, C and D	18
Table 4.3 – Emission reduction requirement (worst case).....	20
Table 4.4 - Air Quality Action Plan Measures	23
Table 5.1 – Consultation Undertaken	33
Table 5.2 - Steering Group Members	35
Table A1 - Summary of Responses to Consultation and Stakeholder Engagement on the AQAP.....	36
Table B1 - Action Plan Measures Not Pursued and the Reasons for that Decision...	40
Table C1 – Ranked Long List of Measures	41

List of Figures

Figure 3.1 – Area B: Current AQMA 1 boundary alongside annual mean NO ₂ concentration isopleths and model predictions at discrete receptor locations	6
Figure 3.2 – Area C: Current AQMA 2 boundary alongside annual mean NO ₂ concentration isopleths and model predictions at discrete receptor locations	7
Figure 3.3 – Area D: Annual mean NO ₂ concentration isopleths and model predictions at discrete receptor locations.....	8
Figure 4.1 – Detailed Source Apportionment of NO _x Concentrations Covering the Entirety of the Modelled Domain.....	17
Figure 4.2 – Detailed Source Apportionment of NO _x Concentrations Focussing on Areas B, C and D Respectively.....	19

2. Introduction

This report outlines the actions that Boston Borough Council will deliver between 2020 and 2025 in order to reduce concentrations of air pollutants and exposure to air pollution; thereby positively impacting on the health and quality of life of residents and visitors to the Borough of Boston.

It has been developed in recognition of the legal requirement on the local authority to work towards Air Quality Strategy (AQS) objectives under Part IV of the Environment Act 1995 and relevant regulations made under that part and to meet the requirements of the Local Air Quality Management (LAQM) statutory process.

This Plan will be reviewed every five years at the latest and progress on measures set out within this Plan will be reported on annually within Boston Borough Council's air quality ASR.

3. Summary of Current Air Quality in Boston Borough Council

In 2018 the Council commissioned a Detailed Modelling Study⁴. This study concluded that Boston's air quality issues derived primarily from high usage of private vehicles for making short frequent journeys within the Boston council area. As detailed in the Boston Transport Strategy (2016-2036), nearly half of travel to work journeys start and end within Boston, and half of these journeys are made by private motor vehicles predominantly along major arterial roads (Sleaford Road, John Adams Way, Spalding Road and Spilsby Road), causing peak period congestion.

Boston Borough Council (BBC) has two designated Air Quality Management Areas (AQMA's);

- AQMA 1 – Haven Bridge; and
- AQMA 2 – Bargate Bridge.

Both AQMA's have been declared in relation to exceedances of the AQS annual mean objective of 40µg/m³ for NO₂, due to emission from road traffic. This traffic emissions of greatest concern occur along Sleaford Road, John Adams Way, Spalding Road and Spilsby Road, which all connect to form the main transportation network within the region. These high-capacity roads run past residential areas where relevant exposure is apparent, thus raising public health concerns.

During 2018, NO₂ was monitored at 19 locations using passive diffusion tubes, comprising 17 roadside and two urban background sites. At the end of 2018, four diffusion tubes were decommissioned Sites 6, 7, 10 and 15, and relocated to locations of more relevant exposure along the A16 (Sites 18 and 19), and along the A1138 (Sites 16 and 17). This was in response to the findings of the 2018 Detailed Modelling Assessment, which identified areas outside of the existing AQMA's to be in exceedance of the AQS annual mean NO₂ objective.

⁴ Boston Borough Council, Detailed Modelling study ref: 6475940/AQ/V1.3, February 2019

In January 2018, a further two diffusion tubes (Sites 11 and 13) were also decommissioned in order to ensure that new locations (20 and 21) were established in order to provide additional monitoring within the Haven Bridge AQMA.

Table 3.1 provides annual mean NO₂ concentrations for the nine monitoring sites located within the declared AQMAs. The 2018 AQMA based monitored concentrations have improved from 2017 levels on the whole, therefore in order to ensure that a more representative scenario is assumed, the modelled results from the 2018 assessment were considered within this report to quantify improvement against the updated 2019 AQAP measures.

Table 3.1 – Monitoring Results 2017 & 2018

Site ID	Site Location	AQMA	OS Grid Ref (X Y)	Annual Mean NO ₂ Concentration (µg/m ³) 2017	Annual Mean NO ₂ Concentration (µg/m ³) 2018
1	North side of Haven Bridge Road	1	532575, 343696	49.4	42.4
2	North side of Haven Bridge Road	1	532656, 343716	44.5	44.5
3	Adjacent to 68 Liquorpond Street	1	532470, 343736	53.2	48.3
4	Adjacent to 18 Queen Street	1	532331, 343848	38.0	39.4
5	John Adams Way intersection with Haven Bridge	1	532859, 343760	36.8 (34.3)	34.7*
8	Bargate Roundabout	2	533112, 344476	31.3	32.5
9	Roadside adjacent to 30 Spilsby Road	2	533251, 344642	43.6 (38.7)	39.4 (32.8)
14	Roadside adjacent to 20 Spilsby Road	2	533226, 344624	37.1 (36.4)	37.8 (32.6)
15	Façade of 32 Spilsby Road	2	533253, 344653	22.5	21.8

*Concluded to be at a location of relevant exposure in 2018
(Bracketed figures – distance corrected to receptor location)

The 2018 Detailed Modelling Assessment considered pollutant emissions from the road network across the BBC area to ascertain spatial NO₂ concentrations in order to identify areas that are above, or within 10%, of the AQS annual mean objective. The annual mean NO₂ concentration was predicted at 264 discrete receptor locations, and across a number of cartesian grids, to enable the production of pollutant contours.

The 2018 modelling assessment used the most up to date modelling tools at the time of assessment; the advanced atmospheric dispersion model, ADMS-Roads (Version 4.1.1) and the Emissions Factor Toolkit (EFT) (Version 8.0).

The NO₂ annual mean AQS objective of 40µg/m³ was observed to be exceeded at a total of 15 (5.7%) discrete receptor locations, with 14 (5.3%) further locations within 10% of the objective. 11 out of 29 discrete receptors with predicted annual mean concentrations of NO₂ to be above or within 10% of the AQS objective are located within the two existing AQMAs, with the remaining 18 receptors not being located in an area designated an AQMA. This has highlighted the need to review the existing AQMA boundaries.

Three areas (B, C, D), illustrated within Figure 3.1 Figure 3.2 and Figure 3.3, within Boston town centre were identified as potential areas of exceedance:

- **B** – Continuous stretch spanning Sleaford Road, Liquorpond Street, John Adams Way and South End covering parts of AQMA 1;
- **C** – Spilsby Road approach to Wide Bargate covering AQMA 2; and
- **D** – A continuous stretch of the A16 – Spalding Road spanning north and south of the South Forty Foot Drain.

Table 3.2 below details the receptors where NO₂ exceedances were predicted within each area.

Table 3.2 – 2017 base year modelled exceedances

Site ID	Area	AQMA	OS Grid Ref x	OS Grid Ref y	Modelled NO ₂ Concentration (µg/m ³) 2017
250	B	1	532333	343844	41.9
251			532371	343804	41.8
237			532433	343758	43.1
155			532472	343740	43.2
235			532547	343721	40.9
108			532545	343702	59.3
118			532861	343751	44.3
119			532889	343712	43.3
220			532919	343673	41.8
109			532559	343696	44.8
106			532529	343710	50.9

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Site ID	Area	AQMA	OS Grid Ref x	OS Grid Ref y	Modelled NO ₂ Concentration (µg/m ³) 2017
107			532514	343719	48.0
35	C	2	533239	344640	40.1
39			533249	344646	40.2
137	D	N/A	532602	342733	47.4

Areas B, C and D all cover sections of the main connected arterial road network within Boston. It was therefore recommended consideration be given to declare one AQMA within Boston, amalgamating all three areas of identified exceedance (inclusive of the two current AQMAs), covering the main arterial highway network within Boston.

In response to the 2018 modelled findings, BBC are undertaking additional monitoring at the locations identified to be in exceedance, or near exceedance of the AQS annual mean NO₂ objective, in order to validate any proposed changes to the AQMA boundaries.

The two AQMAs can also be accessed at https://uk-air.defra.gov.uk/aqma/local-authorities?la_id=27.

Figure 3.1 – Area B: Current AQMA 1 boundary alongside annual mean NO₂ concentration isopleths and model predictions at discrete receptor locations

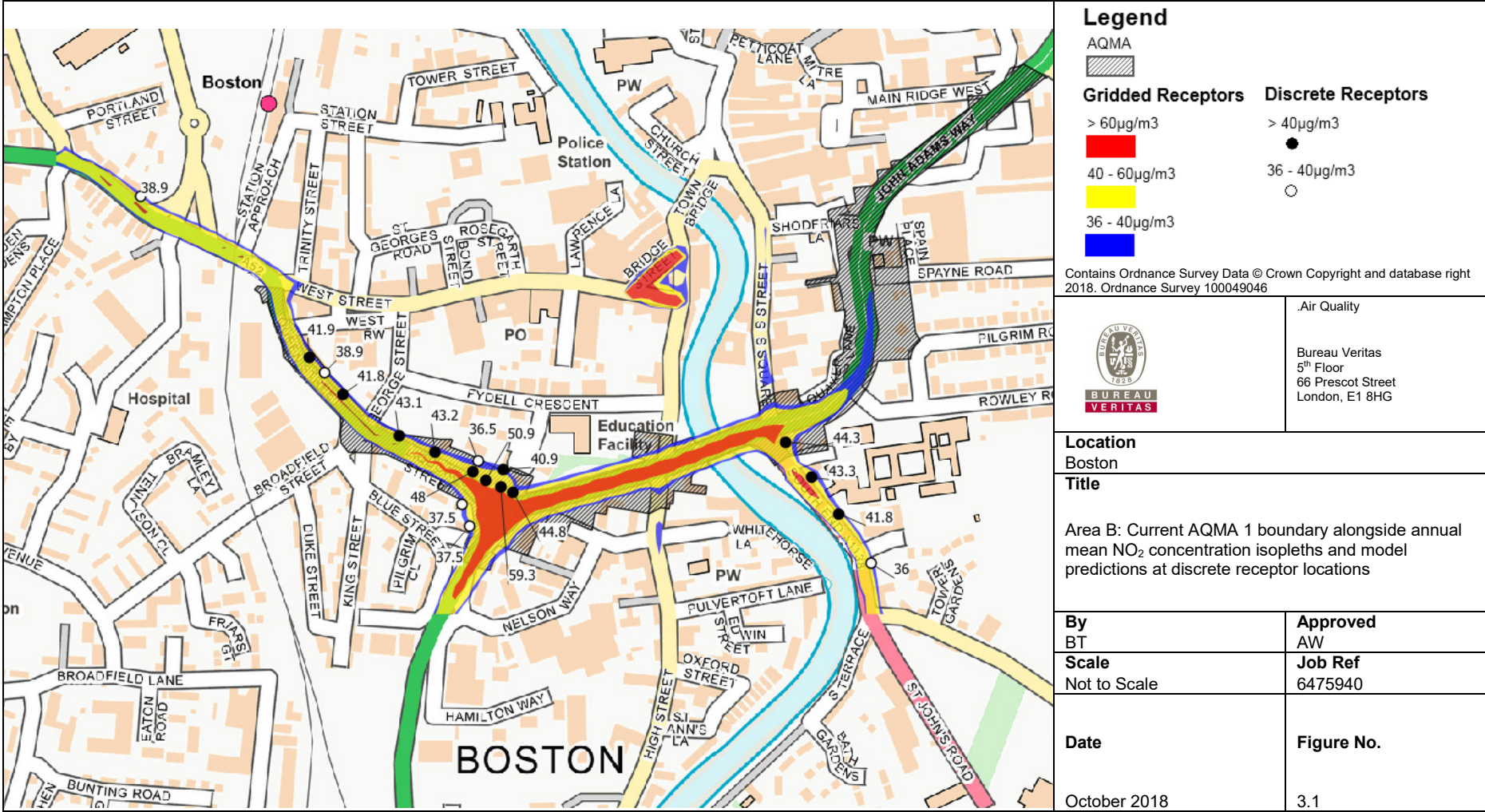


Figure 3.2 – Area C: Current AQMA 2 boundary alongside annual mean NO₂ concentration isopleths and model predictions at discrete receptor locations

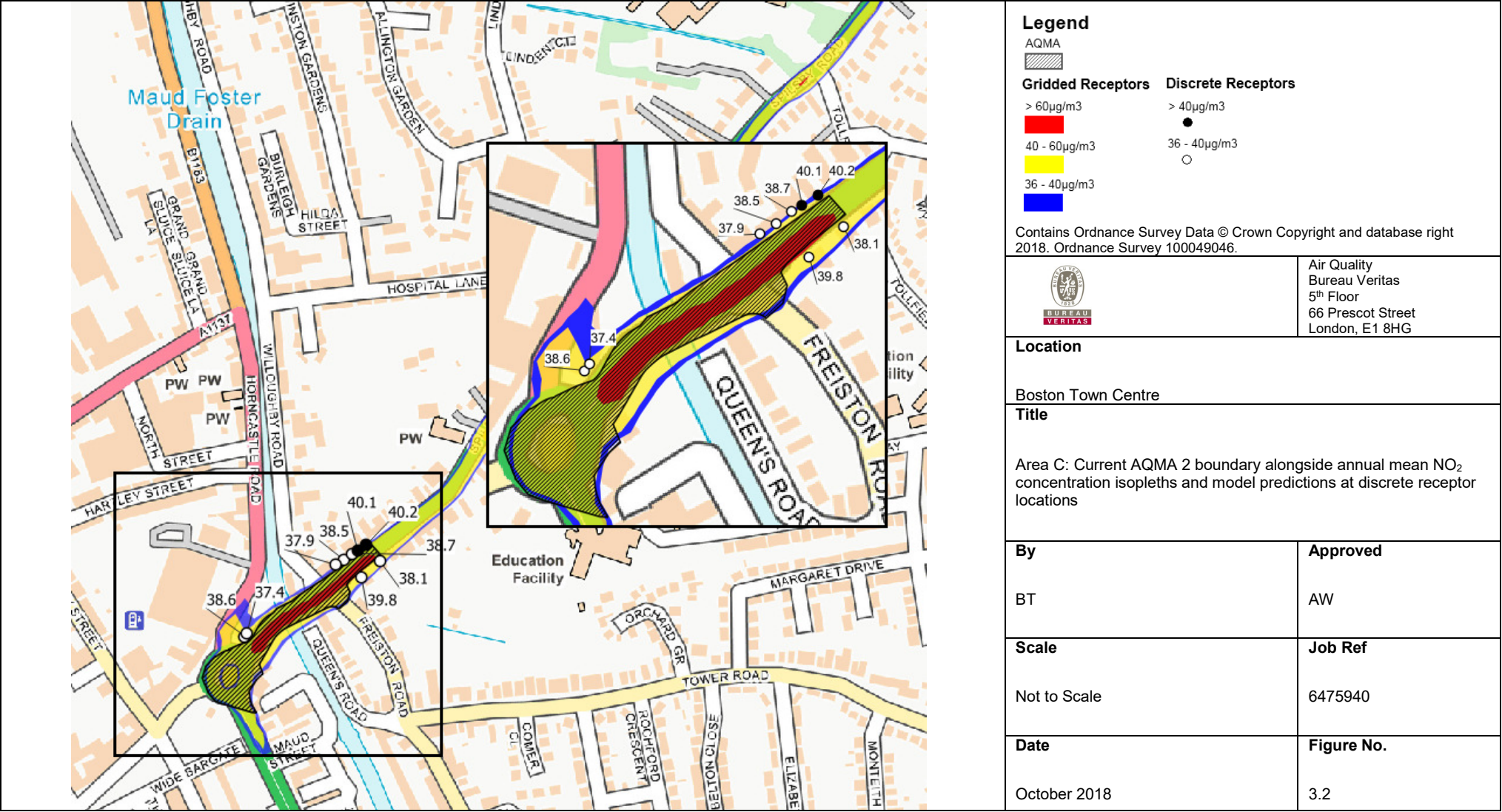
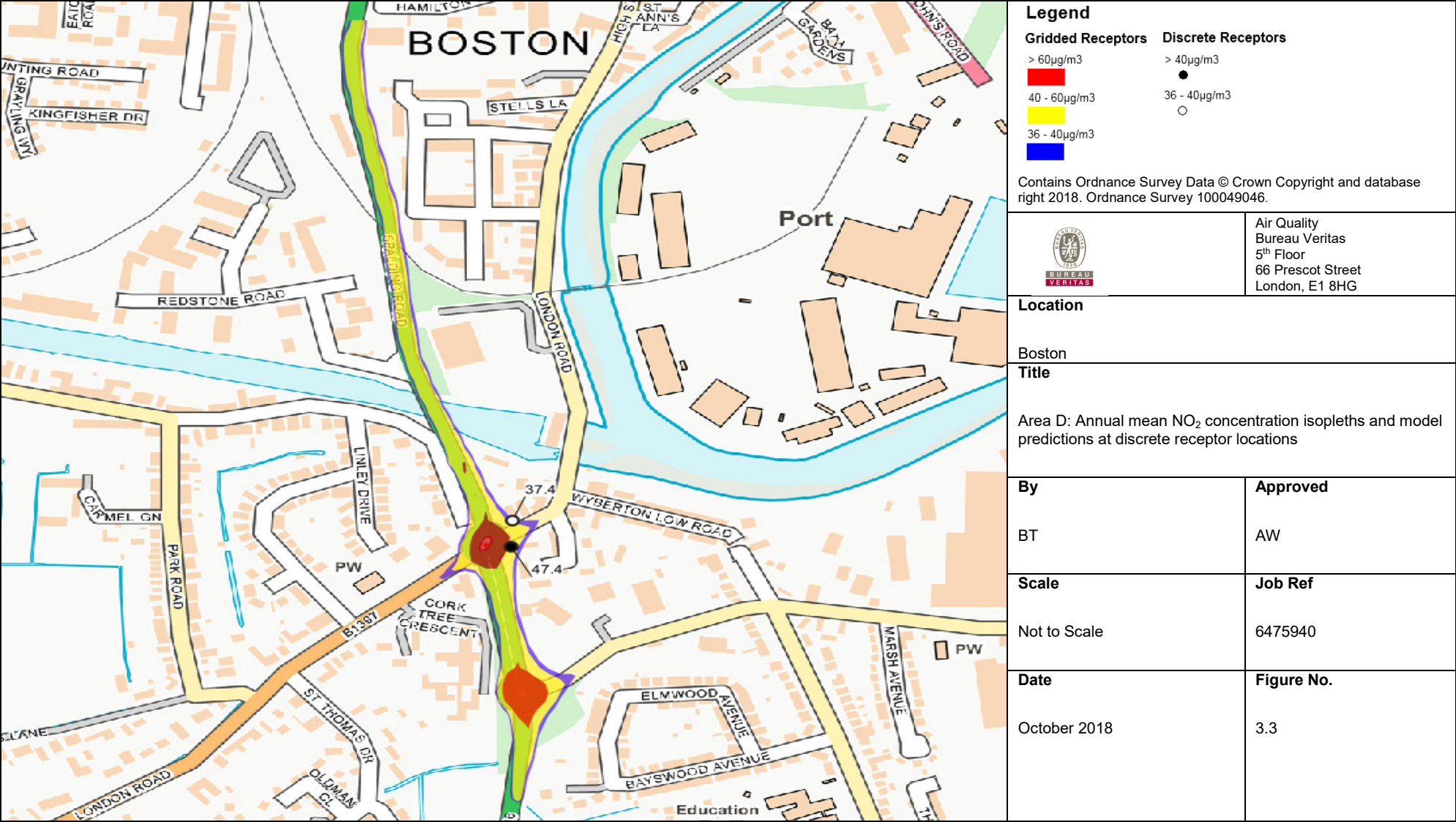


Figure 3.3 – Area D: Annual mean NO₂ concentration isopleths and model predictions at discrete receptor locations



3.1. Source Apportionment

The AQAP measures presented in this report are intended to be targeted towards the predominant sources of emissions within Boston Borough Council's area.

A source apportionment exercise was carried out within the recent Detailed Assessment completed in 2018⁴ in order to help inform the development of the AQAP measures. All receptors included within the pollutant modelling were included within the source apportionment exercise to gain an understanding of the proportion of emissions from different vehicle types within Boston.

A NO_x source apportionment exercise was undertaken for the following vehicle types, with results illustrated in section 3.1:

- Cars;
- Light-Goods Vehicles (LGVs);
- Heavy-Goods Vehicles (HGVs);
- Bus and Coaches; and
- Motorcycles.

A source apportionment exercise provides different vehicle NO_x contributions as a proportion of the total NO_x concentration, which provides an opportunity to develop specific AQAP measures targeting a reduction in emissions from specific vehicle types.

It should be noted that emission sources of NO₂ are dominated by a combination of direct NO₂ (f-NO₂) and oxides of nitrogen (NO_x), the latter of which is chemically unstable and rapidly oxidised upon release to form NO₂. Reducing levels of NO_x emissions therefore reduces concentrations of NO₂. As a consequence, the source apportionment study has considered the emissions of NO_x, which are assumed to be representative of the main sources of NO₂.

4. Boston Borough Council's Air Quality Priorities

4.1. Public Health Context

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 and older people, and those with heart and lung conditions⁵.

Studies have shown that long-term exposure to air pollution reduces life expectancy, with short-term exposure impacting on pre-existing conditions such as asthma⁶.

The Public Health Outcomes Framework data tool⁷ compiled by Public Health England, for example, quantifies the mortality burden of PM_{2.5} within England on a county and local authority scale. The 2017 fraction of mortality attributable to PM_{2.5} pollution in Boston is 4.9%, below both the East of England and national average of 5.1%.

4.2. Planning and Policy Context

In March 2019, the new Local Plan⁸, developed in collaboration with South Holland District Council and Lincolnshire County Council (LCC), was adopted. Section 3.3.8 in the local plan states that planning authorities are required to make sure that potential pollution generated from a new development is considered together with air quality standards to be incorporated into the design process. Policy 30 within the local plan also states that development proposals will not be permitted where unacceptable adverse impacts on Air Quality is present following any proposed mitigation.

⁵ 1 Environmental equity, air quality, socioeconomic status and respiratory health, 2010; Air quality and social deprivation in the UK: an environmental inequalities analysis, 2006

⁶ <https://www.gov.uk/government/publications/health-matters-air-pollution/health-matters-air-pollution>

⁷ Public Health Outcomes Framework, Public Health England. data tool available online at <http://www.phoutcomes.info/public-health-outcomes-framework>

⁸ <http://www.southeastlincslocalplan.org/adopted-plan/>

Key measures which have already been undertaken following the adoption of the plan include the development of a transport strategy for Boston (Boston Transport Strategy 2016-2036)⁹ and the formation of Boston Transport Strategy Board consisting key councillors and officers from both Lincolnshire County Council and Boston Borough Council.

4.3. Source Apportionment Results

Source apportionment results have been calculated for all modelled receptor locations (Table 4.1 and Figure 4.1), and also for the modelled receptors within areas B, C and D (Table 4.2 and Figure 4.2).

The traffic flows derive from the LCC roads traffic database, which is managed by an external consultant (WSP), upon which LCC applied a 2017 adjustment factor to the data. The baseline scenarios were based on Department for Transport (DfT) traffic count data, therefore the detailed assessment is partly based on national statistics.

When considering the average NO_x concentration across all modelled discrete receptor locations, road traffic accounts for 25.5µg/m³ (60%) of the total NO_x concentration (42.3µg/m³), with background accounting for 16.8µg/m³ (40%). Of the total road NO_x, Cars are the highest contributing vehicle class accounting for 46% (11.8 µg/m³). HGVs and LGVs account for a similar total road NO_x, with HGVs at 25% (6.4µg/m³) and LGVs at 24% (6.2µg/m³). Buses account for 4% of the total road NO_x (1.1µg/m³), the fourth highest contributing vehicle class, whilst Motorcycles are found to contribute less than 1%.

When considering the average NO_x concentration at discrete receptor locations with an NO₂ concentration greater than 40µg/m³, the road NO_x contribution is much higher, accounting for 69.9µg/m³ (80%) of the total NO_x concentration (87.1µg/m³), with the background contribution reduced to 20% (17.2µg/m³). Of the total road NO_x, Cars are still found to be the highest contributing vehicle class accounting for 41% (28.6µg/m³). HGVs are found to be the second highest contributing vehicle class, with an increased weighting contribution to 34%

⁹ https://www.lincolnshire.gov.uk/transport-and-roads/strategy-and-policy/boston-transport-strategy/52681_article

(24.0 $\mu\text{g}/\text{m}^3$) in comparison to HGV contributions modelled at all receptor locations, suggesting an increased influence of HGVs on exceedance. LGVs account for a reduced contribution (21%, 14.9 $\mu\text{g}/\text{m}^3$) in comparison to LGV contributions modelled at all receptor locations, the third highest contributing vehicle class. Buses account for a lower percentage contribution (3%) of the total road NO_x , albeit an increased concentration contribution (2.3 $\mu\text{g}/\text{m}^3$) in comparison to contributions modelled at all receptor locations, the fourth highest contributing vehicle class, whereas Motorcycles are found to contribute less than 1%.

At the discrete receptor with the maximum predicted road NO_x concentration (Receptor 108, 108.8 $\mu\text{g}/\text{m}^3$), road NO_x accounts for 86% of the total NO_x (126.2 $\mu\text{g}/\text{m}^3$). Of this 108.8 $\mu\text{g}/\text{m}^3$, Cars are similarly found to be the highest contributing vehicle class accounting for 44% (48.1 $\mu\text{g}/\text{m}^3$). As found at the locations of receptors reporting NO_2 annual mean concentrations to be above 40 $\mu\text{g}/\text{m}^3$, HGVs are the second highest contributing vehicle class (29%, 31.7 $\mu\text{g}/\text{m}^3$) with a pronounced margin to third, in comparison to contributions modelled at all receptors. LGVs account for a reduced contribution (23%, 24.6 $\mu\text{g}/\text{m}^3$) in comparison to LGV contributions modelled at all receptor locations, the third highest contributing vehicle class. Buses account for a lower percentage contribution (4%) of the total road NO_x , but an increased concentration contribution (4.2 $\mu\text{g}/\text{m}^3$) in comparison to contributions modelled at all receptor locations, the fourth highest contributing vehicle class, whereas Motorcycles are found to contribute less than 1%.

When considering the average NO_x concentration within Areas B, C and D respectively at discrete receptors where NO_2 concentrations were predicted to be greater than 40 $\mu\text{g}/\text{m}^3$, the following observations were found:

- Road NO_x contributions account for a similar proportion of the total predicted NO_x concentrations (78-83%) across all three Areas;

- Areas B and D seem to have similar predicted road NO_x concentrations, 71.0µg/m³ and 77.9µg/m³ respectively, whereas Area C was predicted to have a lower road NO_x concentration (59.1µg/m³);
- Cars are consistently found to be the highest contributing vehicle class, with similar road NO_x percentage contributions (40-44%) found across all areas. The largest Car road NO_x contribution (44%, 34.1µg/m³) was found at Area D, which was also found to report the highest average road NO_x concentration.
- HGVs are consistently found to be the second highest contributing vehicle class across all Areas respectively. HGV road NO_x percentage contributions show slight variance across all three Areas (27-36%), with Area B reporting a pronounced HGV contribution of 36% (25.5µg/m³) in comparison to Area C (27%, 16.2µg/m³) and D (28%, 22.2µg/m³). The largest predicted HGV road NO_x contribution (Area B, 36%, 25.5µg/m³) wasn't found at the area with the highest average road NO_x concentration (Area D). However, this is based on a single receptor location within Area D that was identified to be exceeding the annual mean 40µg/m³ AQS objective for NO₂, in comparison to 12 receptor locations within Area B. Nonetheless, both Areas B and D, which were observed to have the two highest averaged total road NO_x concentrations, both had the largest two predicted HGV contributions, highlighting the influence that HGVs have within the areas of exceedance. Conversely at Area C, which was observed to have the lowest averaged road NO_x concentrations, also had the lowest HGV contribution.
- LGVs are consistently found to be the third highest contributing vehicle class, with similar road NO_x percentage contributions (21-25%) found across all Areas;
- Buses and Coaches are consistently found to be the fourth highest contributing vehicle class, with similar road NO_x percentage contributions (3-6%) found across all Areas respectively. Bus and Coach road NO_x

percentage contributions report to be the highest at Area C accounting for 6% ($3.6\mu\text{g}/\text{m}^3$), which is believed to be a result of the bus routes operating along Spilsby Road connecting to the Wide Bargate Bus Interchange; and

- Motorcycles are consistently found to be the lowest contributing vehicle class, contributing less than 1% of the total road NO_x in all Areas.

When considering Areas B, C and D where the maximum road NO_x concentration was predicted respectively, the following observations were found:

- Road traffic accounts for a similar proportion of the predicted total NO_x concentrations (78-86%) across all Areas;
- Predicted road NO_x concentrations vary across all Areas respectively, with $108.8\mu\text{g}/\text{m}^3$ as the maximum road NO_x contribution within Area B, $77.9\mu\text{g}/\text{m}^3$ as the maximum road NO_x contribution within Area D and $59.2\mu\text{g}/\text{m}^3$ as the maximum road NO_x contribution within Area C;
- Cars are consistently found to be the highest contributing vehicle class, with equal road NO_x percentage contributions (44%) found across all areas, but with varying absolute NO_x contributions ($26.3\mu\text{g}/\text{m}^3$ to $48.1\mu\text{g}/\text{m}^3$) reflecting the respective levels of total NO_x predicted at each area;
- HGVs are consistently found to be the second highest contributing vehicle class across all areas respectively, with similar road NO_x percentage contributions (27-29%) found across all areas. The area with the largest HGV road NO_x contribution (Area B, 29%), was observed to also have the highest total road NO_x concentration ($108.8\mu\text{g}/\text{m}^3$), and vice versa for Area C which had the smallest HGV contribution, highlighting the influence HGVs have within areas of exceedance;
- LGVs are consistently found to be the third highest contributing vehicle class, with similar road NO_x percentages (23-25%) found across all areas;

- Buses and Coaches are consistently found to be the fourth highest contributing vehicle class, with similar road NO_x percentages (3-6%) found across all areas respectively. Bus and Coach road NO_x contributions report to be the highest at Area B accounting 4.2µg/m³. Receptor 108 is located adjacent to an inner city roundabout where three key arterial roads meet (John Adams Way, Spalding Road and Liquorpond Street). The agglomeration of the bus services operating on these key arterial routes is believed to be the cause of elevated bus and coach total road NO_x concentrations within Area B; and
- Motorcycles are consistently found to be the lowest contributing vehicle class, contributing less than 1% of the total road NO_x in all areas.

The NO_x source apportionment exercise, which was partly based on national euro class statistics, demonstrates a consistent ranking of contributing vehicle class exhibiting at all areas, i.e. Cars have a greater contribution relative to HGVs, to LGVs, to Buses and Coaches and to Motorcycles, with Cars and HGVs identified to be the two pivotal contributors to the total road NO_x concentrations. Total road NO_x contributions from Cars and HGVs were both found to vary between areas in accordance with the respective total road NO_x concentration, where commonly the largest Car and HGV road NO_x contributions were found at the area of the highest road NO_x concentrations.

The consistent ranking of contributing vehicle classes and the slight variance in vehicle class contributions suggest Areas B, C and D exhibit similar traffic characteristics and associated weighting relative to the total road NO_x concentrations, implying targeted measures implemented under the jurisdiction of a single overarching AQMA would likely have comparable benefits across all areas. Areas B, C and D all cover sections of the main connected arterial road network within Boston, which are found to comprise different sections of the same road (Spalding Road and John Adams Way), evident to the similarities in traffic characteristics observed within these three areas.

Due to the above it has therefore been recommended to declare one single AQMA to manage air quality within Boston, amalgamating all three areas of identified exceedance (which includes the two current AQMAs), to cover the main arterial highway network within Boston. The main benefit of this approach would reduce the burden of having to manage separate AQMAs, whilst simultaneously delivering benefits across all three areas. The AQMA amendments will be considered following results published from the 2019 NO₂ annual mean data.

Table 4.1 – Detailed Source Apportionment of NO_x Concentrations Covering the Entirety of the Modelled Domain

Results	All Vehicles	Cars	LGV	HGV	Bus & Coach	Motorcycle	Background
Average across all modelled areas							
NO _x Concentration (µg/m ³)	25.5	11.8	6.2	6.4	1.1	0.0	16.8
Percentage of total NO _x	60.3%	27.8%	14.7%	15.2%	2.5%	0.1%	39.7%
Percentage Road Contribution to total NO _x	100.0%	46.1%	24.4%	25.1%	4.2%	0.2%	-
Average across all locations with NO₂ Concentration greater than 40µg/m³							
NO _x Concentration (µg/m ³)	69.9	28.6	14.9	24.0	2.3	0.1	17.2
Percentage of total NO _x	80.2%	32.8%	17.1%	27.6%	2.6%	0.1%	19.8%
Percentage Road Contribution to total NO _x	100.0%	40.9%	21.3%	34.4%	3.3%	0.2%	-
At Location Where the Maximum Road NO_x Concentration has Been Predicted (Receptor 108)							
NO _x Concentration (µg/m ³)	108.8	48.1	24.6	31.7	4.2	0.2	17.4
Percentage of total NO _x	86.2%	38.1%	19.5%	25.1%	3.3%	0.1%	13.8%
Percentage Road Contribution to total NO _x	100.0%	44.2%	22.7%	29.1%	3.9%	0.1%	-

Figure 4.1 – Detailed Source Apportionment of NO_x Concentrations Covering the Entirety of the Modelled Domain

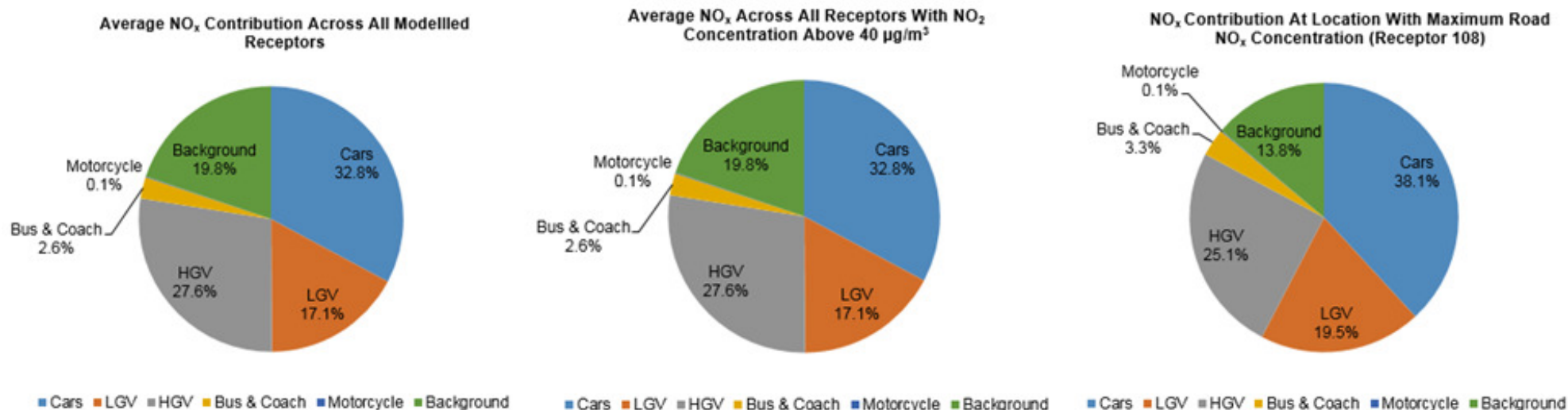
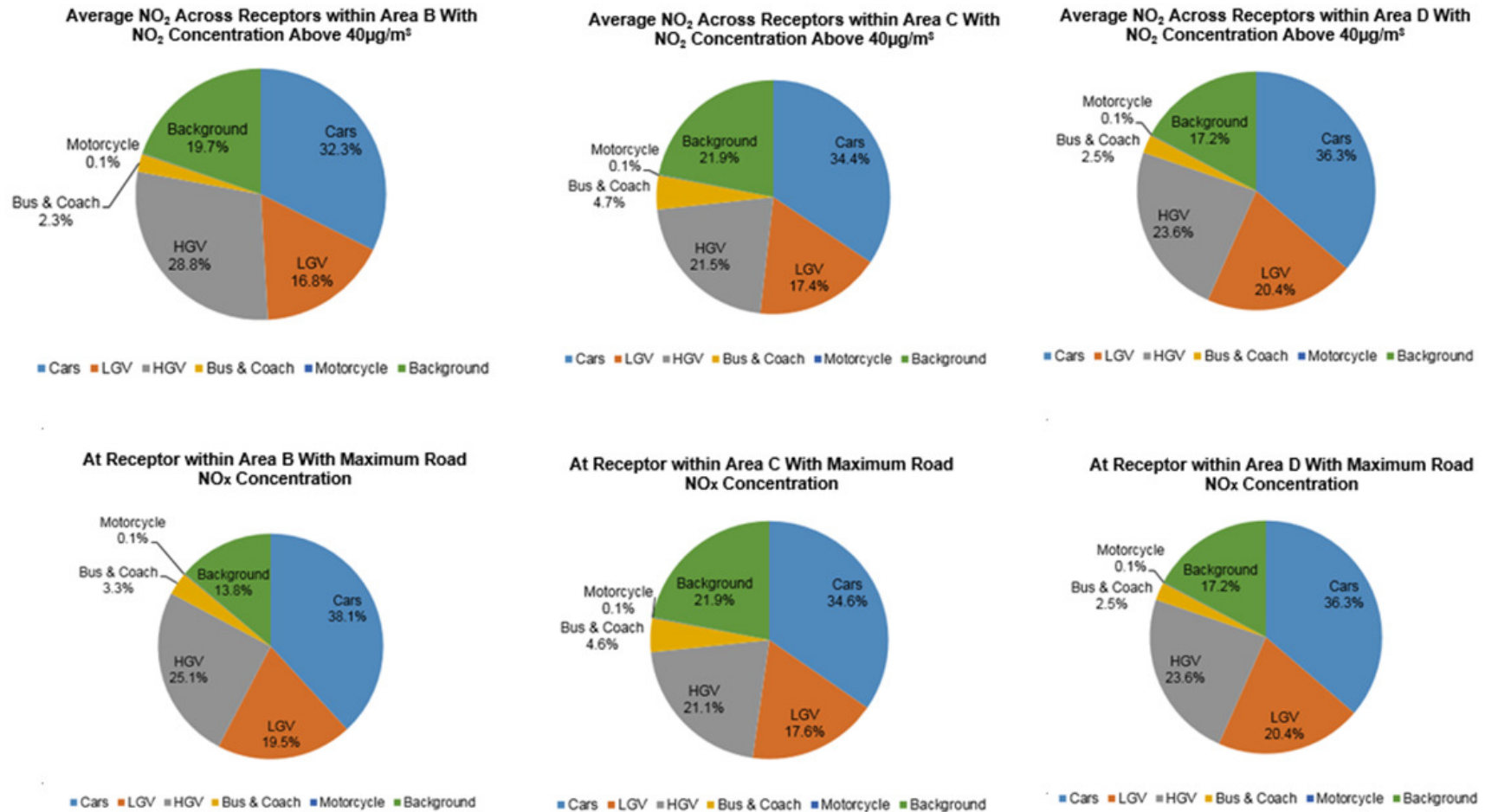


Table 4.2 – Detailed Source Apportionment of NO_x Concentrations Covering Area B, C and D

Results	All Vehicles	Cars	LGV	HGV	Bus & Coach	Motorcycle	Background
Average Across Modelled Receptors Within Area B Reporting NO₂ Annual Mean Concentrations to be Above 40µg/m³							
NO _x Concentration (µg/m ³)	71.0	28.5	14.8	25.5	2.1	0.1	17.4
Percentage of total NO _x	80.3%	32.3%	16.8%	28.8%	2.3%	0.1%	19.7%
Percentage Road Contribution to total NO _x	100.0%	40.2%	20.9%	35.8%	2.9%	0.2%	-
Average Across Modelled Receptors Within Area C Reporting NO₂ Annual Mean Concentrations to be Above 40µg/m³							
NO _x Concentration (µg/m ³)	59.1	26.0	13.2	16.2	3.6	0.1	16.6
Percentage of total NO _x	78.1%	34.4%	17.4%	21.5%	4.7%	0.1%	21.9%
Percentage Road Contribution to total NO _x	100.0%	44.1%	22.3%	27.5%	6.0%	0.1%	-
Average Across Modelled Receptors Within Area D Reporting NO₂ Annual Mean Concentrations to be Above 40µg/m³							
NO _x Concentration (µg/m ³)	77.9	34.1	19.2	22.2	2.3	0.1	16.1
Percentage of total NO _x	82.8%	36.3%	20.4%	23.6%	2.5%	0.1%	17.2%
Percentage Road Contribution to total NO _x	100.0%	43.8%	24.6%	28.4%	3.0%	0.1%	-
At Location within Area B with Maximum Road NO_x Concentration (Receptor 108)							
NO _x Concentration (µg/m ³)	108.8	48.1	24.6	31.7	4.2	0.2	17.4
Percentage of total NO _x	86.2%	38.1%	19.5%	25.1%	3.3%	0.1%	13.8%
Percentage Road Contribution to total NO _x	100.0%	44.2%	22.7%	29.1%	3.9%	0.1%	-
At Location within Area C with Maximum Road NO_x Concentration (Receptor 39)							
NO _x Concentration (µg/m ³)	59.2	26.3	13.3	16.0	3.5	0.1	16.6
Percentage of total NO _x	78.1%	34.6%	17.6%	21.1%	4.6%	0.1%	21.9%
Percentage Road Contribution to total NO _x	100.0%	44.3%	22.5%	27.1%	5.9%	0.1%	-
At Location within Area D with Maximum Road NO_x Concentration (Receptor 137)							
NO _x Concentration (µg/m ³)	77.9	34.1	19.2	22.2	2.3	0.1	16.1
Percentage of total NO _x	82.8%	36.3%	20.4%	23.6%	2.5%	0.1%	17.2%
Percentage Road Contribution to total NO _x	100.0%	43.8%	24.6%	28.4%	3.0%	0.1%	-

Figure 4.2 – Detailed Source Apportionment of NO_x Concentrations Focussing on Areas B, C and D Respectively



4.4. Required Reduction in Emissions

In line with Technical Guidance LAQM.TG16 Chapter 7, the worst case emission reduction requirement is presented in Table 4.3 below. This was completed at the modelled receptor ID 108, where an NO₂ concentration of 59.3µg/m³ was predicted. This location was identified from the three modelled exceedance areas from the 2018 modelling report.

The NO₂ and NO_x values from the background maps 1km² grid square x532500, y343500 was used as part of the emission reduction calculation.

Table 4.3 – Emission reduction requirement (worst case)

AQMA	Required NO ₂ Concentration Reduction [worst case] (µg/m ³)	Required Reduction in Road Related NO _x Emissions [worst case] (%)	Worst Case Monitoring/Modelled Location
1	19.3µg/m ³	51%	Site 108 (x532545, y343702) – Residential property adjacent to the A52 roundabout, Liquorpond St

4.5. Key Priorities

The 2018 dispersion modelling assessment⁴ undertaken has provided an informed perspective on the current NO₂ challenges within Boston town centre and its associated strategic roads.

In order to aid development of the AQAP, the results of the modelling assessment⁴ together with the steering group meetings undertaken within 2019, have enabled the long list of possible action plan measures to be considered. These measures were appraised and scored by level of overall viability where the lower the total score, the more feasible in terms of cost and practicality. The measures listed within Appendix C: Consideration of Measures were reviewed in order to mitigate existing and anticipated exceedances of the NO₂ annual mean objective within Boston. The key priorities for the resultant action plan, as shown in Table 4.4, are as follows:

- Junction and road improvements to improve traffic flows within Boston;
- Increase public awareness of local air quality issues, including the promotion of alternative methods of transport such as walking and cycling;
- Procurement of low emission public transport;
- Encouragement of electric vehicle uptake with increased charging point infrastructure and promotion of electric vehicle information¹⁰;
- Assessments of air quality and dust to be implemented for new developments and construction sites as outlined within the local plan⁸;
- Low emission updates to existing fleet; and
- Encouragement of increased rail use, both for freight and passenger rail.

¹⁰ <https://www.goultralow.com/>

4.6. AQAP Measures

Table 4.4 and Table C1 in Appendix C detail the Boston Borough Council AQAP measures.-They contain:

- a list of the actions that form part of the plan
- the responsible individual and departments/organisations who will deliver this action
- estimated cost of implementing each action
- expected benefit in terms of pollutant emission and/or concentration reduction
- the timescale for implementation
- how progress will be monitored

NB: Please see future ASRs for annual updates on progress of implementation for these measures.

Table 4.4 - Air Quality Action Plan Measures

Measure No.	Measure	EU Category	EU Classification	Lead Authority	Planning Phase	Implementation Phase	Key Performance Indicator	Target Pollution Reduction in the AQMA	Progress to Date	Estimated Completion Date	Comments
1	Provision of the Outer Distributor Road for Boston	Traffic Management	Strategic highway improvements	LCC / BBC	The Boston Transport Strategy considers the Distributor Road as a longer term aspiration, in excess of 2036	South East Lincolnshire Local Plan 2011-2036	Traffic counts, non-automatic NO ₂ monitoring	Significantly reduce levels of Heavy Good Vehicles, achievement of annual target mean. <40µg/m ³	Phase 1 Quadrant housing and retail development under construction	Expected completion to exceed the 2036 local plan end year, however the majority of works are expected to take place within the local plan period	Boston Transport Strategy 2016-2036, South Lincolnshire Local Plan Policy 33 looks to protect development corridor for distributor road
2	Improved traffic flows (Junction Improvements)	Traffic Management	Strategic highway improvements	LCC / BBC	The Boston Transport Strategy	South East Lincolnshire Local Plan 2011-2036	Traffic counts, non-automatic NO ₂ monitoring	Significantly reduce levels of Heavy Good Vehicles, achievement of annual target mean. <40µg/m ³	Feasibility study being undertaken on 9 potential junctions/ traffic measures	Feasibility studies likely to be completed during early 2020. Schemes that are feasible for progression no completion date at this time	Outcome of feasibility studies - funding of schemes being considered being funded by Lincolnshire County Council

Measure No.	Measure	EU Category	EU Classification	Lead Authority	Planning Phase	Implementation Phase	Key Performance Indicator	Target Pollution Reduction in the AQMA	Progress to Date	Estimated Completion Date	Comments
3	Investigate setting emission standards for taxis & anti-idling on taxi ranks	Policy Guidance and Development Control	Regional Groups Co-ordinating programmes to develop Area wide Strategies to reduce emissions and improve air quality	LCC / BBC	The Boston Transport Strategy	South East Lincolnshire Local Plan 2011-2036	NO ₂ annual results near to taxi ranks/ junctions	Significantly reduce levels of passenger vehicles, achievement of annual target mean. <40µg/m ³	Ongoing	Initiate review of taxi licensing policy 2020	Improved standards for older taxis and encourage shift to greener less polluting vehicles. Will require a taxi licensing policy change and would require any new standards imposed as a result to have a reasonably long lead in time to allow operators a reasonable time to replace vehicles

Measure No.	Measure	EU Category	EU Classification	Lead Authority	Planning Phase	Implementation Phase	Key Performance Indicator	Target Pollution Reduction in the AQMA	Progress to Date	Estimated Completion Date	Comments
4	Encourage the use of electrical vehicles by providing public charging points	Promoting Low Emission Transport	Procuring alternative Refuelling infrastructure to promote Low Emission Vehicles, EV recharging, Gas fuel recharging	LCC / BBC	The Boston Transport Strategy	South East Lincolnshire Local Plan 2011-2036	Measure utilisation of points	Reduce levels of passenger vehicles, achievement of annual target mean. <math><40\mu\text{g}/\text{m}^3</math>	The 'Boston Boost' EV charging point rollout project has obtained funding from the Energy Savings Trust/OLEV for 18 charging point across 7 public car parking locations in Boston	Boston Boost project to be completed by end of March 2020.	Extension and development of the scheme subject to take/use of existing Boston Boost project installations and future external funding opportunities. Capacity on grid for rapid charging points in particular - Western Power

Measure No.	Measure	EU Category	EU Classification	Lead Authority	Planning Phase	Implementation Phase	Key Performance Indicator	Target Pollution Reduction in the AQMA	Progress to Date	Estimated Completion Date	Comments
5	Encourage Electric charging point to be installed in new build homes and commercial premises through development process	Promoting Low Emission Transport	Procuring alternative Refuelling infrastructure to promote Low Emission Vehicles, EV recharging, Gas fuel recharging	LCC / BBC	The Boston Transport Strategy	South East Lincolnshire Local Plan 2011-2036	Monitor uptake per development	Reduce levels of passenger vehicles, achievement of annual target mean. <math><40\mu\text{g}/\text{m}^3</math>, consider impact on development and if likely to improve receptor emissions with reference to AQA	Requests being made through planning process. Development of developer air quality guidance based on PHE East Midlands Air Quality Network Guidance	Air Quality guidance to developer to be completed by mid-2020. Continuation of installation of electric charging points through the planning process - ongoing	Government currently considering amendments to Building Regulations to require all new build residential and commercial property to install electric charging points subject to certain qualifying conditions may accelerate provision. BBC/LCC support this measure. Capacity on existing grid network - Western Power may be an inhibitor.
6	Into Town Bus Service – increase patronage/service provision	Transport Planning and Infrastructure	Bus route improvements	LCC / BBC	The Boston Transport Strategy	South East Lincolnshire Local Plan 2011-2036	Monitor passenger numbers	Increase public transport use	3 Cross town circular loops every 30 minutes. Passenger numbers approx. 23000 per month	Ongoing -look to encourage operator to extend routes / provide new routes where opportunities arise	Will require cooperation and potential investment from local bus operators

Measure No.	Measure	EU Category	EU Classification	Lead Authority	Planning Phase	Implementation Phase	Key Performance Indicator	Target Pollution Reduction in the AQMA	Progress to Date	Estimated Completion Date	Comments
7	Investigate the provision of Cleaner Buses for Into to Town Bus Services (other bus services)	Vehicle Fleet Efficiency	Promoting Low Emission Public Transport	LCC / BBC	The Boston Transport Strategy does not support the merits of a Park & Ride for Boston. However, the adopted Boston Transport Strategy does propose other improvements to public transport	South East Lincolnshire Local Plan 2011-2036	Quantify low-emission bus procurement	Reduce levels of passenger vehicles, achievement of annual target mean. <math><40\mu\text{g}/\text{m}^3</math>, increase efficiency of public transport fleet	New measure	Further work required - explore opportunities to help fund measures through DEFRA air quality grant scheme	External funding will be required to support local bus operators to replace vehicles -links also to provision 17 where service procurement may be used as a driver to upgrade/retrofit vehicles to reduce emissions
8	Request Air Quality Assessments for proposed developments that are likely to have a significant impact on local air quality	Policy Guidance and Development Control	Air Quality Planning and Policy Guidance	LCC / BBC	South East Lincolnshire Local Plan 2011-2036	South East Lincolnshire Local Plan 2011-2036	Obtain the additional concentrations of developments using the AQA data and report on any impacts in ASR	Control of existing and newly introduced receptor exposure	Air Quality assessments required for all non-domestic curtilage applications	New planning validation checklists approved by BCC as of January 2019. Further air quality guidance to developer to be completed by mid-2020.	Varied standards of information received by applicants - this will be improved by better guidance to applicants.

Measure No.	Measure	EU Category	EU Classification	Lead Authority	Planning Phase	Implementation Phase	Key Performance Indicator	Target Pollution Reduction in the AQMA	Progress to Date	Estimated Completion Date	Comments
9	Investigate reduced car parking charges for EV/Hybrid vehicles in LA car parks and priority parking for such vehicles	Promoting Low Emission Transport	Priority parking for LEV's	LCC / BBC	Build on existing civil parking enforcement	South East Lincolnshire Local Plan 2011-2036	Monitor low emission vehicles using car parks, employ enforcement on other vehicles parked in priority spaces.	Reduce levels of diesel/petrol vehicles, achievement of annual target mean. <40µg/m ³	Ongoing	Further work required	Potential loss of revenue which could be used to support/contribute to other schemes with environmental benefits
10	Promotion of Cycling and Walking as an alternative to cars	Promoting Travel Alternatives	Promotion of cycling	LCC / BBC	Schemes to encourage walking and cycling implemented	South East Lincolnshire Local Plan 2011-2036	Promotion of walking has been delivered through the LTP through Safe Routes to School and Community Travel Zones in Boston	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.	Increase in number of participants/partners. Traffic counts on major roads	-	Boston Community Health Walks delivers 12 health walks a week. There are 800 attendances a month

Measure No.	Measure	EU Category	EU Classification	Lead Authority	Planning Phase	Implementation Phase	Key Performance Indicator	Target Pollution Reduction in the AQMA	Progress to Date	Estimated Completion Date	Comments
11	Encourage the uptake of low emission vehicles (wider community)	Promoting Low Emission Transport	Other	LCC / BBC	The Boston Transport Strategy	South East Lincolnshire Local Plan 2011-2036	Traffic counts, non-automatic NO ₂ monitoring	Reduce levels of diesel/petrol vehicles, achievement of annual target mean. <40µg/m ³	Boston Borough Council provides information on its website regarding the benefits of choosing electric vehicles and links to Go Ultra Low website. Continued use of the planning system to increase the availability of charging point infrastructure	Ongoing throughout life of plan	Public perception of electric vehicles in terms of costs, charging availability etc.
12	Implement standards for control of dust from and emission from large construction site	Policy Guidance and Development Control	Air Quality Planning and Policy Guidance	LCC / BBC	South East Lincolnshire Local Plan 2011-2036	South East Lincolnshire Local Plan 2011-2036	Number of complaints regarding dust relating to construction/demolition activities	Record number of dust mitigation requirements implemented per site	Request construction and demolition managements plans routinely on developments through planning consent process and embed in permission	Measures routinely requested for larger developments to submit management schemes for approval and conditioned through planning	-

Measure No.	Measure	EU Category	EU Classification	Lead Authority	Planning Phase	Implementation Phase	Key Performance Indicator	Target Pollution Reduction in the AQMA	Progress to Date	Estimated Completion Date	Comments
13	Promotion of travel plans for new developments	Transport Planning and Infrastructure	Other	LCC / BBC	Air quality assessments are required of developers where a significant impact is likely. Measures for sustainable transport	South East Lincolnshire Local Plan 2011-2036	Air Quality Assessment conclusions and data	Ongoing development control	Ongoing	-	-
14	Liase with Environment Agency in respect of industrial emission from permitted site to ensure AQMA considered when setting emission standards	Promoting Low Emission Plant	Emission control equipment for small and medium sized stationary combustion sources / replacement of combustion sources	EA / BBC	Environmental Permits	Ensure visibility of environmental permits/request that stack emissions test results are available	Stack emissions	Ensure industrial emissions are monitored	Ongoing	Ongoing - ensure Environment Agency implement appropriate emission standards for combustion processes covered by Medium Combustion Plant Directive (MCPD) especially where these are in or may impact AQMAs	LA statutory consultees on applications for Part A and MCPD permits affecting AQMAs and therefore opportunity exists to influence permit conditions in relation to NOx

Measure No.	Measure	EU Category	EU Classification	Lead Authority	Planning Phase	Implementation Phase	Key Performance Indicator	Target Pollution Reduction in the AQMA	Progress to Date	Estimated Completion Date	Comments
15	Promote green waste collection services & discourage the use of bonfires for disposal of waste at domestic and commercial sites	Public Information	Other	BBC	Waste fleet provision	Promotion of recycling/enforcement on waste burning	Level of recycling	Statutory Nuisance enforcement ongoing.	Statutory Nuisance enforcement ongoing. Recycling of green waste at 52%	-	-
16	Investigate the use of council procurement procedures as a tool to encourage greener transport services	Vehicle Fleet Efficiency	Fleet efficiency and recognition schemes	LCC / BBC	Ongoing, exploring 2020 grant route	To encourage shift to low emission vehicles across the County	Number of low emission vehicles procured	Annual mean reduction achieved. <40µg/m ³	Ongoing	Encourage through procurement processes at BBC & LCC opportunities for improvement in service supplier fleet vehicles including those owned and operated by the councils	Funding availability
17	Provision of air quality information to public, schools to allow healthier choices	Public Information	Via other mechanisms	LCC / BBC	Production of schemes and reading material	Discourage anti idling outside schools, promote walking bus schemes, leaflet campaigns, provision of subsidised school transport	Monitor number of schools reached, number of schemes employed	Increase awareness and significantly reduce levels of passenger vehicles, achievement of annual target mean. <40µg/m ³	Ongoing	Ongoing - fresh campaign to directly target school traffic to encourage shift to more sustainable transport as alternative to the motor vehicles to be undertaken	-

Measure No.	Measure	EU Category	EU Classification	Lead Authority	Planning Phase	Implementation Phase	Key Performance Indicator	Target Pollution Reduction in the AQMA	Progress to Date	Estimated Completion Date	Comments
18	Work with operators to increase the use of rail freight/ shipping freight and passenger services	Freight and Delivery Management	Other	LCC / BBC Rail network	Rail travel/freight promotion	To encourage shift to more sustainable forms of transport	Rail passenger and freight counts	Annual mean reduction achieved. <math><40\mu\text{g}/\text{m}^3</math>	South East Lincolnshire Local Plan 2011-2036	Port of Boston already utilise rail freight services for imported steel. Ongoing exploration of opportunity for other businesses. Potential PE21 development project - part of the objectives of project to enhance connectivity between sustainable transport options including Boston railway station	Initial freight rail scheme abandoned from previous AQAP however to be reconsidered - may be additional opportunities for freight in particular.
19	Workplace Parking Levy/Lift Sharing Schemes	Promoting Travel Alternatives	Workplace Travel Planning	BBC	Enforcement of parking charges to promote alternative travel	Consider application of workplace charging levy Encourage car sharing by providing information to public and local businesses on existing vehicle sharing schemes - such as Lift Share.	Numbers of car users/levels of revenue from car parking	Reduce levels of passenger vehicles, achievement of annual target mean. <math><40\mu\text{g}/\text{m}^3</math>	Ongoing	Further work required	Workplace parking levy unlikely to be popular with businesses, wider public and politically

5. Development and Implementation of Boston Borough Council AQAP

5.1. Consultation and Stakeholder Engagement

In developing/updating this AQAP, we have worked with other local authorities to improve local air quality. Schedule 11 of the Environment Act 1995 requires local authorities to consult the bodies listed in Table 3.1.

Table 5.1 – Consultation Undertaken

Yes/No	Consultee
Yes	the Secretary of State (to be under
Yes	the Environment Agency
Yes	the highways authority
Yes	all neighbouring local authorities
Yes	other public authorities as appropriate, such as Public Health officials
Yes	bodies representing local business interests and other organisations as appropriate

In addition to consultees list in Table 5.1, Boston Borough Council undertook an online survey to seek the views of the wider public in relation the proposed action plan. The consultation period ran from the 19th February to the 19th March 2020. Boston Borough Council was keen to get as much public and business feedback as possible. Therefore the online consultation was publicised on the council’s website and news feed, via the council’s Facebook & Twitter feeds and via the Boston Bulletin, a weekly emailed publication which is distributed to approximately 4000 residents of the borough who have signed up to receive it.

Summary of Responses to Online Survey

Headline Results

26 responses were received.

- 76% of respondents were local residents.
- 70% of respondents thought the issue of air quality in Boston was very important or important BEFORE reading the AQAP consultation
- 75% of respondents thought the issues of air quality in Boston was very important or important AFTER reading the AQAP
- 84% of respondents agreed (44%) or partially agreed (40%) with the overall approach described in the plan to improve air quality. Only 8% disagreed with the overall approach in the plan.

Of the measures proposed within the action plan those responding believed the following measures were of most importance:

- Provision of outer distributor road – 68%
- Junction improvement to aid traffic flows – 68%
- Promote cycling and walking as an alternative to the car – 64%
- Increase the patronage/service provision of the 'into town bus service' (48%)
- Work with rail operators to increase use of rail freight and passenger services (40%)
- Provision of cleaner buses (40%)

Of the measures proposed within the action plan those responding believed the following measures were of least importance:

- Workplace parking levy (68%)
- Investigate reduced car parking charges for EV/hybrid vehicles (56%)
- Discourage the use of bonfires for disposal of waste (44%)
- Implement standards for control of dust from construction sites (36%)
- Encourage the use of electric vehicles by providing public charging points. (20%)
- Work with rail operators to increase use of rail freight and passenger services. (32%)

The full response to our consultation engagement is given in Appendix A below.

5.2. Steering Group

As part of the AQAP process, a steering group was established in order to collate and establish air quality action plan measures deriving from all relevant council departments.

Table 5.2 - Steering Group Members

Steering Group Member	Representative of	Role
Tony Gray	Boston Borough Council	Environmental Health Manager
Nick Davis	Boston Borough Council	Principal Environmental Health Officer
Mike Gildersleeves	Boston Borough Council	Growth Manager
Pete Udy	Boston Borough Council	Planning Policy Officer
Clive Gibbon	Boston Borough	Economic Development Manager
Jenny Moore	Boston Borough Council	Environment & Sustainability Officer
Kathryn Masters	LCC Public Health Division	Locality Lead Boston & South Holland
Kristina Willoughby	Boston Borough Council	Town Centre Services Manager
Fiona White	Boston Borough Council	Principal Land Charges & Licensing Officer
Teresa James	LCC* Highways	Senior Project Leader (Major Schemes)
Andy Wharff	LCC Highways	Highways Manager (South)
Sean Johnson	LCC Public Health Division	Public Health Division
Matt Fisher	Boston Borough Council	Operations Manager
LCC – Lincolnshire County Council		

The Steering Group has met on three occasions in the process of measure development. The dates on which the meeting has taken place are 30th May, 30th June 2019 and 3rd September 2019.

6. Appendix A: Response to Consultation

Table A1 - Summary of Responses to Consultation and Stakeholder Engagement on the AQAP

Consultee	Category	Response
Secretary of State (DEFRA)	Central Government	No response received
LCC Highways	Transport	Funding currently being considered for measures such as feasibility studies for the junction improvements *NB Regular meetings held with LCC Highways Officers & LCC Councillors regarding transport in Boston (Boston Transport Group)
Environment Agency	Government Agency	No response received
PHE	Public Health	No response received
Neighbouring Authorities	Local Government	No response received

Comments were also sort directly from Lincolnshire Chamber of Commerce, Boston Town Area Committee*, Port of Boston, Lincolnshire NHS, United Lincolnshire NHS Trust, Age UK Lincoln & South Lincolnshire, Sustrans, Inland Waterways Association and Natural England.

No responses were received.

* In terms of the Boston Town Area Committee a number of the councillors sitting on this committee also serve on either Environment & Performance Committee or Cabinet and therefore have had oversight of the draft plan as it was reported to both.

Online Consultation Questionnaire

Full Results

Q1 - To help us understand who we have consulted with please indicate which of these best describes your view point in relation to this consultation

	n*	%
I am a local resident and these are my personal views	19	76%
I am not a local resident but work or visit Boston	5	20%
I am responding in a professional/business capacity	1	4%
I am responding on behalf of a non-business organisation	0	

None of the above	0	
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Q2 – How important did you think the issue of air quality was in Boston prior to reading the AQAP consultation?

	n*	%
Very important	8	31%
Important	10	39%
Not very important	7	27%
Not important/Don't know	1	4%

Q3 – How important did you think the issue of air quality was in Boston after to reading the AQAP consultation?

	n*	%
Very important	8	33%
Important	10	42%
Not very important	5	21%
Not sure/Don't know	1	4%

Q4 – Do you agree with the overall approach described in the plan to improve air quality? If not, why not?

	n*	%
Yes	11	44%
No, if no please specify below	2	8%
Partially	10	40%
Not sure/Don't know	2	8%

A number of comments were received (9). These focussed on 3 main themes:

1. Need to provide better and safer cycling routes and secure storage locations.
2. That the traffic issue can only be solved by a bypass.
3. Improved bus services which were seen as poor particularly to outlying villages resulting in the need for people to use their cars.

Other comments included the 'high price of electric cars', 'over popularised climate change clap trap', 'no benefit in concentrating on traffic issue alone' and 'not doing enough'.

Q5 – Do you agree with the overall approach described in the plan to improve air quality? If not, why not?

	High Importance	Medium Importance	Low Importance	Don't know
Provision of outer distributor road	68%	20%	8%	4%
Junction improvement to aid traffic flows	68%	16%	16%	
Setting emission standards for taxis and anti-idling on taxi ranks	28%	40%	28%	4%

Encourage the use of electric vehicles by providing public charging points	20%	44%	36%	
Encourage electric charging points to be installed in new build homes/businesses through the planning process	36%	32%	28%	4%
Increase the patronage/service provision of the 'into town bus service'	48%	28%	20%	4%
Provision of cleaner buses	40%	40%	20%	
Request air quality assessments for developments	17%	50%	25%	8%
Investigate reduced car parking charges for EV/hybrid vehicles	12%	32%	56%	
Promote cycling and walking as an alternative to the car	64%	20%	16%	
Encourage the take up of low emissions vehicles	24%	52%	24%	
Monitoring of traffic and air pollutants	32%	56%	12%	
Implement standards for control of dust from construction sites	12%	48%	36%	4%
Promote travel plans for new developments	28%	48%	20%	4%
Liaise with Environment Agency regarding industrial emissions from permitted sites to ensure AQMQ considered when setting emission limits	20%	40%	28%	12%
Discourage the use of bonfires for disposal of waste	24%	32%	44%	
Use procurement procedures as a tool to encourage greener transport services	16%	52%	24%	8%
Provision or air quality information to public, schools to inform healthier choices	28%	56%	12%	4%
Work with rail operators to increase use of rail freight and passenger	40%	28%	32%	

services				
Workplace parking levy	16%	16%	68%	

Q6 – Are there any other measures you feel the council of its partners should be taking to improve air quality which are not included in the draft AQAP?

14 comments were received, of those 10 felt there were further measures that could be put in place of which most already fall with the scope of the measures to be furthered where possible as part of the action plan.

The main themes of these comments were:

1. Provide a bypass
2. Need to provide more and safer cycle lane connecting all key locations. Provide safer secure cycle storage and promote public awareness of responsible driving around cyclists.
3. Stop building houses without investing in local infrastructure.
4. Town centre car free days, ban on single occupancy vehicles at peak times, and restricting road haulage to night time.

Other comments included ‘developers to donate 500 tree saplings per house constructed’, ‘take action over the week long gassing of Boston people by the May Fair and its huge static diesel engine’ and ‘regulate and measure how much carbon dioxide and other toxic gases are being release from local business’.

Q7 – Which of these measures would you personally consider taking to improve air quality in Boston? Please tick all that apply

	n*
Walk more	19
Cycle more	15
Use public transport	10
Share a lift	9
Use a lower emission vehicle	11
None of the above	4

Q8 – What issues of factors do you currently consider prevent you from regularly using more sustainable transport options or low emissions/electric vehicles?

15 comments were received, the majority of these related to public transport and electric vehicles.

In terms of electric vehicles a number of respondents made comments regarding the current high costs of hybrid and electric vehicles and on about the lack of charging facilities.

In terms of public transport a number commented on infrequent bus services and bus stops especially away from the town centre in rural areas and the cost associated with bus use.

7. Appendix B: Reasons for Not Pursuing Action Plan Measures

Table B1 - Action Plan Measures Not Pursued and the Reasons for that Decision

Action category	Action description	Reason action is not being pursued (including Stakeholder views)
Transport Planning and Infrastructure	Resurrection of the provision of the dock link road	LCC advise scheme is now defunct and land and resources no longer available
Promoting Travel Alternatives	Park & Ride Scheme	LCC advise that based on traffic surveys unlikely to be of benefit
Policy Guidance and Development Control	Anti-idling Enforcement – taxi ranks, school and other specific locations	The direct impact on a far reaching air quality anti-idling enforcement is likely to be negligible - limited resources better deployed to other, more specific measures
Transport Planning and Infrastructure	Low Emission Zone in AQMA area	One main arterial route through Boston which is divided north to south by tidal river - lack of alternative routes
Traffic Management	Priority Lanes for buses/high occupancy vehicles	Existing single carriage way network does not lend itself to priority lane formation - no land available land to widen carriageways
Traffic Management	Spot Testing Vehicle Emissions	Limited resources better deployed to other measures
Policy Guidance and Development Control	Ongoing monitoring of traffic and air pollutants	Considered to be a LAQM requirement and a tool to quantify a measure rather than a measure in itself
Transport Planning and Infrastructure	Provision of secondary school to west of river to alleviate school run traffic flows east of the river	Not deliverable within life of AQAP

8. Appendix C: Consideration of Measures

Table C1 – Ranked Long List of Measures

No.	Measure	Timescale	Feasibility (A)	Public Acceptability (B)	Relative Cost (C)	AQ Benefit (D)	Cost* Air Quality Benefit (E) =(C x D)	Other Impacts (F)	Total Score*
1	Provision of outer distributor road for Boston	L	3	1	5	1	5	2	11
2	Improved traffic flows (Junction Improvements)	S-M	2	1	3	3	9	2	14
3	Investigate setting emission standards for taxis & anti-idling on taxi ranks	S	2	2	2	3	6	2	12
4	Encourage the use of electrical vehicles by providing public charging points	S-M	1	1	2	4	8	2	12
5	Encourage Electric charging point to be installed in new build homes and commercial premises through development process	S-M	2	2	1	4	4	2	11
6	Into Town Bus Service – increase patronage/service provision	S-M	3	1	2	3	6	2	12
7	Investigate the provision of Cleaner Buses for Into to Town Bus Services (other bus services)	M	3	1	3	3	9	2	15
8	Request Air Quality Assessments for proposed developments that are likely to have a significant impact on local air quality	S	1	2	1	4	4	1	8
9	Investigate reduced car parking charges for EV/Hybrid vehicles in LA car parks and priority parking for such vehicles	S-M	3	2	2	4	8	3	16
10	Promotion of Cycling and Walking as an alternative to cars	S	2	2	3	3	9	1	14
11	Encourage the uptake of low emission vehicles	S	1	3	1	4	4	1	9
12	Ongoing monitoring of traffic and air pollutants	S	1	3	1	5	5	1	10

No.	Measure	Timescale	Feasibility (A)	Public Acceptability (B)	Relative Cost (C)	AQ Benefit (D)	Cost*Air Quality Benefit (E) =(C x D)	Other Impacts (F)	Total Score*
13	Implement standards for control of dust from and emission from large construction site	S-M	2	2	1	4	4	1	9
14	Promotion of travel plans for new developments	S-M	3	3	1	3	3	3	12
15	Liaise with Environment Agency in respect of industrial emission from permitted site to ensure AQMA considered when setting emission standards	S	1	3	1	4	4	1	9
16	Promote green waste collection services & discourage the use of bonfires for disposal of waste at domestic and commercial sites	S	1	1	1	5	5	2	9
17	Investigate the use of procurement procedures as a tool to encourage greener transport services	S-M	3	2	2	5	10	3	18
18	Provision of air quality information to public, schools to allow healthier choices	S	2	2	1	4	4	2	10
19	Provision of secondary school to west of river		3	3	4	3	12	3	21
20	Work with operators to increase the use of rail freight/ shipping freight and passenger services	M	3	3	2	4	8	3	17
21	Resurrection of the provision of the dock link road (SCHEME ABANDONED)		5	3	5	3	15	4	27
22	Park & Ride Scheme		4	3	4	3	12	3	22
23	Anti-idling Enforcement – taxi ranks, school and other specific locations		3	4	2	5	10	3	20
24	Low Emission Zone in AQMA area		5	5	3	2	6	5	21

No.	Measure	Timescale	Feasibility (A)	Public Acceptability (B)	Relative Cost (C)	AQ Benefit (D)	Cost*Air Quality Benefit (E) =(C x D)	Other Impacts (F)	Total Score*
25	Priority Lanes for buses/high occupancy vehicles		5	3	3	3	9	3	20
26	Spot Testing Vehicle Emissions		4	3	2	5	10	3	20
27	Workplace Parking Levy	S-M	3	4	2	4	8	4	19

Boston Borough Council - Scoring Framework

Feasibility Score:

- 1 - Readily feasible; no barriers
- 2 - Feasible; minor barriers easily overcome
- 3 - Potentially feasible
- 4 - Unlikely to be feasible; significant obstacles to be overcome
- 5 - Highly unlikely to be feasible

Public Acceptability Score:

- 1 - Highly acceptable
- 2
- 3 - Neutral
- 4

5 - Highly unacceptable

Cost: For the scoring it is the relative cost that is important, the figures provided are purely indicative. It has not been the intention to carry out a detailed cost analysis

1 – low £ <10,000

2 – £ 10,000 -100,000

3 – £ 100,000 - 1m

4 – £ 1m - 10m

5 - Very High 10m+

Air Quality Benefit: It is important to note that when compared to the necessary reductions to meet the air quality objectives, even a score of 1 ('very substantial benefits') is unlikely to ensure that the air quality objectives would be achieved in many areas. The annual mean concentrations provided are indicative.

Score:

1 - Very substantial benefits, covering wide geographic area, including AQMAs >2m g/m³

2 - Significant benefits, covering wide geographic area, including AQMAs 0.5 - 2 mg/m³

3 - Small benefits, or significant benefits restricted spatially 0 - 0.5 mg/m³

4 - Negligible / imperceptible benefits approx. 0

5 - No benefits / potentially dis-benefits ≤ 0

Other Impacts Score:

1 - Overall large benefits likely

2 - Feasible; minor barriers easily overcome

3 - Neutral (either no other impacts or beneficial/detrimental impacts approximately balanced)

4 - Unlikely to be feasible; significant impacts to be overcome

5 - Overall large detrimental

Timescale:

S upto 24 months

M 2-5 years L 5years +

9. 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
AQS	Air Quality Strategy
ASR	Air quality Annual Status Report
Defra	Department for Environment, Food and Rural Affairs
EU	European Union
LAQM	Local Air Quality Management
NO ₂	Nitrogen Dioxide
NO _x	Nitrogen Oxides
PM ₁₀	Airborne particulate matter with an aerodynamic diameter of 10µm (micrometres or microns) or less
PM _{2.5}	Airborne particulate matter with an aerodynamic diameter of 2.5µm or less
BBC	Boston Borough Council
SHDC	South Holland District Council
LCC	Lincolnshire County Council

10. References

- Local Air Quality Management Technical Guidance LAQM.TG(16). February 2018. Published by Defra in partnership with the Scottish Government, Welsh Assembly Government and Department of the Environment Northern Ireland.
- Boston Borough Council 2019 ASR
- Boston Borough Council 2018 Detailed modelling assessment
- Boston Borough Council 2006 Local Air Quality Management – Air Quality Action Plan
- Boston Transport Strategy (2016-2036)
- South East Lincolnshire Local Plan 2011-2036