

Air Quality Action Plan (2024 – 2029) for the district of East Hertfordshire

March 2024



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Produced in partnership with Hertfordshire County Council
and Bureau Veritas in fulfilment of Part IV of the
Environment Act 1995
Local Air Quality Management

Information	
Local Authority	East Herts Council
Department	Environmental Health Housing and Health Service
Address	East Herts Council Wallfields Pegs Lane Hertford SG13 8EQ
Telephone	01279 655261
E-mail	environmental.health@eastherts.gov.uk
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1 Executive Summary

1.1 The national context

Air pollution is bad for human health. Mounting scientific evidence shows the scale of the impact of poor ambient air quality on health.

In December 2020, the impact of air pollution was made evident in the most terrible of ways when the first case of air pollution being ruled as a medical cause of death was recorded in the coroner's report relating to the tragic death of nine-year old Ella Kissi-Debrah^[1].

Part IV of the Environment Act 1995 (as Amended 2021) sets out national air quality objectives (AQO) which should be considered as the maximum levels of air pollution to which people should be exposed. These AQOs are:

- the *annual* average level of nitrogen dioxide (NO₂) in a location should be no higher than 40µg/m³, that is, 40 micrograms of NO₂ per cubic metre of air and
- the *hourly* average level of nitrogen dioxide (NO₂) in a location should be no higher than 200µg/m³.

1.2 Air quality in East Hertfordshire

Our analysis shows that:

- while the 200µg/m³ *hourly* mean average level of NO₂ is **not** breached in any location
- the 40µg/m³ *annual* mean average level of NO₂ **is breached** in three areas in Bishop's Stortford, Hertford and Sawbridgeworth.

Resulting from these breaches, the council declared three Air Quality Management Areas (AQMAs):

- **Bishop's Stortford AQMA** – An area encompassing several properties around the junction of Dunmow Road, Hockerill Street, London Road and Stansted Road in Bishop's Stortford. Declared February 2007.
- **Hertford AQMA** – An area along Gascoyne Way, which passes through central Hertford and encompasses several residential and commercial properties. Declared May 2010.

¹ <https://www.judiciary.uk/prevention-of-future-death-reports/ella-kissi-debrah/>

- **Sawbridgeworth AQMA** – An area along London Road and Cambridge Road that encompasses several residential and commercial properties. Declared February 2014.

Air pollution in each of the three AQMAs is primarily the result of traffic.

Because we have declared AQMAs, we are required under the national legislation to produce this detailed action plan to tackle air pollution in each AQMA. This action plan is aimed at everyone who lives in, works in, visits or travels through East Hertfordshire. It will also be of particular interest to people who live in, walk through or drive through one of our three air quality management areas, as the interventions and initiatives within this action plan will help reduce the impact of air pollution on their health.

1.3 Who is exposed to air pollution in East Herts?

The analysis discussed in detail in this action plan shows that residents in the AQMAs are those most affected by air pollution. We recognise, however, that those walking, cycling and driving through the AQMAs will also experience poor air quality, though at levels below the nationally set maximum objectives for exposure.

1.4 Track record to date

This action plan builds on our good track record in tackling air pollution. For example, we have:

- trialled an e-car club, using Department for Environment, Food and Rural Affairs (DEFRA) funding, which served council staff in the day and the public outside of office hours with dedicated chargers in Hertford and Bishop's Stortford. This pilot scheme has led to the establishment of a staff e-car club and private car rental companies in the area offering low emission vehicles for hire by the public
- published a Sustainability Supplementary Planning Document (SPD) with a specific air quality chapter applying strict air quality measures to all developments
- introduced the strictest emissions standards in Hertfordshire for the taxi vehicles we licence
- installed over 60 e-vehicle charging points to promote the switch to e-vehicles

- replaced our fleet of diesel vans with e-cars
- installed anti-idling signage in our own car parks and beyond.

In addition, together with our partners, principally Hertfordshire County Council, we have:

- introduced smart traffic light management at Hockerill junction in the Bishop's Stortford Air Quality Management Area (AQMA) to promote traffic flow and minimise engine idling
- improved the lighting and visual appeal of pedestrian subways to counteract feelings of a lack of safety as a barrier to active travel
- annually promoted Clean Air Day
- supported the introduction of demand responsive bus services in the northern half of the district
- actively participated in initiatives organised through the Hertfordshire Climate Change and Sustainability Partnership (HCCSP), including leading on raising taxi emission standards across the county.

We have continued to facilitate behaviour change by:

- introducing and promoting an air alert notification scheme
- working with schools and businesses, using DEFRA funding, on active travel alternatives to daily commutes.

1.5 East Herts Air Quality Priorities

There is much still to do. We and our partners have reviewed the local evidence, the policies available and best practice to identify four key priorities for action:

- Priority 1: Reduce the impact of traffic levels and congestion on air quality
- Priority 2: Mitigate the impact of future growth on air quality
- Priority 3: Support residents' make active travel choices
- Priority 4: Reduce East Herts Council's own impact on air quality.

We have devised an action plan with a series of measures to tackle each of these priority areas.

1.6 Responsibilities and commitment

This Air Quality Action Plan (AQAP) was prepared by the Strategic Environmental Health team of East Herts Council with the support and agreement of colleagues from the following teams:

- East Herts Council
 - wider Environmental Health team
 - Sustainability
 - Planning
 - Economic Development
 - Taxi licensing
 - Parking
- Hertfordshire County Council
 - Transport Planning and Highways
 - Clean Air
- Bureau Veritas air quality consultants.

This AQAP has been approved by the Head of Housing and Health, the member of the council's Senior Leadership Team with responsibility for both Environmental Health and Sustainability.

This AQAP has been signed off by the Director of Public Health, Hertfordshire County Council.

This AQAP will be subject to regular review by the council's Senior Leadership Team, the Executive Member for Environmental Sustainability and the council's Overview and Scrutiny Committee. Progress each year will be reported in the Annual Status Reports (ASRs) produced by East Herts Council as part of our statutory Local Air Quality Management duties. The ASRs are available on our website: <https://www.eastherts.gov.uk/environmental-health/air-quality>

If you have any comments on this AQAP please submit these through the 'Contact Environmental Health' page on the East Herts website:

<https://www.eastherts.gov.uk/environmental-health/contact-environmental-health>

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2 The Importance of Tackling Air Pollution

2.1 Public health context

Put simply, air pollution is bad for human health. Mounting scientific evidence shows the scale of the impact of poor ambient air quality on health.

In December 2020, the impact of air pollution was made evident in the most terrible of ways when the first case of air pollution being ruled as a medical cause of death was recorded in the coroner's report relating to the tragic death of nine-year old Ella Kissi-Debrah. In his report^[2], Philip Barlow, assistant coroner for the coroner area of Inner South London, stated:

Air pollution was a significant contributory factor to both the induction and exacerbations of [Ella's] asthma. During the course of her illness between 2010 and 2013 she was exposed to levels of nitrogen dioxide and particulate matter in excess of World Health Organization Guidelines. The principal source of her exposure was traffic emissions.

During this period there was a recognized failure to reduce the level of nitrogen dioxide to within the limits set by EU and domestic law which possibly contributed to her death.

Poor air quality is a significant contributory factor to the loss of life, shortening lives by an average of six months.^[3] The Committee on the Medical Effects of Air Pollution (COMEAP)^[4] provides advice to Government on the setting of air quality standards and has increasingly sought to consolidate evidence on the health burden and impacts of various pollutants, both in single occurrence and pollutants in combination. The current range of estimate for annual mortality burden for air pollution in the UK is estimated to be between 28,000 – 36,000 deaths.

The Air Quality Indicator in the Public Health Outcomes Framework (England) provides further impetus to join up action between the various tiers of local government and different local authority services which can impact on the

² <https://www.judiciary.uk/wp-content/uploads/2021/04/Ella-Kissi-Debrah-2021-0113-1.pdf>

³ https://assets.publishing.service.gov.uk/media/5a7e2f4640f0b62302689b57/COMEAP_mortality_effects_of_long_term_exposure.pdf

⁴ <https://www.gov.uk/government/collections/comeap-reports>

delivery of air quality improvements. The “Air Quality – A Briefing for Directors of Public Health”^[5] document published in March 2017 provides a one-stop guide to the latest evidence on air pollution, guiding local authorities to use existing tools to appraise the scale of the air pollution issue in its area. It also advises local authorities how to appropriately prioritise air quality alongside other public health priorities to ensure it is on the local agenda.

Besides NO₂, there is an increasing focus on fine particulate matter. PM_{2.5} is a pollutant of concern, this being particulate matter which is 2.5 microns or less in diameter. The AQMAs have not been declared for PM_{2.5} and the modelling (based on data collected from the continuous air quality monitor EH79) as part of the detailed assessment has shown predicted levels below the current annual mean objective of 20µg/m³.

National targets to further reduce PM_{2.5} have recently been introduced (see **Section 3.1** for more details). During the lifetime of our air quality action plan, a national interim PM_{2.5} target of 12µg/m³ by January 2028 will come into effect. The council is closely monitoring the emergent national guidance on monitoring and reporting of this target. Of note, the current continuous air quality monitor in Hertford and the three additional continuous air quality monitors to be installed in each of the three AQMAs will enable the council to monitor PM_{2.5} levels.

The Public Health Outcomes Framework data tool compiled by UK Health Security Agency (formally Public Health England) quantifies the mortality burden of PM_{2.5} within England on a county and local authority basis. The 2021 fraction of mortality attributable to PM_{2.5} pollution, that is, the percentage of total deaths as a result of pollution, in East Herts was 5.8%, which is above the national average of 5.5%, and higher than the regional average (East of England) of 5.5%^[6]. It should be noted that this figure only accounts for one pollutant (PM_{2.5}), for which stronger scientific evidence on links with mortality exist, and not NO₂, for which the AQMA is declared.

Furthermore, following a review of research into the mortality burden associated with the air pollution mixture rather than single pollutants acting independently,

⁵ <https://laqm.defra.gov.uk/assets/63091defraairqualityguide9web.pdf>

⁶ <https://fingertips.phe.org.uk/search/pollution#page/1/gid/1/pat/6/ati/401/are/E07000242/iid/30101/age/230/sex/4/cat/-1/ctp/-1/yrr/1/cid/4/tbm/1>

the Committee on the Medical Effects of Air Pollutants (COMEAP) are reviewing the legitimacy of linking deaths to one specific pollutant.

Further information about the health effects associated with poor air quality can be found on UKHSA link to the Global Action Plan website –

www.cleanairhub.org.uk/home

2.2 Local understanding of air pollution's impact on health

The focus on tackling air pollution and improving health outcomes is clear at both the Hertfordshire County Council (HCC) and East Herts Council tiers. Of note, HCC's Air Quality Strategy (2019)^[7] sets out the following strategic objectives for dealing with air quality issues:

- to gain a stronger understanding of the air quality issues within Hertfordshire
- to ensure that air quality is an integral part of everything that we do
- to develop a productive relationship with partners, in particular the District and Borough Councils, to achieve positive air quality outcomes
- to create clear leadership on air quality
- to establish a coherent workstream on air quality, including clarification on roles and responsibilities.

East Herts Council's Health and Wellbeing Strategy 2019-2023^[8] sets out the key priorities that affect people's health and wellbeing and includes facilitating 'residents living active and healthy lives' which clearly resonates with the push to reduce air pollution.

2.3 Working with local partners

To enable this action plan, the council is keen for both member and officer-led forums to be formed with representatives from East Herts Council and Hertfordshire County Council, co-opting people as appropriate. The purpose of

⁷ <https://www.hertfordshire.gov.uk/media-library/documents/about-the-council/data-and-information/public-health/air-quality-strategy.pdf>

⁸ <https://eastherts.fra1.digitaloceanspaces.com/s3fs-public/2019-10/Health%20and%20WellbeingStrategy%202019%20-%202023.pdf>

the forums would be to help overcome any obstacles and monitor progress on the AQAP.

The council will also look to engage with local members of parliament (MPs) to discuss changes at a national level which would also benefit the air quality in East Hertfordshire.

3 The National Legislative Framework for Tackling Air Pollution

3.1 National legislation: NO₂

Part IV of the Environment Act 1995 (as amended 2021) sets out national air quality objectives (AQO) which should be considered as the maximum levels of air pollution to which people should be exposed. These AQOs are:

- the *annual* average level of nitrogen dioxide (NO₂) in a location should be no higher than 40µg/m³, that is, 40 micrograms of NO₂ per cubic metre of air and
- the *hourly* average level of nitrogen dioxide (NO₂) in a location should be no higher than 200µg/m³.

Relevant regulations made under the Environment Act 1995 and guidance in the Local Air Quality Management Technical Guidance 2022 require that where at least one these AQOs are consistently breached, the local authority (that is, the district council in an area such as East Hertfordshire with both a district and county council) should declare an Air Quality Management Area (AQMA).

3.2 National legislation: PM_{2.5}

With regard to particulate matter (specifically PM_{2.5}), unlike when considering NO₂, the government has only recently set national objectives. These objectives have been set within the Environmental Targets (fine particulate matter) (England) Regulations 2023, brought in under Environment Act 2021. The two objectives, both to be met by 2040, are:

- annual mean concentrations of to be 10 µg/m³ or lower
- population exposure to PM_{2.5} to be reduced by 35% compared with 2018 levels.

The two targets are designed to work together to drive actions that both reduce concentrations where it is highest and reduce the pollution that everyone in the country experiences.

During the lifetime of our air quality action plan, a national interim PM_{2.5} target of 12µg/m³ by January 2028 will come into effect. It is, therefore, to be anticipated that the government will update its Local Air Quality Management Technical

Guidance in due course to provide guidance to local authorities on how to monitor, report and seek to reduce PM_{2.5} levels in line with these new national objectives.

The council is prepared to act on the emerging guidance. Of note, the current continuous air quality monitor in Hertford and the three additional continuous air quality monitors to be installed in each of the three AQMAs will enable the council to monitor PM_{2.5} levels so as to determine where to focus our interventions. Monitoring the emergent national guidance on reporting and reducing PM_{2.5} levels so as to determine interventions is included in the detailed action plan in **Section 13**.

3.3 National legislation: zero emission vehicle mandate

The Government's zero emission vehicle (ZEV) mandate^[9] sets out the percentage of new zero emission cars manufacturers will be required to produce each year. This requires 80% of new cars and 70% of new vans sold in the country to be zero emission by 2030, increasing to 100% by 2035.

Over time this move will help reduce pollution from NO_x, however it will not address the pollution from particulate matter.

3.4 East Herts Council's requirements under the national legislation

Unfortunately, the council's monitoring shows that there are three areas within the district where the level of air pollution is too high. Our analysis, reported in this action plan, shows that:

- while the 200µg/m³ *hourly* mean average level of NO₂ **is not breached** in any location
- the 40µg/m³ *annual* mean average level of NO₂ **is breached** in three areas in Bishop's Stortford, Hertford and Sawbridgeworth.

We have thus declared the following Air Quality Management Areas:

- **Bishop's Stortford AQMA** – An area encompassing several properties around the junction of Dunmow Road, Hockerill Street, London Road and

⁹ <https://www.gov.uk/government/consultations/a-zero-emission-vehicle-zev-mandate-and-co2-emissions-regulation-for-new-cars-and-vans-in-the-uk/outcome/zero-emission-vehicle-zev-mandate-consultation-summary-of-responses-and-joint-government-response>

Stansted Road in Bishop's Stortford. Declared February 2007. **Figure 1** shows the location covered by the AQMA.

Data showing the air quality in this AQMA from when it was first declared in 2007 to 2022 can be found in **Appendix E**.

While the pollution levels show a pattern of rises and falls, the levels in 2022 are in fact very similar to those when the AQMA was first declared in 2007.

- **Hertford AQMA** – An area along Gascoyne Way, which passes through central Hertford and encompasses several residential and commercial properties. Declared May 2010. **Figure 3** shows the location covered by the AQMA.

Data showing the air quality in this AQMA from when it was first declared in 2010 to 2022 can be found in **Appendix F**.

While the pollution levels have dropped in recent years, the levels in 2022 have started to indicate an increase again in pollution levels post the COVID-19 pandemic.

- **Sawbridgeworth AQMA** – An area along London Road and Cambridge Road that encompasses several residential and commercial properties. Declared February 2014. **Figure 5** shows the location covered by the AQMA.

Data showing the air quality in this AQMA from when it was first declared in 2014 to 2022 can be found in **Appendix G**.

While the pollution levels have dropped in recent years in this AQMA, the levels in 2022 have started to indicate a slight increase in pollution levels.

Because we have declared AQMA's, we are required under the national legislation to produce this detailed action plan to tackle air pollution in each AQMA.

This report explains in detail what we know about the locations and sources of air pollution in East Hertfordshire and thus what we and our partners will do between 2024 and 2029 to reduce air pollution.

It has been developed in recognition of the legal requirement on the council to work towards Air Quality Strategy (AQS) objectives under Part IV of the Environment Act 1995 (as Amended 2021) 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 regularly, at least every five years, and progress on measures set out within this plan will be reported annually within East Herts Council's air quality Annual Status Report (ASR).

This document has been written to be as easy to read and understand as possible by everyone with an interest in seeing air pollution reduced in the district while providing DEFRA with the required level of technical data to assure them that the council and its partners have thoroughly analysed the local situation and devised effective interventions in response.

3.5 Revocation of an Air Quality Management Area

Revoking an AQMA, that is, declaring that the air pollution has been sufficiently reduced to be below the national air quality objectives, is not something to be done lightly.

As noted above, each of the AQMAs in East Hertfordshire have been declared because of breaches of the $40\mu\text{g}/\text{m}^3$ *annual* mean average level of NO_2 . The monitoring is based the use of diffusion tubes in which case the national guidance, contained in the LAQM Technical Guidance 2022, requires at least three continuous years of readings at 10% below this level to revoke the AQMA applies. This means all recording locations in the AQMA would need to show NO_2 levels of no more than $36\mu\text{g}/\text{m}^3$ for three years running, with the readings during the COVID-19 pandemic not applying as the impacts of the lockdowns will have led to unrepresentative levels.

4 Exposure to Air Pollution in the Bishop's Stortford AQMA

This chapter of the report provides details of exposure to air pollution in the Bishop's Stortford Air Quality Management Area (AQMA).

Figure 1 shows the location of the council's air quality monitoring stations in and adjacent to the Bishop's Stortford AQMA which is centred on Hockerill junction.

Figure 1 – Bishop’s Stortford AQMA and air quality monitoring locations



4.1 Analysis of the *annual* mean average NO₂ concentration in the Bishop's Stortford AQMA

Table 1 gives the readings at the monitoring locations in Bishop's Stortford over the last five years. It can be seen that by 2022, two of the four roads at Hockerill junction are below the *annual* average of no more than 40µg/m³. Can the AQMA be revoked? No, as a consistent pattern of three years' readings at or below 36µg/m³ is not shown. Of note, the three years of low readings in Stanstead Road must be treated with caution as the 2020/21 and 2021/22 levels will have been impacted by the COVID-19 pandemic and lockdowns.

Table 1 gives annual mean average levels as the 'raw data' and as 'bias adjusted' figures. The latter figures are the raw numbers with a DEFRA formula applied to take account of the precise location of the monitoring in relation to residents and thus purport to give a better measure of how the residents in the area would be likely to experience the pollution. Both figures have been included for completeness.

Table 1 – LAQM diffusion tube monitoring – Bishop's Stortford AQMA

Site ID	Site location	Within Bishop's Stortford AQMA	Bias adjusted annual mean concentration (µg/m ³)				
			[Annual Mean NO ₂ Concentration] (µg/m ³)				
			<i>Figures in bold = level above the national objective of 40 µg/m³</i>				
			2018	2019 ^[10]	2020	2021	2022
EH12 EH31 EH32	Hockerill Street	Yes	35.4 [43.6]	43.8 [42.9]	34.5 [33.4]	33.4 [34.8]	38.9 [36.1]
EH17 EH35 EH36	Dunmow Road	Yes	51.4 [63.2]	59.5 [58.3]	46.9 [48.5]	47.3 [49.3]	48.8 [45.2]
EH18 EH37 EH38	Stansted Road	No	30.9 [38.0]	36.1 [35.4]	30.8 [29.8]	30.7 [31.9]	33.1 [30.6]

¹⁰ Year of readings used for source apportionment.

Site ID	Site location	Within Bishop's Stortford AQMA	Bias adjusted annual mean concentration ($\mu\text{g}/\text{m}^3$)				
			[Annual Mean NO ₂ Concentration] ($\mu\text{g}/\text{m}^3$)				
			<i>Figures in bold = level above the national objective of 40 $\mu\text{g}/\text{m}^3$</i>				
			2018	2019 ^[10]	2020	2021	2022
EH19 EH39 EH40	London Road	No	52.0 [64.0]	59.1 [57.9]	48.9 [47.4]	48.3 [50.3]	50.0 [46.3]

4.2 Analysis of the *hourly* mean average NO₂ concentration in the Bishop's Stortford AQMA

At present, we do not have data from a continuous air quality monitor in the Bishop's Stortford AQMA and so we use the guidance published by DEFRA to calculate whether the *hourly* mean average for NO₂ of 200 $\mu\text{g}/\text{m}^3$ objective has or is likely to have been exceeded.

DEFRA's Local Air Quality Management Technical Guidance (TG22)^[11] states that the *hourly* mean average of NO₂ of 200 $\mu\text{g}/\text{m}^3$ objective is only likely to be exceeded where the *annual* mean average concentrations are 60 $\mu\text{g}/\text{m}^3$ or more. As the data in **Table 1** reports levels below 60 $\mu\text{g}/\text{m}^3$ we can deduce that the hourly 200 $\mu\text{g}/\text{m}^3$ level is likely not to have been exceeded in the last five years.

4.3 Heat map showing NO₂ concentrations in the Bishop's Stortford AQMA

The 'heat map' in **Figure 2** shows the *modelled* air pollution levels in the Bishop's Stortford AQMA based on the readings from the various monitoring stations. The map uses DEFRA's standard scale, represented as yellow, orange and red, to indicate the severity of the NO₂ levels in each location.

The map illustrates that exceedances of the annual mean NO₂ concentration are primarily due to vehicle congestion at the Hockerill junction. This is exacerbated at this location by the "road canyon" effects of the surrounding streets due to narrow roads and buildings on either side of the roads. As can thus be anticipated, the modelling used for the heat maps illustrates that concentrations of air pollution in the AQMAs are highest in the centre of the main roads, with levels of pollution falling as one moves away from each road.

¹¹ <https://laqm.defra.gov.uk/wp-content/uploads/2022/08/LAQM-TG22-August-22-v1.0.pdf>

Figure 2 - Bishop's Stortford AQMA modelled pollutant concentrations (based on data from 2019)

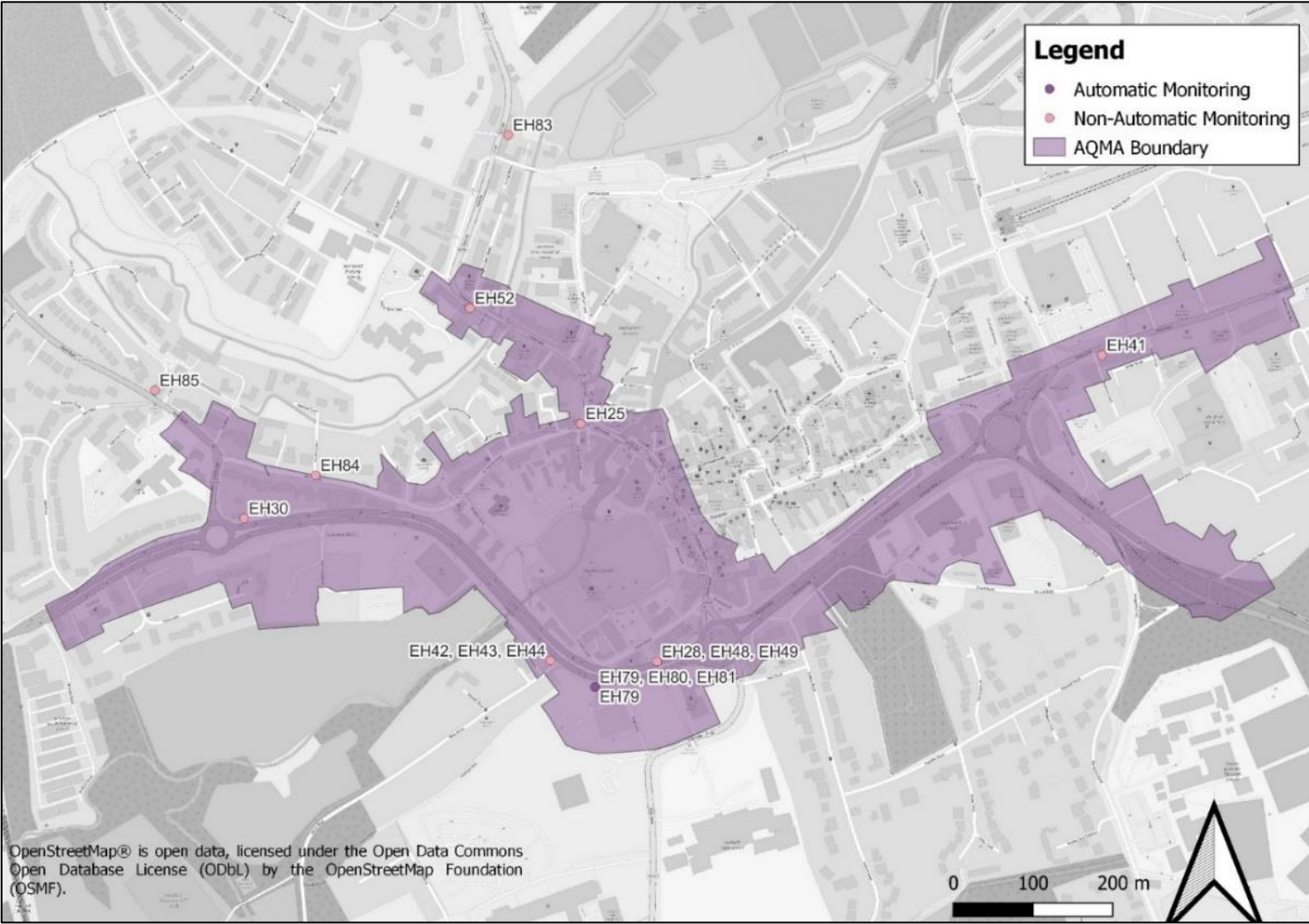


5 Exposure to Air Pollution in the Hertford AQMA

This chapter of the report provides details of exposure to air pollution in the Hertford Air Quality Management Area (AQMA).

Figure 3 shows the location of the council's air quality monitoring stations in and adjacent to the Hertford AQMA which is centred on Gascoyne Way.

Figure 3 - Hertford AQMA and air quality monitoring locations



5.1 Analysis of the *annual* mean average NO₂ concentration in the Hertford AQMA

From the data in **Table 2**, we can see that by 2022 all five monitoring locations are below the *annual* mean air quality objective (AQO) for NO₂ of 40µg/m³.

As discussed earlier in this report, to revoke an AQMA, the annual mean air quality objective for NO₂ must be at least 10% lower than the exceedance value of 40µg/m³ or, put another way, the readings must not be above 36µg/m³, for at least three years. Because of the unreliability of the data collected during the COVID-19 pandemic (2020 and 2021), we do not have three consecutive years' worth of data to support revoking this AQMA at the present time.

Table 2 gives annual mean average levels as the 'raw data' and as 'bias adjusted' figures. The latter figures are the raw numbers with a DEFRA formula applied to take account of the precise location of the monitoring in relation to residents and thus purport to give a better measure of how the residents in the area would be likely to experience the pollution. Both figures have been included for completeness.

Table 2 – LAQM diffusion tube monitoring – Hertford AQMA

Site ID	Site location	Within Hertford AQMA	Bias adjusted annual mean concentration (µg/m³)				
			[Annual Mean NO ₂ Concentration] (µg/m³)				
			<i>Figures in bold = level above the national objective of 40 µg/m³</i>				
			2018	2019 ^[12]	2020	2021	2022
EH25	Old Cross	Yes	35.1 [43.2]	41.8 [41.0]	33.1 [32.1]	32.3 [33.7]	32.0 [29.7]
EH28 EH48 EH49	Castle Street	Yes	28.4 [35.0]	34.7 [34.0]	28.0 [27.2]	28.1 [29.3]	31.8 [29.4]
EH42 EH43 EH44	West Street (co-located with EH29)	Yes	32.9 [40.5]	40.6 [41.4]	31.8 [30.9]	32.1 [33.5]	36.8 [34.1]

¹² Year of readings used for source apportionment.

Site ID	Site location	Within Hertford AQMA	Bias adjusted annual mean concentration ($\mu\text{g}/\text{m}^3$)				
			[Annual Mean NO ₂ Concentration] ($\mu\text{g}/\text{m}^3$)				
			<i>Figures in bold = level above the national objective of 40 $\mu\text{g}/\text{m}^3$</i>				
			2018	2019 ^[12]	2020	2021	2022
EH79 EH80 EH81	Gascoyne Way	Yes	31.8 [39.2]	32.0 [31.4]	25.6 [24.9]	26.1 [27.2]	28.9 [26.7]
EH30	Downey Cottage, Hertingfordbury Road	Yes	29.9 [36.8]	37.3 [36.5]	31.3 [30.3]	30.0 [31.3]	33.3 [30.8]

5.2 Analysis of the *hourly* mean average NO₂ concentration in the Hertford AQMA

Hertford is the only AQMA which currently has a continuous air quality monitoring station. The monitor is located on Gascoyne Way, within the Hertford AQMA, and monitors NO₂ and PM_{2.5} via a chemiluminescent and BAM analyser. This can be used to assess performance against the annual mean average objective of 200 $\mu\text{g}/\text{m}^3$.

Details of the continuous air quality monitor are provided in **Table 3**. The location of the monitoring site within the AQMA is shown in **Figure 3**.

Table 3 – Automatic monitor (Hertford)

Site ID	Site Location	Site Type	OS Grid Ref (E, N)	In AQMA	Pollutants Monitored	Inlet Height (m)
EH79	Gascoyne Way	Roadside	532464, 212338	Yes	NO ₂ and PM _{2.5}	1.5

The monitoring results for the annual mean NO₂ concentration are presented in **Table 4**. It can be seen that there have been no recorded exceedances of

60µg/m³, we can therefore deduce that the hourly 200µg/m³ level is likely not to have been exceeded in the last five years.

Table 4 – Automatic monitor EH79: NO₂ annual mean concentrations

Site ID	NO ₂ Annual Mean Concentration (µg/m ³)				
	2018	2019	2020	2021	2022
EH79	32.2	33.0	20.0	26.0	28.9

Table 5 confirms that the 200µg/m³ NO₂ exposure to air pollution objective has not been breached during any single hourly reading.

Table 5 – Automatic monitor EH79: Number of NO₂ hourly means exceedances

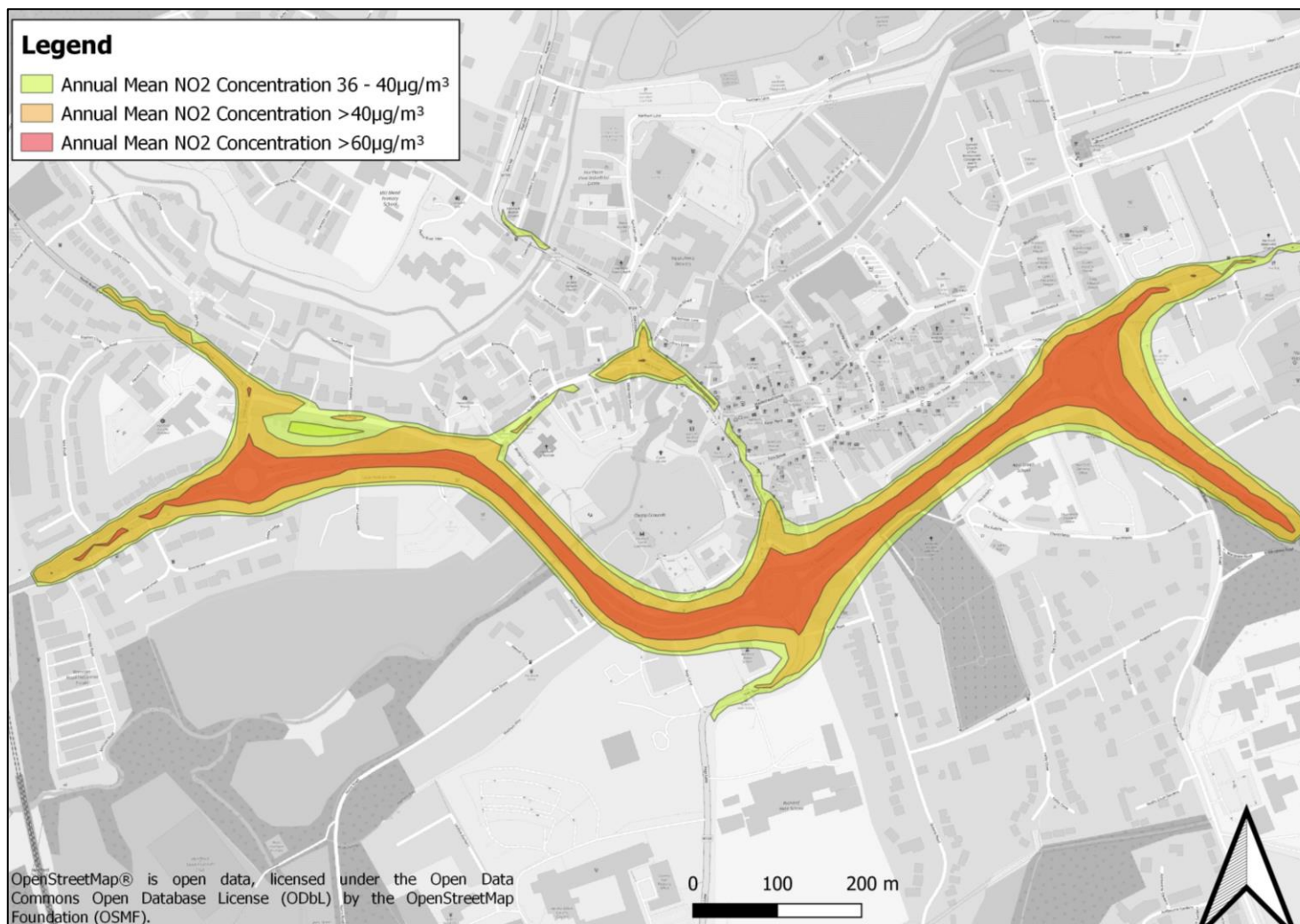
Site ID	Hourly Means in Excess of the 1-hour Objective (200 µg/m ³)				
	2018	2019	2020	2021	2022
EH79	0	0	0	0	0

5.3 Heat map showing NO₂ concentrations in the Hertford AQMA

The 'heat map' in **Figure 4** shows the *modelled* air pollution levels in the Hertford AQMA based on the readings from the various monitoring stations. The map uses DEFRA's standard scale, represented as yellow, orange and red, to indicate the severity of the NO₂ levels in each location.

The map illustrates that annual mean NO₂ concentrations are highest in the centre of the main roads, notably Gascoyne Way and London Road. The levels of pollution fall as one moves away from each road. This illustrates that traffic is the primary cause of air pollution in the AQMA.

Figure 4 - Hertford AQMA modelled pollutant concentrations (based on data from 2019)



6 Exposure to Air Pollution in the Sawbridgeworth AQMA

This chapter of the report provides details of exposure to air pollution in the Sawbridgeworth Air Quality Management Area (AQMA).

Figure 5 shows the location of the council's air quality monitoring stations in the Sawbridgeworth AQMA which is centred on the London Road/Cambridge Road corridor through the town.

Figure 5 - Sawbridgeworth AQMA and air quality monitoring locations



6.1 Analysis of the *annual* mean average NO₂ concentration in the Sawbridgeworth AQMA

From the data in **Table 6**, we can see that one of the monitoring locations is below the annual mean air quality objective (AQO) for NO₂ of 40µg/m³, and one exceeds it based on the bias adjusted concentration.

As discussed earlier in this report, to revoke an AQMA, the annual mean air quality objective for NO₂ must be at least 10% lower than the exceedance value of 40µg/m³ or, put another way, the readings must not be above 36µg/m³, for at least three years. Notwithstanding the unrepresentative nature of the data collected during the COVID-19 pandemic (2020 and 2021), the threshold for revocation clearly has not yet been met.

Table 6 gives annual mean average levels as the 'raw data' and as 'bias adjusted' figures. The latter figures are the raw numbers with a DEFRA formula applied to take account of the precise location of the monitoring in relation to residents and thus purport to give a better measure of how the residents in the area would be likely to experience the pollution. Both figures have been included for completeness.

Table 6 – LAQM diffusion tube monitoring – Sawbridgeworth AQMA

Site ID	Site location	Within Sawbridgeworth AQMA	Bias adjusted annual mean concentration (µg/m ³)				
			[Annual Mean NO ₂ Concentration] (µg/m ³)				
			<i>Figures in bold = level above the national objective of 40 µg/m³</i>				
			2018	2019 ^[13]	2020	2021	2022
EH57	Bell Street at crossing	Yes	41.5 [51.0]	50.4 [49.5]	40.5 [39.3]	40.9 [42.6]	42.9 [39.8]
EH91	14 London Road	Yes	36.7 [43.3]	39.5 [38.7]	32.7 [31.7]	33.6 [33.6]	37.3 [34.5]

¹³ Year of readings used for source apportionment.

6.2 Analysis of the *hourly* mean average NO₂ concentration in the Sawbridgeworth AQMA

At present, we do not have data from a continuous air quality monitor in the Sawbridgeworth AQMA and so we use the guidance published by DEFRA to calculate whether the *hourly* mean average for NO₂ of 200µg/m³ objective has or is likely to be exceeded.

DEFRA's Local Air Quality Management Technical Guidance (TG22)^[14] states that the *hourly* mean average of NO₂ of 200µg/m³ objective is only likely to be exceeded where the *annual* mean average concentrations are 60µg/m³ or more. As the data in **Table 6** shows levels below 60µg/m³ we can deduce that the hourly 200µg/m³ level has not been exceeded in the last five years.

6.3 Heat map showing NO₂ concentrations in the Sawbridgeworth AQMA

The 'heat map' in **Figure 6** shows the *modelled* air pollution levels in the Sawbridgeworth AQMA based on the readings from the various monitoring stations. The map uses DEFRA's standard scale, represented as yellow, orange and red, to indicate the severity of the NO₂ levels in each location.

The map illustrates that annual mean NO₂ concentrations are highest at the junction of London Road and Bell Street and the dual roundabouts linking Cambridge Road, Station Road, London Road and West Road. The levels of pollution fall as one moves away from these two traffic junctions. This illustrates that traffic is the primary cause of air pollution in the AQMA.

¹⁴ <https://laqm.defra.gov.uk/wp-content/uploads/2022/08/LAQM-TG22-August-22-v1.0.pdf>

Figure 6 - Sawbridgeworth AQMA modelled pollutant concentrations (based on data from 2019)



7 Who is Exposed to Air Pollution in the AQMAs in East Hertfordshire?

Those living in an AQMA, as well as those walking, cycling or driving through one will be exposed to some extent to air pollution. That said, as discussed in the preceding chapters, it is only the annual mean NO₂ concentration of 40µg/m³ which is exceeded and thus only those living in the AQMA who will be impacted according to the DEFRA guidance. That is not to say that those walking, cycling or driving through an AQMA will not experience poor air quality, however, none are likely to walk, cycle or drive through for a continuous hour and even if they did, the 200µg/m³ hourly exposure level has not been exceeded in any of the three AQMAs.

7.1 Residents

To understand the extent of the population of East Hertfordshire who reside in an AQMA and are exposed to poor air quality, a review of the estimated population of each AQMA has been undertaken (see **Table 7**). This has been completed using the Office for National Statistics 'Lower Super Output Area' (LSOA) information^[15]. Information from the Indices of Multiple Deprivation (IMD)^[16] are also included.

The scores for the IMD are based on deciles of multiple factors of deprivation. The larger the score, the more deprived the area, on a scale of 1 to 10.

¹⁵ <https://www.data.gov.uk/dataset/3f6c84f1-9da1-4ee0-82a7-50086a775e22/lower-layer-super-output-areas-2021-boundaries-ew-bgc>

¹⁶ https://data.england.nhs.uk/ncdr/data_element/indices-of-multiple-deprivation-imd-decile/

Table 7 - Population Exposure within East Herts AQMAs

AQMA	Estimated population in AQMA	Average IMD score (1 being the most disadvantaged, 10 being the least)	Median age
Bishop's Stortford	71	9	35
Hertford	2,128	9	41
Sawbridgeworth	428	9	47

As shown, the Hertford AQMA has the greatest population.

All AQMAs are in the 9th decile (out of 10), indicating that none of the three AQMAs are in areas of deprivation. This makes the AQMAs in East Hertfordshire different from some other ones, particularly those in more urban and metropolitan areas, where living in an area of poor air quality is correlated more closely with deprivation.

The median ages for the district of East Hertfordshire and England are 43 years and 42 years respectively. The 71 people estimated to be living in the Bishop's Stortford AQMA have a younger average age than the East Hertfordshire population, with those living in the Hertford AQMA being slightly younger and Sawbridgeworth AQMA being older than the both the district-wide and national average ages. The younger average among the, albeit low, population in the Bishop's Stortford AQMAs suggests there may be young residents who are particularly susceptible to the adverse effects of air pollution. This further serves to emphasise the need for action.

7.2 Walkers and cyclists

For those who walk or cycle through an AQMA, when reading this AQAP, the measure likely to be of most interest is the *hourly* mean objective for Nitrogen Dioxide of no more than 200µg/m³. This is because this is the nationally set upper level of pollution for someone to experience continuously for a whole hour.

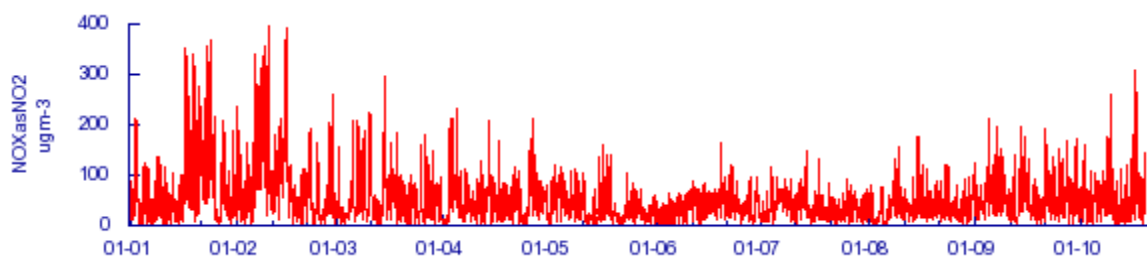
As air pollution in East Hertfordshire stems from traffic, it is to be expected that higher concentrations will be experienced by someone walking or cycling through an AQMA than someone living in one because they will be nearer to the source of the emissions, that is, the vehicles driving along the roads.

At the same time, it is important to note that the measure relates to an *hourly* mean average of $200\mu\text{g}/\text{m}^3$ rather than a very short exposure to this level although, of course, the council recognises that ideally no-one would be exposed to air pollution at all.

As discussed in earlier chapters, modelling in Bishop's Stortford and Sawbridgeworth and the continuous monitor in Hertford indicate no location within any of the AQMAs ever demonstrates a whole hour's worth of air pollution above $200\mu\text{g}/\text{m}^3$, although data from continuous air quality monitors will show the fluctuating level of NO_2 at the monitoring station.

At present there is only one continuous monitoring station in the district. This is located in the Hertford AQMA. The findings from this monitoring station for January to October 2023 are shown in **Figure 7** below. There are 'spikes' where for short bursts of time air pollution exceeds $200\mu\text{g}/\text{m}^3$. See section 9.1 for information about the relationship between NO_x and NO_2 .

Figure 7 - Hertford AQMA NO_x as NO_2 Levels for 2023



Those walking or cycling through the Hertford AQMA, or considering doing so, may wish to check the real time information which is available online via the council's air quality webpage: <https://www.eastherts.gov.uk/environmental-health/air-quality>

In 2024, continuous air quality monitoring stations will be added to each of the three AQMAs.

7.3 Drivers

As the heat maps included in earlier chapters have clearly shown, air pollution in East Herts' AQMAs is the result of traffic. While much of the national debate and discussion in this AQAP sees drivers of fossil-fuelled vehicles as the polluters, those same drivers, and indeed drivers of electric vehicles, will experience a degree of air pollution *within* their vehicles (however powered) as they drive through an AQMA.

There are no national objectives relating to pollution levels *within* vehicles but just as for those walking or cycling in an AQMA, the real time data, as exemplified in **Figure 7** above, is likely to be of interest to drivers.

8 Developing an Air Quality Action Plan for East Hertfordshire

The preceding chapters have explained that:

- air pollution is detrimental to health
- nationally set maximum levels for *annual* average air pollution have been exceeded in three AQMAs
- traffic is the primary cause of air pollution in the three AQMAs
- while those living within the district's AQMAs are the most exposed to pollution, those walking, cycling or driving through the AQMAs will also experience poor air quality.

This chapter will now cover the council's examination of the work to date, policies, evidence and best practice which can be drawn upon to effectively tackle the district's air pollution.

8.1 Track record to date

This action plan will need to build on our track record to date. For example, we have:

- trialled an e-car club, using Department for Environment, Food and Rural Affairs (DEFRA) funding, which served council staff in the day and the public outside of office hours with dedicated charges in Hertford and Bishop's Stortford. This pilot has led to the establishment of a staff e-car club and private car rental companies in the area offering low emission vehicles for hire by the public
- published a sustainability Supplementary Planning Document (SPD) with a specific air quality chapter applying strict air quality measures to all developments
- introduced the strictest emissions standards in Hertfordshire for the taxi vehicles we licence
- installed over 60 e-vehicle charging points to promote the switch to e-vehicles
- replaced our fleet of diesel vans with e-cars
- installed anti-idling signage in our own car parks and beyond.

In addition, together with our partners, principally Hertfordshire County Council, we have:

- introduced smart traffic light management at Hockerill junction in the Bishop's Stortford Air Quality Management Area (AQMA) to promote traffic flow and minimise idling
- improved the lighting and visual appeal of pedestrian subways to counteract feelings of a lack of safety as a barrier to active travel
- annually promoted Clean Air Day
- supported the introduction of demand responsive bus services in the northern half of the district.

We have continued to facilitate behaviour change by:

- introducing and promoting an air alert notification scheme
- working with schools and businesses, using DEFRA funding, on active travel alternatives to daily commutes.

The evidence discussed in earlier chapters demonstrates that despite all the efforts and interventions described above there is still more to do. It is thus incumbent on East Herts Council to work with its partners to marshal all the available information, best practice or policy levers to tackle the unacceptable levels of air pollution.

8.2 Planning and Policy Context

Clean Air Strategy 2019

The Government's Clean Air Strategy^[17] sets out the case for action at a national level, identifying a number of sources of air pollution within the UK including road transportation (relevant in terms of the AQMAs currently present within East Hertfordshire). It also sets out the actions required to reduce the impact upon air quality from these sources. It has been developed in conjunction with three other UK Government Strategies; the Industrial Strategy, the Clean Growth Strategy, and the 25 Year Environment Plan.

¹⁷ <https://www.gov.uk/government/publications/clean-air-strategy-2019>

Air Quality Strategy 2023

In April 2023, the government's new Air Quality Strategy was published^[18], which supersedes the Air Quality Strategy (2008).

The strategy plans to set out a framework to enable local authorities to deliver for their communities and contribute to the governments long term air quality goals, this includes the new targets for PM_{2.5}.

The Air Quality Strategy is designed for local authorities in England with the focus on three main pollutants, PM_{2.5}, NO_x and NH₃.

The Air Quality Strategy seeks to implement the focus on air quality being a public health issue, with Directors of Public Health being involved and collaboration with plans and strategies with other departments and strategies such as climate change.

UK Plan for Tackling Roadside Nitrogen Dioxide Concentrations

Published in July 2017, the UK Plan for Tackling Roadside Nitrogen Dioxide Concentrations (Detailed Plan)^[19] is the UK government's plan for bringing concentrations of NO₂ within statutory limits within the shortest possible time. It identifies that the most immediate air quality challenge within the UK is tackling the issue of NO₂ concentrations close to roads, especially within towns and cities.

The plan identifies the local authorities that were required to complete feasibility studies to define NO₂ concentrations on road links which were identified by the national Pollutant Climate Mapping (PCM) model as exceeding the NO₂ annual mean AQS objective. East Herts Council was not one of the authorities identified. That said, the UK Plan details a range of possible solutions to reduce NO_x emissions from vehicles and therefore lower NO₂ concentrations which the council has been mindful of when devising this plan. The actions detailed within the UK Plan include:

- implementation of Clean Air Zones (CAZs)

¹⁸ <https://www.gov.uk/government/publications/the-air-quality-strategy-for-england/air-quality-strategy-framework-for-local-authority-delivery>

¹⁹ <https://www.gov.uk/government/publications/air-quality-plan-for-nitrogen-dioxide-no2-in-uk-2017>

- new real world driving emissions requirements for light passenger and commercial vehicles
- additional funding to accelerate the uptake of low emissions buses and also for the retrofitting of older buses
- additional funding to accelerate the uptake of hydrogen vehicles and associated infrastructure
- new mandatory emissions standards for non-road mobile machinery
- local cycling and walking investment plans.

East Herts District Plan (the Local Plan)

The council adopted its Local Plan, known locally as the District Plan, on the 23 October 2018^[20]. The District Plan sets out the planning framework for the district for the period of 2011-2033 and prioritises the delivery of sustainable development.

Specific Air Quality policies are included within the plan, notably:

Policy EQ4 Air Quality

I. The effect of development upon air quality is a material consideration. All applications should take account of the Council's Air Quality Planning Guidance Document, which details when an air quality assessment is required.

II. All development should take account of the Council's latest Air Quality Action Plan, local Air Quality Strategies, Local Transport Plans, as well as national air quality guidance.

III. All developments should include measures to minimise air quality impact at the design stage and should incorporate best practice in the design, construction and operation of all developments.

IV. Where development (on its own or cumulatively) will have a negative impact on local air quality during either construction or operation, mitigation measures will be sought that will remove overriding impacts, such as an air quality neutral or negative development. Evidence of mitigation measures will be required upfront.

²⁰ https://cdn-eastherts.onwebcurl.com/s3fs-public/documents/District_Plan_Publish_web_view.pdf

V. Where on-site mitigation is not sufficient, appropriate off-site mitigation measures may be required. Where adequate mitigation cannot be provided, development will not normally be permitted.

VI. Developments must not:

- *lead to a breach or worsening of a breach of UK or EU limit values;*
- *lead to a breach or worsening of a breach of an Air Quality objective or cause the declaration of an Air Quality Management Area or;*
- *prejudice the implementation of any Air Quality Action Plan or local air quality strategy*

East Herts Sustainability Planning Guidance

East Herts Council have developed a Sustainability Supplementary Planning Document (SPD)^[21]. This planning guidance document has been prepared to support East Herts Council's Air Quality Development Management Policy within its District Plan. The aim is to facilitate sustainable development by helping to achieve the best possible public health protection outcomes, in relation to air quality.

The objectives defined to help achieve this aim are to:

- identify the district-specific air pollution issues
- identify the tools to control air pollution that are available to this local authority under the planning regime
- provide clarity and consistency to developers, planners and local communities by confirming:
 - how the council will assess planning applications in relation to air quality
 - the mitigation and monitoring of air quality impacts via planning conditions and the use of tools such as Section 106 agreements
 - the circumstances where an air quality assessment will be required for a proposed development
 - the requirements of an air quality assessment

²¹ <https://cdn-eastherts.onwebcurl.com/s3fs-public/2021-03/Sustainability%20SPD.pdf>

- contribute to the improvement of air quality in the district, in particular in Air Quality Management Areas
- be compatible with existing East Herts Council policies
- complement and add important local context to the National Planning Practice Guidance
- direct developers to detailed guidelines for undertaking an emissions assessment in line with that from the Low Emission Partnership.
- use the Damage Cost Approach for applications
- promote Air Quality Neutral Assessments.

East Herts Climate Change Strategy

In 2022, following East Herts Council's climate change declaration in July 2019, the council introduced its first Climate Change Strategy. The strategy lays out how the council, residents, business and other partners can all pull together and help each other make significant and long-lasting improvements to the sustainability of our precious environment.

Another key aspect of the strategy was the inclusion of the council's route map to net-zero carbon by 2030.

Since this time, the council has accelerated its efforts to tackle climate change by:

- declaring a Climate Emergency in July 2023
- bringing forward to 2027 the deadline for minimising its own carbon footprint and putting in place robust offsetting plans and
- devoting over £500,000 from its share of the UK Shared Prosperity Fund to environmental sustainability measures.

The Climate Change Strategy and this air quality action plan share a number of priorities, goal and actions, for example, the promotion of e-vehicles, anti-idling measures and the focus of enabling people to making lasting behavioural changes.

Hertfordshire's Local Transport Plan 2018-2031

The Local Transport Plan 2018 – 2031, developed by Hertfordshire County Council, sets out how transport can help deliver a positive future vision for

Hertfordshire by having a major input into wider policies such as economic growth, meeting housing needs, improving public health and reducing environmental damage whilst also providing for safe and efficient travel^[22]. As part of this there are two specific policies relating to Air Quality as set out below:

Policy 19: Emissions reduction

The county council will reduce levels of harmful emissions by:

- a) Promoting a change in people's travel behaviour to encourage a modal shift in journeys from cars to walking, cycling and passenger transport.*
- b) Addressing any barriers to and supporting the uptake of ULEVs in the county, particularly where this can positively affect areas with identified poor air quality.*
- c) Reducing emissions from its operations.*

Policy 20: Air Quality

The county council will seek to reduce the impact of poor Air Quality on human health, by:

- a) Investigating the use of Clean Air Zones.*
- b) Working with district/borough councils to monitor and assess air pollution levels and working in partnership with them to deliver any declared AQMA joint action plans.*
- c) Implementing, monitoring and reviewing the county council's Air Quality Strategic Plan.*

Local cycling and walking infrastructure plans

Local Cycling and Walking Infrastructure Plans (LCWIPs) are a 10-year strategic approach to cycling and walking improvements. They form part of the Government's strategy to increase the number of trips made on foot or by cycle. The LCWIP for East Herts Council was still in development at the time of devising the Air Quality Action Plan.

²² <https://www.hertfordshire.gov.uk/media-library/documents/about-the-council/consultations/lt4-local-transport-plan-4-complete.pdf>

9 Source Apportionment

9.1 How was the source apportionment work undertaken?

The AQAP measures presented in this report are intended to be targeted towards the predominant sources of emissions within East Hertfordshire. To assist in this, a source apportionment exercise was carried out for East Herts Council by Bureau Veritas based on a 2019 baseline year. Importantly, this is a pre-COVID-19 dataset which the council believes best reflects the local situation without the unprecedented events of the pandemic, notably the lockdowns, which are likely to have skewed more recent readings. Full details are provided within the technical report found on our website^[23] including a breakdown of polluting vehicles and pollution from background sources.

The source apportionment exercise used 12-months traffic data from traffic flow cameras around the AQMAs to match against vehicle classifications held by the DVLA. The calculations were undertaken using an air dispersion model to assess the overall emissions profiles of vehicles moving through each AQMA. 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 levels of NO₂.

“f-NO₂” factors are developed from real world testing of vehicles, thereby measuring what vehicles *actually* emit rather than emissions measured in a laboratory. These values are used in dispersion modelling to make it more accurate.

9.2 Bishop’s Stortford AQMA

The NO₂ source apportionment exercise has been completed at the maximum receptor reading location in line with the guidance contained within the Local Air Quality Management Technical Guidance (TG22). A summary of this information can be found in **Appendix B**.

Using the calculations in **Table 24** (in **Appendix B**), the NO₂ apportionment for vehicles is set out below in **Table 8**. These apportionments are based on the total

²³ <https://www.eastherts.gov.uk/environmental-health/air-quality>

actual vehicle movement through the AQMA and represent the *total* impact of each class of vehicle, not each *individual* vehicle. Therefore, **Table 8** is not showing that 'petrol LGVs' are less polluting than 'plug-in hybrid petrol cars', it is instead saying that during the monitoring period the impact of petrol LGV vehicles on the NO₂ level was less than the plug-in hybrid petrol cars, which is most likely a result of fewer, if any, petrol LGVs passing through the AQMA during this time.

Table 8 - NO₂ Source apportionment from vehicles at max receptor in Bishop's Stortford AQMA

Vehicle	NO ₂ Contribution (µg/m ³)
Diesel Cars	24.61
Diesel light goods vehicles (LGV)	8.40
Rigid heavy goods vehicles (HGV)	4.26
Petrol Cars	3.92
Articulated HGV	1.66
Buses	1.56
Full Hybrid Diesel Cars	0.14
Motorcycle	0.03
Plug-in Hybrid Petrol Cars	0.01
Petrol LGV	0.00
Full Hybrid Petrol Cars	0.00
Electric Cars	0.00

The source apportionment exercise demonstrates a ranking of contributing vehicle classes with diesel cars being the main contributors to total road NO₂ concentrations across the Bishop's Stortford AQMA, followed by diesel LGVs, rigid HGVs and petrol cars.

Overall, the volume of traffic, “street canyon” effects and congestion in the AQMA are considered to be the key contributors to elevated levels of NO₂ *annual* mean concentrations within the AQMA. The location within the AQMA where particularly elevated levels of NO₂ are observed is the main junction of A1060 London Road, A1250 Hockerill Road, B1383 Stansted Road and A1250 Dunmow Road.

This is explored in detail in the Bureau Veritas source apportionment report found on our website^[24]. A summary is shown below in **Figure 8**.

Figure 8 - Source apportionment in Bishop’s Stortford AQMA, show as an average percentage of NO₂



Notes on chart

- **‘All other transport’** includes emissions from Motorcycles, Petrol LGVs, Full Hybrid Petrol Cars, Plug-in Hybrid Petrol Cars, Full Hybrid Diesel Cars, EV Cars, Aircraft and Rail.

²⁴ <https://www.eastherts.gov.uk/environmental-health/air-quality>

- **'Transport sources outside the AQMA'** relates to pollution migrating into the AQMA from adjacent roads.

9.3 Hertford AQMA

The NO₂ source apportionment exercise has been completed at the maximum receptor reading location in line with the guidance contained within Local Air Quality Management Technical Guidance (TG22). A summary of this information can be found in **Appendix B**.

Using the calculations in **Table 24** (in **Appendix B**), the NO₂ apportionment for vehicles is set out below in **Table 9**. These apportionments are based on the total *actual* vehicle movement through the AQMA and represent the *total* impact of each class of vehicle, not each *individual* vehicle. Therefore, **Table 9** is not showing that 'petrol LGVs' are less polluting than 'plug-in hybrid petrol cars', it is instead saying that during the monitoring period the impact of petrol LGVs on the NO₂ level was less than the plug-in hybrid petrol cars, which is most likely a result of fewer, if any, petrol LGVs passing through the AQMA during this time.

Table 9 - NO₂ Source Apportionment from Vehicles at Max Receptor in Hertford AQMA

Vehicle	NO ₂ Contribution (µg/m ³)
Diesel Cars	20.98
Rigid HGV	4.52
Diesel LGV	3.70
Petrol Cars	3.19
Articulated HGV	1.75
Buses	1.03
Full Hybrid Diesel Cars	0.11
Full Hybrid Petrol Cars	0.05
Motorcycle	0.02
Plug-in Hybrid Petrol Cars	0.01

Vehicle	NO ₂ Contribution (µg/m ³)
Petrol LGV	0.00
Electric Cars	0.00

The source apportionment exercise demonstrates a ranking of contributing vehicle classes with diesel cars being the main contributors to total road NO₂ concentrations across the Hertford AQMA, followed by diesel LGVs, rigid HGVs and petrol cars.

Overall, the volume of traffic and congestion on the main roads such as Gascoyne Way are considered to be the key contributors to elevated levels of NO₂ annual mean concentrations within the AQMA.

This is explored in detail in the Bureau Veritas source apportionment report found on our website^[25]. A summary is shown below in **Figure 9**.

²⁵ <https://www.eastherts.gov.uk/environmental-health/air-quality>

Figure 9 - Average NO₂ % Source Apportionment in Hertford AQMA



Notes on chart

- **'All other transport'** includes emissions from Motorcycles, Petrol LGVs, Full Hybrid Petrol Cars, Plug-in Hybrid Petrol Cars, Full Hybrid Diesel Cars, EV Cars, Aircraft and Rail.
- **'Transport sources outside the AQMA'** relates to pollution migrating into the AQMA from adjacent roads.

9.4 Sawbridgeworth AQMA

The NO₂ source apportionment exercise has been completed at the maximum receptor reading location in line with the guidance contained within Local Air Quality Management Technical Guidance (TG22). A summary of this information can be found in **Appendix B**.

Using the calculations in **Table 24** (in **Appendix B**), the NO₂ apportionment for vehicles is set out below in **Table 10**. These apportionments are based on the total *actual* vehicle movement through the AQMA and represent the *total* impact

of each class of vehicle, not each *individual* vehicle. Therefore, **Table 10** is not showing that 'petrol LGVs' produce the same level of pollution as 'plug-in hybrid petrol cars', it is instead saying that during the monitoring period the impact of petrol LGVs on the NO₂ level was the same as plug-in hybrid petrol cars.

Table 10 - NO₂ Source Apportionment from Vehicles at Max Receptor in Sawbridgeworth AQMA

Vehicle	NO ₂ Contribution (µg/m ³)
Diesel Cars	21.79
Diesel LGV	10.56
Buses	3.66
Rigid HGV	3.48
Petrol Cars	3.30
Articulated HGV	1.35
Full Hybrid Diesel Cars	0.12
Full Hybrid Petrol Cars	0.05
Motorcycle	0.04
Petrol LGV	0.01
Plug-in Hybrid Petrol Cars	0.01
Electric Cars	0.00

The source apportionment exercise demonstrates a ranking of contributing vehicle classes with diesel cars being the main contributors to total road NO₂ concentrations across the Sawbridgeworth AQMA, followed by diesel LGVs, buses, rigid HGVs and petrol cars.

Overall, this suggests the volume of traffic and congestion at the main junctions along London Road are the key contributors to elevated levels of NO₂ annual mean concentrations within the AQMA.

This is explored in detail in the Bureau Veritas source apportionment report found on our website^[26]. A summary is shown below in **Figure 10**.

Figure 10 - Average NO₂ % Source Apportionment in Sawbridgeworth AQMA



Notes on chart

- **'All other transport'** includes emissions from Motorcycles, Petrol LGVs, Full Hybrid Petrol Cars, Plug-in Hybrid Petrol Cars, Full Hybrid Diesel Cars, EV Cars, Aircraft and Rail
- **'Transport sources outside the AQMA'** relates to pollution migrating into the AQMA from adjacent roads.

²⁶ <https://www.eastherts.gov.uk/environmental-health/air-quality>

10 Required Reduction in Emissions

10.1 Emissions reduction calculations

Any area will experience air pollution from a variety of local and more remote, background sources. For each AQMA in East Hertfordshire, the evidence reported in this action plan, shows that it is traffic emissions *within* the AQMAs that are the primary source of air pollution.

The council and partners need to target interventions that are likely to have the largest impact on reducing air pollution within each AQMA and so the primary source of pollution, that is traffic emissions, needs to be addressed. These will have some, though limited, impact on reducing the background sources of pollution *outside* of the AQMA, thus, interventions within the AQMA will need to have a proportionally greater impact on reducing the emissions arising *within* the AQMA as, unfortunately, the AQMA is still likely to suffer from pollution sources beyond its boundaries.

Based on their analysis of the 2019 emissions data in the three AQMAs, Bureau Veritas have calculated the required reduction in NO_x emissions, that is, various nitrogen oxides, *from traffic within* the AQMAs on the basis of pollution outside of the AQMAs remaining at consistent levels. This analysis also takes account of the way in which NO_x breaks down into the polluting NO₂ and so gives the NO_x percentage reduction needed for NO₂ concentrations to fall below the AQO of 40µg/m³. The findings are as follows:

- **45.6%** reduction in road NO_x is required to meet the AQO for annual mean NO₂ at the worst-case receptor in the Bishop's Stortford AQMA
- **33.7%** reduction in road NO_x is required to meet the AQO for annual mean NO₂ at the worst-case receptor in the Hertford AQMA
- **40.6%** reduction in road NO_x is required to meet the AQO for annual mean NO₂ at the worst-case receptor in the Sawbridgeworth AQMA.

Table 25, found in **Appendix C**, contains a summary of the values used to calculate the required reduction in emissions listed above, with full details of the required reductions and methodology contained within the Technical Report found on our website^[27].

²⁷ <https://www.eastherts.gov.uk/environmental-health/air-quality>

It is worth noting that the council and its partners will aim to take as broad a range of actions as possible to reduce air pollution in the AQMAs and so the full percentage reduction in road NO_x is unlikely to be necessary because our proposed interventions should reduce pollution in other ways too – see **Chapter 13** for more details of this.

11 Consultation

11.1 Consultation and Stakeholder Engagement

In developing our updated AQAP, we have worked with other local authorities, expert agencies, businesses and the local community to identify actions likely to have a positive impact. Schedule 11 of the Environment Act 1995 requires local authorities to consult the bodies listed in **Table 11**. To help encourage engagement at a local level, we have undertaken the following stakeholder engagement:

- publishing the consultation on our website and social media channels
- advising local climate groups of the consultation.

Table 11– Consultation Undertaken

Consultee	Yes/No
The Secretary of State	Yes
The Environment Agency	Yes
DEFRA / LAQM	Yes
Julie Marson MP for Hertford and Stortford	Yes
Sir Oliver Heald MP for North East Hertfordshire	Yes
Hertfordshire County Council (Public Health / Highways)	Yes
All neighbouring local authorities	Yes
Hertfordshire police	Yes
UK Health Security Agency	Yes
Hertfordshire Local Enterprise Partnership	Yes

Consultee	Yes/No
Federation of Small Businesses	Yes
Licensed hackney carriage and private hire operators	Yes
Commercial bus operators	Yes

11.2 Steering Group

A steering group was established as part of the AQAP development process to drive forward the development of the new AQAP. The core aim of the steering group has been to identify measures for inclusion within the AQAP that would be effective both in terms of reducing NO₂ concentrations and feasible in terms of implementation and delivery.

The steering group is composed mainly of officers from East Herts Council, from those services with an interest or potential impact on air quality and who may have an influence on the action measures being considered.

The officers have provided and continue to provide guidance in their respective areas of expertise to ensure selection and continual evaluation of the most appropriate measures.

A first steering group meeting took place in February 2023. The steering group included officers from the local authority from: Environmental Health, Sustainability and Climate Change, Planning, Licensing, Parking, Economic Development, Transport and Highways.

Having members within the steering group from different areas and departments allows a collaborative approach to improving air quality and provides a wider scope of measures that can be implemented.

The steering groups set out an ambitious approach to tackling air quality within the wider district. While the technical aspects of this AQAP have focussed on concentrations within the declared AQMA, the wider ambitions are included as part of the measures for reducing pollutant concentrations across the whole district.

It is the aim for this steering group to continue to communicate at regular intervals following the adoption of the AQAP. This is essential to provide progress reports on individual actions in relation to the AQAP measures, discuss any key lessons learnt from the continual implementation of the measures and to continue to discuss any new ideas in terms of future measures and actions within the AQMAs.

12 East Herts Air Quality Priorities

In devising our air quality priorities, we have drawn upon:

- the empirical air pollution findings from our AQMAs
- the detailed source apportionment modelling
- our review of the wider public health, planning and climate change contexts and
- the professional views and experience of our steering group.

Our four priorities, presented below, focus on the key issues we need to tackle to improve air quality across our AQMAs and, indeed, beyond.

Priority 1: Reduce the impact of traffic levels and congestion on air quality

The main source of air pollution leading to the declaration of the AQMAs is road transport emissions. Therefore, reducing transport emissions is the key priority. Our approach focuses on factors where East Herts Council has direct control (for example, planning and procurement of outsourced functions) and measures that can be implemented via a partnership with Hertfordshire County Council (HCC) or others, with the necessary monitoring arrangements put in place, for example sustainable travel plans for businesses and schools that need to be checked to see if they are working.

As the roads contributing to pollutant concentrations which result in exceedance of the *annual* average NO₂ objective are not managed by National Highways, this Relevant Public Authority has not been engaged with for the purpose of preparing this AQAP.

Across the council and its partners, there are already multiple efforts in place to improve uptake in cleaner vehicles. This includes provision of additional electrical vehicle charging, incentives for taxis to use electric or Euro VI vehicles and improvements in technology in buses used within the district.

Priority 2: Mitigate the impact of future growth on air quality

Construction and demolition activities can have a significant impact on local air quality. These impacts can be minimised by using the planning system to ensure best practice techniques are employed on all sites.

New or refurbished buildings have the potential to add to emissions from domestic heating and cooling. These impacts can be addressed directly through emissions limits or indirectly by reducing the energy demand in new buildings.

New residents will need to travel for work and leisure. The impact of this can be addressed by measures to encourage walking and cycling or by working with Hertfordshire County Council (HCC) to further improve public transport provision.

An increased provision of services to meet extra demand such as refuse collections will create additional emissions. Negative impacts can be reduced by designing new developments with due consideration to operational efficiency and ensuring only the cleanest vehicles are used.

New roads have the potential to increase pollutant concentrations unless they are well designed and well placed. East Herts Council will work closely with HCC to ensure that necessary infrastructure improvements minimise any detrimental effects on air quality.

East Herts Council's District Plan and its associated policies set out the considerations that will be applied by the council to all development proposals. The council will work with developers and partner organisations to ensure the delivery of infrastructure, services and community facilities necessary to develop and maintain sustainable communities. This will not only apply to air quality but all relevant environmental aspects. Further Section 106 agreements will be sought to secure funding for future mitigation measures as appropriate where development will increase pollutant concentrations.

The review of the council's District Plan, which will take place within the lifetime of this AQAP, will provide a crucial means for continued and expanded efforts to mitigate the impact of development on air quality.

Existing strategies and policies adopted by East Herts Council and HCC are key mechanisms for reducing emissions across the district. Transport is the main source of NO_x emissions, and therefore NO₂ concentrations, within the AQMAs. For effective reductions in NO_x emissions, in addition to the implementation of the measures outlined within the AQAP, future revisions of the council's and Hertfordshire County Council's Transport Plans, Freight Strategies, Climate Change Strategies, Cycle Strategies and the like should all be completed with potential air quality impacts taken into account.

Priority 3: Support residents to make active travel choices

One of the most effective ways to achieve a reduction in vehicle numbers is to change the attitudes and behaviour of the population towards travel. East Herts Council and partners will encourage and facilitate these changes through implementing a suite of interventions that have been informed by insights into the key factors affecting travel behaviour. Measures will include education and awareness raising alongside schemes which incentivise change.

Reducing the need to travel by car promotes neighbourhoods which are not so dominated by cars, which in turn provide good quality outdoor spaces, encourage residents to be more active and enable benefits for mental health and wellbeing. Indeed, measures to encourage active travel such as walking and cycling can support residents to achieve and maintain an active lifestyle, which has additional health benefits beyond those achieved through improving air quality.

Ensuring that outdoor spaces are protected from pollution sources not only makes them more pleasant to use but reduces residents' exposure.

Improving air quality to protect public health requires a wide-reaching perspective which is not specific to the AQMAs but instead aims to have a broader impact across the district.

Priority 4: Reduce East Herts Council's own impact on air quality

We have already replaced all our diesel vans with electric vehicles. We will continue to extend the use of these vehicles beyond the services making most use of them, notably our environmental services team, by promoting the vehicles for use as a staff car club to reduce officers using their own fossil-fuelled vehicles when on council business.

We will also continue to take steps towards greening the fleets of our contractors, notably our waste management and ground maintenance contractors. Procurement processes are key to this next step and we know that seeking higher environmental standards from council suppliers and contractors would accelerate moves to replacement of fossil-fuelled vehicles across the whole district.

13 Air Quality Action Plan Measures

Table 12, Table 13, Table 14 and **Table 15** list the measures East Herts Council and its partners will take as part of this AQAP. They contain:

- a list of the actions that form part of the plan
- expected benefit in terms of pollutant emission and/or concentration reductions – listed in more detail in **Table 16** and **Table 17**
- the estimated cost of implementing each action
- the responsible individual, team and/or organisation who will lead on delivery of the action.

Future ASRs will provide regular annual updates on implementation of these measures.

Air Quality Action Plan Measures

Table 12 - Priority 1: Reduce the impact of traffic levels and congestion on air quality

No.	Action	Benefits	Costs Low < £10k Medium £10 to £50k High > £50k	Responsible Agency
1.1	Continued expansion of EV infrastructure <ul style="list-style-type: none"> Expanding the current electric charging points for electric vehicles on council owned land. Explore possibility of on street lamppost chargers on residential streets. Continued efforts to provide information and support to enable residents to make informed choices as to when and if to switch to an e-vehicle. 	<ul style="list-style-type: none"> Increased provision of charging points encouraging EV uptake. Leads to direct reduction in NO₂ emissions. 	Medium – based on commercial contract	East Herts Council & Hertfordshire County Council

No.	Action	Benefits	Costs Low < £10k Medium £10 to £50k High > £50k	Responsible Agency
1.2	Explore emissions-based parking charges <ul style="list-style-type: none"> • In council owned car parks. • For council issued parking permits. 	<ul style="list-style-type: none"> • Further incentives to encourage EV uptake. Leads to direct reduction in NO₂ emissions. 	Medium	East Herts Council
1.3	Explore Last Mile Delivery possibilities within the district <ul style="list-style-type: none"> • By replacing diesel delivery vehicles with ultra-low emission electric vehicles or zero-emission bicycles/e-cargo bikes (operating from depots). • Through the introduction of pick-up/drop-off points, meaning companies can distribute a large number of parcels to fewer locations. 	<ul style="list-style-type: none"> • Reduction in delivery vehicle emissions and numbers also reducing congestion. 	High	East Herts Council & Hertfordshire County Council

No.	Action	Benefits	Costs Low < £10k Medium £10 to £50k High > £50k	Responsible Agency
1.4	Installation of additional anti-idling signage <ul style="list-style-type: none"> Previous campaigns saw anti idling signage and messaging which was promoted in local businesses and council car parks. We plan to roll out the message wider and to create more permanent signs around schools and other public spaces. 	<ul style="list-style-type: none"> Less idling increased awareness. Leads to direct reduction in NO₂ emissions. 	Low	East Herts Council & Hertfordshire County Council
1.5	Continued promotion of our four key air quality campaigns <ul style="list-style-type: none"> Air Quality Alert System – a free to use, health based digital notification system which notifies users of days when air quality is poor in their area to help them make more informed choices about their activities that day. 	<ul style="list-style-type: none"> Improved health outcomes for vulnerable residents. Increased awareness of air pollution. Increased uptake of electric vehicles. Reduction in lone journeys and vehicles. 	Medium	East Herts Council & Hertfordshire County Council

No.	Action	Benefits	Costs Low < £10k Medium £10 to £50k High > £50k	Responsible Agency
	<ul style="list-style-type: none"> • Electric vehicle uptake – continued promotion to increase e-vehicle uptake. • Herts liftshare scheme – a free to use liftshare scheme matching users and locations to reduce lone journeys. • Clean Air Day – national air quality campaign to highlight the effects of air pollution and positive ways in which we can all make a difference. • Install at least one real-time air quality sensor in the Bishop’s Stortford and Sawbridgeworth AQMAs and another on in the Hertford AQMAs • Explore ways to make the real-time air quality data more accessible and visible • Work with residents and community groups on priorities for air quality campaigns and 	<ul style="list-style-type: none"> • All lead to direct reduction in NO₂ emissions. 		

No.	Action	Benefits	Costs Low < £10k Medium £10 to £50k High > £50k	Responsible Agency
	seek external funding for this wherever possible.			
1.6	Review the effectiveness of travel plans for schools and businesses <ul style="list-style-type: none"> Review the travel plans produced for local schools and businesses to establish their effectiveness on reducing pollution in the AQMA. 	<ul style="list-style-type: none"> Understand the effectiveness of travel plans. Work to improve the implementation and effectiveness of travel plans. 	Low	East Herts Council & Hertfordshire County Council

No.	Action	Benefits	Costs Low < £10k Medium £10 to £50k High > £50k	Responsible Agency
1.7	<p>Investigate the possible pros and cons of new options being adopted by other local authorities, such as road pricing and ultra-low emission zones (ULEZ) in the AQMAs</p> <ul style="list-style-type: none"> Understand the relevance, benefits and costs of road pricing / ULEZ within the context of East Herts' AQMAs. Involve residents, community groups and statutory stakeholders in better understanding the possible pros and cons of new approaches such as road pricing / ULEZ as part of the council's overall aim to engage everyone in the shared endeavour to reduce air pollution. 	<ul style="list-style-type: none"> Reduce traffic in congested areas. 	High – if road pricing or ULEZs introduced	East Herts Council & Hertfordshire County Council

No.	Action	Benefits	Costs Low < £10k Medium £10 to £50k High > £50k	Responsible Agency
1.8	<p>Hertfordshire County Council, East Herts Council and other stakeholders to maintain dialogue about any emerging operational and/or technical means of minimising congestion.</p> <ul style="list-style-type: none"> • Wherever possible, minimise congestion due to planned roadworks. • Encourage vehicular journeys which cannot reasonably be replaced by active travel alternatives to avoid the AQMAs. • Explore the co-benefits to air quality of 20mph zones and other safe system approaches to road safety. 	<ul style="list-style-type: none"> • Reduce traffic in congested areas. 	Low	East Herts Council & Hertfordshire County Council

No.	Action	Benefits	Costs Low < £10k Medium £10 to £50k High > £50k	Responsible Agency
1.9	Monitor and act upon emerging guidance on the new national PM_{2.5} objectives. <ul style="list-style-type: none"> • Use and report on data from the existing and new continuous air quality monitors in each AQMA. • With partners, identify potential actions required to address any PM_{2.5} levels in excess of national objectives. 	<ul style="list-style-type: none"> • Reduce air pollution due to PM_{2.5}. 	Low	East Herts Council & Hertfordshire County Council

Table 13 - Priority 2: Mitigate the impact of future growth on air quality

No.	Action	Benefits	Costs Low < £10k Medium £10 to £50k High > £50k	Responsible Agency
2.1	Hertfordshire Essex Rapid Transit (HERT)/ The A414 Corridor Strategy <ul style="list-style-type: none"> The HERT will deliver a step-change in the passenger transport network through an accessible, reliable and affordable east-west transit system which connects people easily to where they live, work and visit which could reduce private vehicle use in, most notably, the Hertford AQMA. 	<ul style="list-style-type: none"> Increased provision of public transport, reduction in overall vehicle numbers. Leads to direct reduction in NO₂ emissions. 	High	Hertfordshire County Council
2.2	Continued adherence to our sustainability SPD and air quality neutral policies <ul style="list-style-type: none"> Using the upcoming district plan review to strengthen the planning policy in relation to air quality. 	<ul style="list-style-type: none"> Reduction in building emissions and construction emissions. 	Low	East Herts Council

No.	Action	Benefits	Costs Low < £10k Medium £10 to £50k High > £50k	Responsible Agency
2.3	Create a sustainable design and construction code of practice (CCOP)	<ul style="list-style-type: none"> Reduction in construction emissions. 	Low	East Herts Council

Table 14 - Priority 3: Support residents' make active travel choices

No.	Action	Benefits	Costs Low < £10k Medium £10 to £50k High > £50k	Responsible Agency
3.1	Support expansion of Herts Lynx on demand public transport scheme <ul style="list-style-type: none"> Increased coverage and provision of the transport leading to increased use of this form of public transport, reduction in private lone journeys from rural areas of the district through the AQMAs. 	<ul style="list-style-type: none"> Reduction in vehicles and emissions in the AQMAs. 	High	Hertfordshire County Council & Department for Transport

No.	Action	Benefits	Costs Low < £10k Medium £10 to £50k High > £50k	Responsible Agency
3.2	Investigate potential implementation of ‘footstreets’ in central Hertford <ul style="list-style-type: none"> Footstreets minimise the volume and impact of cars within certain areas making them more attractive and safer places for people to walk. 	<ul style="list-style-type: none"> Increasing active travel. Reducing vehicle numbers and therefore emissions. 	Medium	East Herts Council & Hertfordshire County Council
3.3	Develop personalised travel planning for residents <ul style="list-style-type: none"> Highlighting the public transport options within their area. 	<ul style="list-style-type: none"> Increased public transport use, reducing private vehicle numbers and emissions in AQMAs. 	Medium	East Herts Council & Hertfordshire County Council
3.4	Active Travel Campaign working with schools and businesses <ul style="list-style-type: none"> Continuation of the council’s active travel campaign which has so far reached 11 schools. 	<ul style="list-style-type: none"> Increased awareness of air pollution sources and outcomes. Increased active travel and public transport uptake. 	Medium	East Herts Council

No.	Action	Benefits	Costs Low < £10k Medium £10 to £50k High > £50k	Responsible Agency
3.5	Local Cycling and Walking Infrastructure Plan (LCWIP) <ul style="list-style-type: none"> Projects to improve the commuter infrastructure for non-motorised users between residential areas and towns. Promotion to encourage use. 	<ul style="list-style-type: none"> Increased uptake of active travel due to increased provision and links. Reducing car usage. 	Medium	Hertfordshire County Council
3.6	Exploration of increased on street town centre cycle parking <ul style="list-style-type: none"> Explore the feasibility of installing secure bicycle storage at key areas in East Hertfordshire. 	<ul style="list-style-type: none"> Increased uptake of active travel, reducing private car usage. 	Medium	East Herts Council & Hertfordshire County Council
3.7	Creation of an East Herts standalone air quality website <ul style="list-style-type: none"> Provide annual updates on the council's website on progress against the action plan. 	<ul style="list-style-type: none"> Increased awareness, access to information and resources. 	Medium	East Herts Council

Table 15 - Priority 4: Reduce East Herts Council's own impact on air quality

No.	Action	Benefits	Costs Low < £10k Medium £10 to £50k High > £50k	Responsible Agency
4.1	New council procurement rules <ul style="list-style-type: none"> Consolidate and reduce deliveries to council buildings. Promote e-vehicles through East Herts Council waste management contract. 	<ul style="list-style-type: none"> Reduced vehicles driving through AQMA to council offices. Reduction in vehicle emissions throughout district from council procured vehicles. 	Low	East Herts Council
4.2	Create East Herts Council workplace travel plan for staff <ul style="list-style-type: none"> Continuing facilitating home working arrangements. Promotion of car share schemes, public transport opportunities and council's cycling facilities. 	<ul style="list-style-type: none"> Reduced car journeys, increased uptake in active travel. 	Low	East Herts Council

No.	Action	Benefits	Costs Low < £10k Medium £10 to £50k High > £50k	Responsible Agency
4.3	Work with colleagues in Trading Standards to ensure the Domestic Solid Fuels Regulations are complied with <ul style="list-style-type: none"> Help with promotion and messaging. 	<ul style="list-style-type: none"> Reduced emissions. 	Low	East Herts Council
4.4	Explore the benefits to air pollution of introducing/expanding smoke control areas in East Hertfordshire. <ul style="list-style-type: none"> Establish the extend of pollution in East Hertfordshire from domestic wood burners. 	<ul style="list-style-type: none"> Reduced emissions. 	Low	East Herts Council

14 Illustration of Potential Impact of the AQAP

14.1 Estimated potential impact

The measures set out in the tables in **Chapter 13** present an ambitious programme of interventions by the council and its partners. Ultimately, however, the impact of the measures will depend on the extent to which they lead to behaviour change by those living or working in the district or just passing through. Quantifying the impact, in terms of NO₂ reduction, of the proposed measures is thus very difficult and susceptible to spurious precision, that is, figures which would be hard to justify given the inevitable uncertainty about how people will react in the real world.

While eager to avoid misleading predictions, we have nevertheless attempted to estimate the impact of each proposed measure based on background work by Bureau Veritas and council officers' professional judgement. The illustrations are presented as ranges of NO₂ reductions to avoid the spurious precision discussed above while justifying a fair degree of confidence in the likely efficacy of the proposed measures.

Table 16 below gives the estimated potential reductions in NO₂ for *proposed interventions*.

Table 17 below gives the estimated potential reductions in NO₂ for *measures that the council proposes to explore* in order to determine whether to implement them.

A summary consideration of the measures not included as part of this action plan is contained in **Appendix A**.

Table 16 - Estimated impact of proposed interventions

No.	Measure to be taken	Assumptions for Quantification	Estimated potential reduction in NO ₂		
			Bishop's Stortford	Hertford	Sawbridge -worth
1.1	Continued expansion of EV infrastructure.	Additional 60 EV cars across all AQMAs. Expected 0.006% reduction in road emissions per EV rather than combustion engine vehicle using latest Emissions Factors Toolkit. Additional 60 EVs would therefore result in around a 0.36% reduction in emissions. Effectiveness of measure in isolation is likely to be negligible, but it will help to push the drive towards normalising EV use.	0.5µg/m ³ to 1µg/m ³	0.5µg/m ³ to 1µg/m ³	0.5µg/m ³ to 1µg/m ³
1.4	Install additional anti-idling guidance /advisory signage.	Not possible to quantify given the existing amount of idling is not known for comparison. Reduction based on conservative professional judgement.	Up to 0.5µg/m ³	Up to 0.5µg/m ³	Up to 0.5µg/m ³
1.5	Continued promotion of our four key air quality campaigns.	Will promote behavioural change but not considered possible to quantify. Reduction based on professional judgement.	0.5µg/m ³ to 1µg/m ³	0.5µg/m ³ to 1µg/m ³	0.5µg/m ³ to 1µg/m ³
1.8	Hertfordshire County Council, East Herts Council and other stakeholders to maintain dialogue about any emerging operational and/or technical means of minimising congestion.	Not considered to be quantifiable. Reduction based on professional judgement.	Up to 0.5µg/m ³	Up to 0.5µg/m ³	Up to 0.5µg/m ³

No.	Measure to be taken	Assumptions for Quantification	Estimated potential reduction in NO ₂		
			Bishop's Stortford	Hertford	Sawbridge -worth
2.1	Hertfordshire Essex Rapid Transit (HERT)/ The A414 Corridor Strategy.	It is anticipated that a detailed Air Quality assessment will be completed for this scheme, which will set out the expected changes in pollutant concentrations. However, no assessment is yet available.		2µg/m ³ to 3µg/m ³	
2.2	Continued adherence to our Sustainability SPD and air quality neutral policies.	Not considered to be quantifiable. Reduction based on professional judgement.	Up to 0.5µg/m ³	Up to 0.5µg/m ³	Up to 0.5µg/m ³
2.3	Create a sustainable design and construction code of practice (CCOP).	Not considered to be quantifiable. Reduction based on professional judgement.	Up to 0.5µg/m ³	Up to 0.5µg/m ³	Up to 0.5µg/m ³
3.1	Support expansion of Herts Lynx on demand public transport scheme.	Current usage rates applied to an expanded service.	Up to 0.5µg/m ³	Up to 0.5µg/m ³	Up to 0.5µg/m ³
3.3	Develop personalised travel planning for residents.	Insufficient detail to quantify this measure. Reduction based on professional judgement.	Up to 0.5µg/m ³	Up to 0.5µg/m ³	Up to 0.5µg/m ³
3.4	Active Travel Campaign working with schools and businesses.	Unknown effectiveness at this stage. Reduction based on professional judgement.	Up to 0.5µg/m ³	Up to 0.5µg/m ³	Up to 0.5µg/m ³
3.5	Local Cycling and Walking Infrastructure Plan (LCWIP).	Potential for 5% fewer single occupancy vehicle trips due to shift to active travel based on case studies ^[28]	Up to 0.5µg/m ³	Up to 0.5µg/m ³	Up to 0.5µg/m ³
3.7	Creation of an East Herts standalone air quality website.	Unknown effectiveness at this stage. Reduction based on professional judgement.	Up to 0.5µg/m ³	Up to 0.5µg/m ³	Up to 0.5µg/m ³

²⁸ <https://www.theguardian.com/environment/bike-blog/2017/dec/01/bike-lanes-dont-clog-up-our-roads-they-keep-london-moving>

No.	Measure to be taken	Assumptions for Quantification	Estimated potential reduction in NO ₂		
			Bishop's Stortford	Hertford	Sawbridge -worth
4.1	New council procurement rules.	Unknown effectiveness at this stage. Reduction based on professional judgement.	Up to 0.5µg/m ³	Up to 0.5µg/m ³	Up to 0.5µg/m ³
4.2	Create East Herts Council workplace travel plan for staff.	Unknown effectiveness at this stage. Reduction based on professional judgement.	Up to 0.5µg/m ³	Up to 0.5µg/m ³	Up to 0.5µg/m ³
4.3	Work with colleagues in Trading Standards to ensure the Domestic Solid Fuels Regulations are complied with.	Unknown effectiveness at this stage. Reduction based on professional judgement.	Up to 0.5µg/m ³	Up to 0.5µg/m ³	Up to 0.5µg/m ³
Combined estimated potential reduction in NO₂			1 to 8 µg/m³	3 to 11µg/m³	1 to 8µg/m³

Table 17 considers the *potential* measures that will be explored during the lifetime of this AQAP. For each exploratory measure, an estimated potential impact, based on background work by Bureau Veritas and the professional judgement of council officers, is given *should the potential measure to be explored then be implemented*.

Table 17 - Quantification of measure to be explored

No.	Exploratory measure	Assumptions for Quantification	Assumed Reduction in AQMA		
			Bishop's Stortford	Hertford	Sawbridge -worth
1.2	Explore emissions-based parking charges.	Would promote behavioural change but not considered possible to quantify. Reduction based on professional judgement.	0.5µg/m ³ to 1µg/m ³	0.5µg/m ³ to 1µg/m ³	0.5µg/m ³ to 1µg/m ³
1.3	Explore Last Mile Delivery possibilities within the district.	Change in fleet/trips not yet known as not possible to quantify measures. Reduction based on professional judgement.	0.5µg/m ³ to 1µg/m ³	0.5µg/m ³ to 1µg/m ³	0.5µg/m ³ to 1µg/m ³

No.	Exploratory measure	Assumptions for Quantification	Assumed Reduction in AQMA		
			Bishop's Stortford	Hertford	Sawbridge-worth
1.6	Review the effectiveness of travel plans for schools and businesses.	Assumption based on increased adoption of plans triggered by the review process. Reduction based on professional judgement.	Up to 0.5µg/m ³	Up to 0.5µg/m ³	Up to 0.5µg/m ³
1.7	Investigate the possible pros and cons of new options being adopted by other local authorities, such as road pricing and ultra-low emission zones (ULEZ) in the AQMAs.	Would promote behavioural change but not considered possible to quantify with any accuracy especially as AQMA-only measures could see a reduction in the AQMA but increases elsewhere due to displacement of traffic. Prudent estimate used.	1µg/m ³ to 2µg/m ³	1µg/m ³ to 2µg/m ³	1µg/m ³ to 2µg/m ³
1.9	Monitor and act upon emerging guidance on the new national PM _{2.5} objectives.	Would reduce pollution from PM _{2.5} which could be alongside NO ₂ reductions, though PM _{2.5} would not of themselves bring about NO ₂ reductions.	0µg/m ³	0µg/m ³	0µg/m ³
3.2	Investigate potential implementation of footstreets in central Hertford.	In planning stage, insufficient detail to attempt quantification. Reduction based on professional judgement.	0.5µg/m ³ to 1µg/m ³	0.5µg/m ³ to 1µg/m ³	0.5µg/m ³ to 1µg/m ³
3.6	Exploration of increased on street town centre cycle storage / parking.	Unknown effectiveness at this stage. Reduction based on professional judgement.	Up to 0.5µg/m ³	Up to 0.5µg/m ³	Up to 0.5µg/m ³
4.4	Explore the benefits to air pollution of introducing/ expanding smoke control areas in East Hertfordshire.	Unknown effectiveness at this stage. Reduction based on professional judgement.	Up to 0.5µg/m ³	Up to 0.5µg/m ³	Up to 0.5µg/m ³
Combined estimated potential reduction in NO₂			2.5 to 6.5µg/m³	2.5 to 6.5µg/m³	2.5 to 6.5µg/m³

14.2 Illustration of potential cumulative impact of measures in the AQMAs

As noted above, assessing the extent to which individual interventions made by the council and its partners will lead to behaviour change and thus reductions in NO₂ is fraught with difficulty. It follows that seeking to estimate the cumulative impact will be extremely difficult. This difficulty is compounded by:

- some measures acting in combination may lead to a higher reduction to that estimated for each measure alone. For example, a measure to increase public transport when acting in combination with more cycling resulting from, say, more secure storage and dedicated cycle lanes may together make walking, as an alternative to driving, through the AQMA more pleasant thus the two individual measures could have an additive impact leading to greater reductions than the sum of the estimated reduction of each measure
- nationally, drivers of cars and commercial vehicles are switching to less polluting vehicles, it is thus to be expected that pollution from vehicles based on their fuel alone will begin to decrease, or at least arrest rises in, air pollution in the AQMAs over the lifetime of this AQAP. For all the reasons discussed above, precise estimates for this are difficult to make.

Table 18 - Illustration of the cumulative impact of measures in this AQMA

	Bishop's Stortford AQMA	Hertford AQMA	Sawbridge-worth AQMA
National annual mean average NO ₂ exposure objective	40µg/m ³	40µg/m ³	40µg/m ³
Consistent level required to revoke AQMA	36µg/m ³	36µg/m ³	36µg/m ³
Highest annual bias-adjusted level of NO ₂ in 2022	50.0µg/m ³	36.8µg/m ³	42.9µg/m ³
NO ₂ level based on estimated cumulative impact of measures to be taken (in Table 16)	42.0µg/m ³ to 49.0µg/m ³	25.8µg/m ³ to 33.8µg/m ³	34.9µg/m ³ to 41.9µg/m ³
NO ₂ level based on estimated cumulative impact of measures to be taken (in Table 16) and implementation of measures to be explored (in Table 17)	36.0µg/m ³ to 47.0µg/m ³	19.8µg/m ³ to 31.8µg/m ³	28.9µg/m ³ to 39.9µg/m ³

Table 18 indicates that:

- in the Hertford AQMA, the measures to be taken over the lifetime of this action plan are likely to act together to bring air pollution below the 36µg/m³ threshold for revoking the AQMA
- in Sawbridgeworth, if the upper estimates of pollution reduction from all the proposed measures (as listed in **Table 16**) were met, then it would appear possible to achieve pollution levels below the 36µg/m³ threshold for revoking the AQMA over the lifetime of this action plan. Lower reductions stemming from the proposed measures would not, however, lead to meeting this threshold. The ongoing switch away from fossil-fuelled vehicles could assist in meeting the threshold. If this impact is insufficient to achieve the lower levels then the council and its partners would need to consider the case for implementing some of the exploratory measures listed in **Table 17**
- the situation in Bishop's Stortford is more complicated; just the measures to be taken as listed in **Table 16** would not be sufficient to bring air pollution below the 36µg/m³ threshold for revoking the AQMA. In this AQMA, it is suggested that the impact of the switch away from fossil-

fuelled vehicles is very closely monitored on a regular basis and that, should this not assist sufficiently in bringing air pollution down below the threshold for revocation of the AQMA, the council, its partners and those living and working in the district will consider the case for implementing some of the exploratory measures listed in **Table 17**.

15 Cost / Benefit and Feasibility Analysis of Measures

Given the pressures on the capacity and resources of the council and its partners, it is important to determine how best to prioritise our efforts. This chapter uses the cost/benefit and feasibility rating scores developed by Bureau Veritas to rank the different measures in the action plans in **Chapter 13**.

15.1 Methodology

The low-medium-high estimated cost ratings in the action plan tables have been combined with the estimated impact of the measure on pollutant concentrations as listed in **Table 16** in line with the scoring matrix in **Table 19** provided by Bureau Veritas.

Table 19 - Cost Benefit Scoring Matrix

		Benefit: Estimated Reduction in Pollutant Concentrations (as listed in Table 16 and Table 17)						
		(1) <0.5µg/m³	(2) 0.5-1 µg/m³	(3) 1-2 µg/m³	(4) 2-3 µg/m³	(5) 3-4 µg/m³	(6) 4-5 µg/m³	(7) >5µg/m³
Cost (as listed in the tables in Chapter 12)	(1) < £10k	6	8	10	12	14	16	18
	(2) £10k - £50k	5	6	8	10	12	14	16
	(3) £50k +	4	5	6	8	10	12	14

The resulting scores are then multiplied by the feasibility assessment ratings listed in **Table 20**.

Table 20 - Feasibility Scores

Feasibility Score	Score
Measure has already been started and just requires progressing	4
Very easy to implement, and political good will towards this, sufficient resources	3
Possible to implement but may require some learning/campaigning, moderately time intensive	2
Difficult to implement, time and resource intensive	1

This methodology gives the overall combined cost/benefit and feasibility rating.

Table 21 lists all the measures to be taken (as listed in **Table 16**) in order of descending overall combined cost/benefit and feasibility score.

Table 21 – Cost, Benefit and Feasibility Analysis of proposed interventions

No.	Measure	Cost / Benefit Score (Table 19)	Feasibility Score (Table 20)	Overall Score (Cost / Benefit Score * Feasibility Score)
1.1	Continued expansion of EV infrastructure	6	4	24
3.5	Local Cycling and Walking Infrastructure Plan (LCWIP)	5	4	20
1.4	Install additional anti-idling guidance /advisory signage	6	3	18
4.2	Create East Herts Council workplace travel plan for staff	6	3	18
4.1	New council procurement rules	6	3	18

No.	Measure	Cost / Benefit Score (Table 19)	Feasibility Score (Table 20)	Overall Score (Cost / Benefit Score * Feasibility Score)
1.5	Continued promotion of our four key air quality campaigns	6	3	18
2.2	Continued adherence to our Sustainability SPD and air quality neutral policies	6	3	18
3.3	Develop personalised travel planning for residents	6	3	18
3.7	Creation of an East Herts standalone air quality website	5	3	15
4.3	Work with colleagues in Trading Standards to ensure the Domestic Solid Fuels Regulations are complied with	6	2	12
2.3	Create a sustainable design and construction code of practice (CCOP).	6	2	12
1.8	Hertfordshire County Council, East Herts Council and other stakeholders to maintain dialogue about any emerging operational and/or technical means of minimising congestion.	6	2	12
3.4	Active Travel Campaign working with schools and businesses	5	2	10
2.1	Hertfordshire Essex Rapid Transit (HERT)/ The A414 Corridor Strategy	8	1	8
3.1	Support expansion of Herts Lynx on demand public transport scheme	4	2	8

Table 22 lists the cost/benefit and feasibility of actions arising from the exploratory measures *should it be decided to implement the actions* in order of descending overall combined cost/benefit and feasibility score.

Table 22 – Cost, Benefit and Feasibility Analysis of measures to be explored

No.	Measure to be taken	Cost / Benefit Score (Table 19)	Feasibility Score (Table 20)	Overall Score Cost / Benefit (Score * Feasibility Score)
3.2	Investigate potential implementation of footstreets in central Hertford	6	2	12
1.6	Review of travel plans	6	2	12
1.2	Explore emissions-based parking charges	6	2	12
1.9	Monitor and act upon emerging guidance on the new national PM _{2.5} objectives	6	2	12
4.4	Explore the benefits to air pollution of introducing/ expanding smoke control areas in East Hertfordshire.	6	2	12
3.6	Exploration of increased on street town centre cycle storage / parking	5	2	10
1.7	Investigate the possible pros and cons of new options being adopted by other local authorities, such as road pricing and ultra-low emission zones (ULEZ) in the AQMAs	6 <i>note: the cost to implement this measure would be far higher than the £50k lower threshold of the highest cost score rating available. Also, the reduction in NO₂ could be higher than the prudent assumption in Table 17. Therefore, this score would require recalibration during any</i>	1	6

No.	Measure to be taken	Cost / Benefit Score (Table 19)	Feasibility Score (Table 20)	Overall Score Cost / Benefit (Score * Feasibility Score)
		<i>investigation of the pros and cons this possible measure</i>		
1.3	Explore Last Mile Delivery possibilities within the district	5	1	5

Appendix A - Reasons for Not Pursuing Action Plan Measures

Table 23 – Measures considered and not pursued and the reasons for that decision

Action Category	Action Description	Reason action is not being pursued (including Stakeholder views)
Traffic Management	Junction Improvements at Sawbridgeworth Junction	<p>One measure to help alleviate the congestion issues observed in the Sawbridgeworth AQMA at the double mini roundabout could be to determine if improvements to the junction can be made to help alleviate congestion on the four roads. A traffic light system could help to ensure that traffic on the main part of the road (London Road to Cambridge Road) would be better flowing, whilst also providing a potential safer junction for both pedestrians as well as cyclists.</p> <p>This measure has already been subject to examination, and it has been determined that there are no viable improvements to the junction based on its current capacity.</p>
Traffic Management	Junction Improvements at Hockerill Junction	<p>Similar to the above measure on the improvements at the Sawbridgeworth Junction, the Hockerill Junction which is currently a 4-way traffic light system results in congestions on each arm of the junction. However, this in combination with the narrow streets and proximity to buildings on either sites</p>

Action Category	Action Description	Reason action is not being pursued (including Stakeholder views)
		makes any additional measures other than an improved traffic light system, which has already been implemented, an non-viable solution.
Green Walls	Install a green wall on the Gascoyne Way multistorey car park or elsewhere within the AQMAS	<p>This intervention has been considered in the past and not pursued. DEFRA's UK-Air website which states the following with regards to quantifying the effect of vegetation on NO₂ concentrations:</p> <p><i>For nitrogen dioxide (NO₂), vegetation is, generally speaking, of little benefit; it is not a very efficient sink. The deposition occurs in daytime, and primarily in the warmer months, when NO₂ is less of a problem. Vegetation is a very poor sink for nitric oxide (NO) and soil is a source of NO, at least partially offsetting any potential benefit of uptake by vegetation.</i></p>
Planting Trees	Use tree planting to reduce air pollution	<p>DEFRA's UK-Air website indicates the relatively low benefit of tree planting with regard to reducing the effect of vegetation on NO₂ concentrations:</p> <p><i>Locally (tens to hundreds of square metres) tree planting may enhance or reduce dispersion; this redistributes pollution but does not remove it. Where vegetation acts as a barrier close to a source, concentrations immediately behind the barrier owing to that source are reduced typically by a factor of about 2 relative to those which would occur without the barrier, whereas on the source side of the barrier concentrations are increased.</i></p>

Action Category	Action Description	Reason action is not being pursued (including Stakeholder views)
		<i>Tree planting may also exacerbate the build-up of pollution within street canyons by reducing air-flow. The use of trees to improve air quality is not without negative impacts as some tree species are important sources of biogenic volatile organic compounds (BVOCs), notably isoprene. BVOCs can enhance the formation of pollutants including PM and ozone.</i>
Stopping further housing development	Reduce air pollution by dramatically reducing / halting new housing developments	The council is required by law to make provision for new housing development to meet local need. If the council were to seek to reduce development to significantly below local need levels as informed by nationally set methodologies, developers would in all probability apply to the national Planning Inspectorate to review the decision. The Planning Inspectorate would form a view based on the level of local need and could overturn the council's decision. It is in the local interest for the council to set planning targets and policies and designate sites so as to exert maximum control over the numbers, type, location, environmental sustainability and other standards of new housing.

Appendix B - NO₂ Source Apportionment Calculations

The µg/m³ concentrations in **Table 24** have been used by Bureau Veritas to undertake the source apportionment work for the council. Their full report can be found on our website:

<https://www.eastherts.gov.uk/environmental-health/air-quality>

Table 24 - NO₂ Source Apportionment Calculations

Calculation	Concentration (µg/m ³)		
	Bishop's Stortford AQMA	Hertford AQMA	Sawbridgeworth AQMA
Total Background NO ₂ [TB-NO ₂]	13.50	15.06	11.50
Total Background NO _x [TB-NO _x]	18.28	20.68	15.29
Regional Background NO _x [RB-NO _x]	7.17	7.31	7.34
Local Background NO _x [LB-NO _x]	11.10	13.37	7.95
Regional Background NO ₂ [RB-NO ₂]	5.30	5.32	5.52
Local Background NO ₂ [LB-NO ₂]	8.20	9.74	5.98
Total Max Modelled NO ₂ [T-NO ₂]	58.10	50.44	59.70
Local NO ₂ Contribution [L-NO ₂]	44.60	35.38	44.38

Appendix C - Emission Reduction Calculations

The $\mu\text{g}/\text{m}^3$ concentrations in **Table 25** have been used by Bureau Veritas to calculate the needed reduction in NO_x in order for the air quality to meet the hourly AQO. Their full report can be found on our website:

<https://www.eastherts.gov.uk/environmental-health/air-quality>

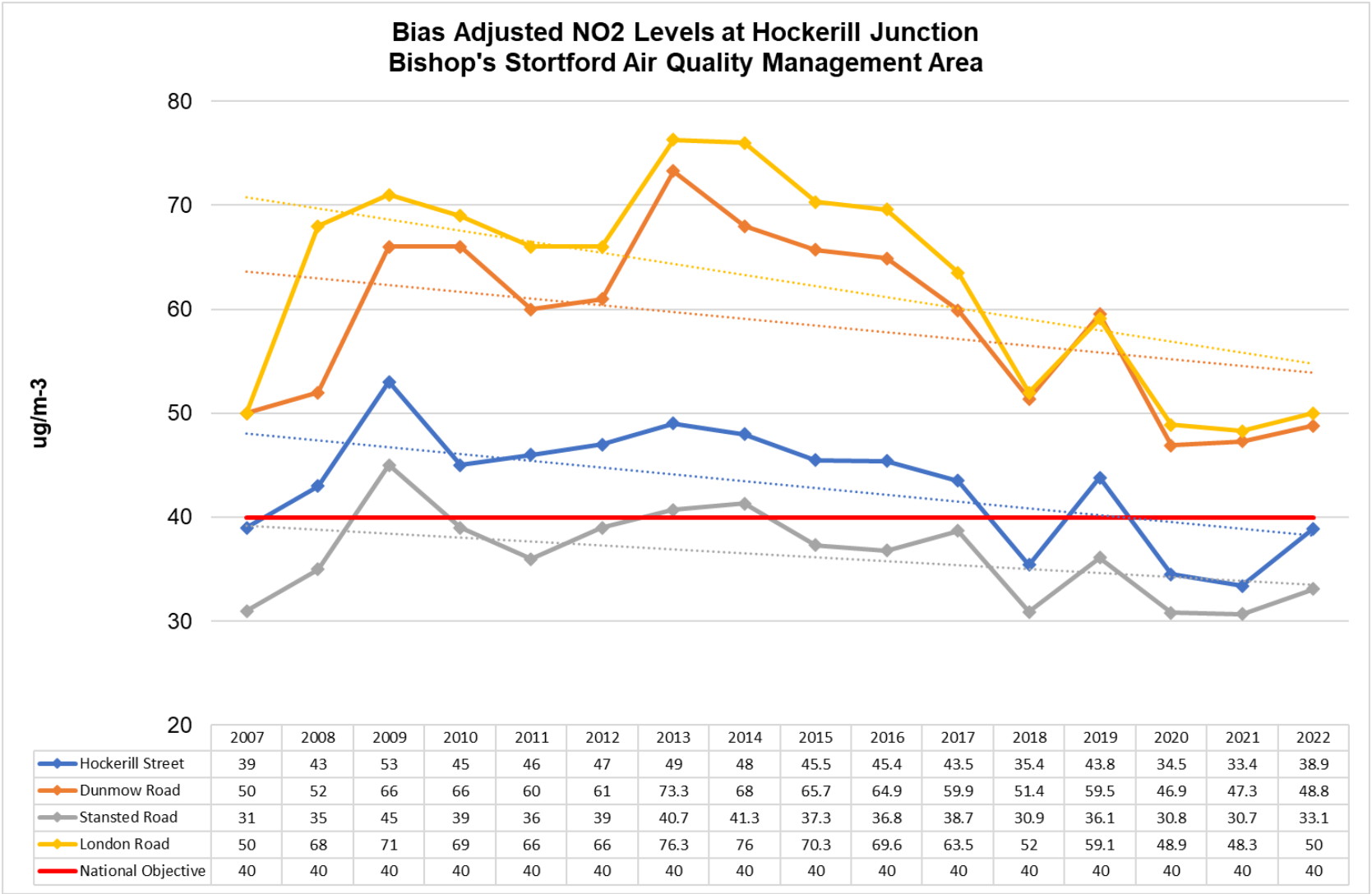
Table 25 – Required Reduction in NO_x emissions to meet AQO for Annual Mean Bias-Adjusted NO_2 (based on 2019 figures unless otherwise stated) –

Metric	Value ($\mu\text{g}/\text{m}^3$)		
	Bishop's Stortford AQMA	Hertford AQMA	Sawbridgeworth AQMA
(a) Worst-Case Relevant Exposure NO_2 Concentration	58.1	50.4	59.7
(b) Equivalent NO_x Concentration	108.8	96.9	112.8
(c) Background NO_x	18.3	20.7	15.3
(d) Background NO_2	13.5	15.1	11.5
(e) Road NO_x – Current	98.9	76.2	97.5
(f) Road NO_x – Required to achieve NO_2 concentration of $39.9\mu\text{g}/\text{m}^3$	53.8	50.5	57.9
(g) Required Road NO_x Reduction	45.1	25.7	39.6
Required % Reduction <i>figure in row (g) as a % of the figure in row (e)</i>	45.6%	33.7%	40.6%
$\mu\text{g}/\text{m}^3$ reduction from worst exposure to 10% below the national objective of $40\mu\text{g}/\text{m}^3$ that is, $36\mu\text{g}/\text{m}^3$ (data from Table 18)			
reduction from worst exposure in 2019	22.1	14.6	19.9
reduction from worst exposure in 2022	14.0	0.8	6.9

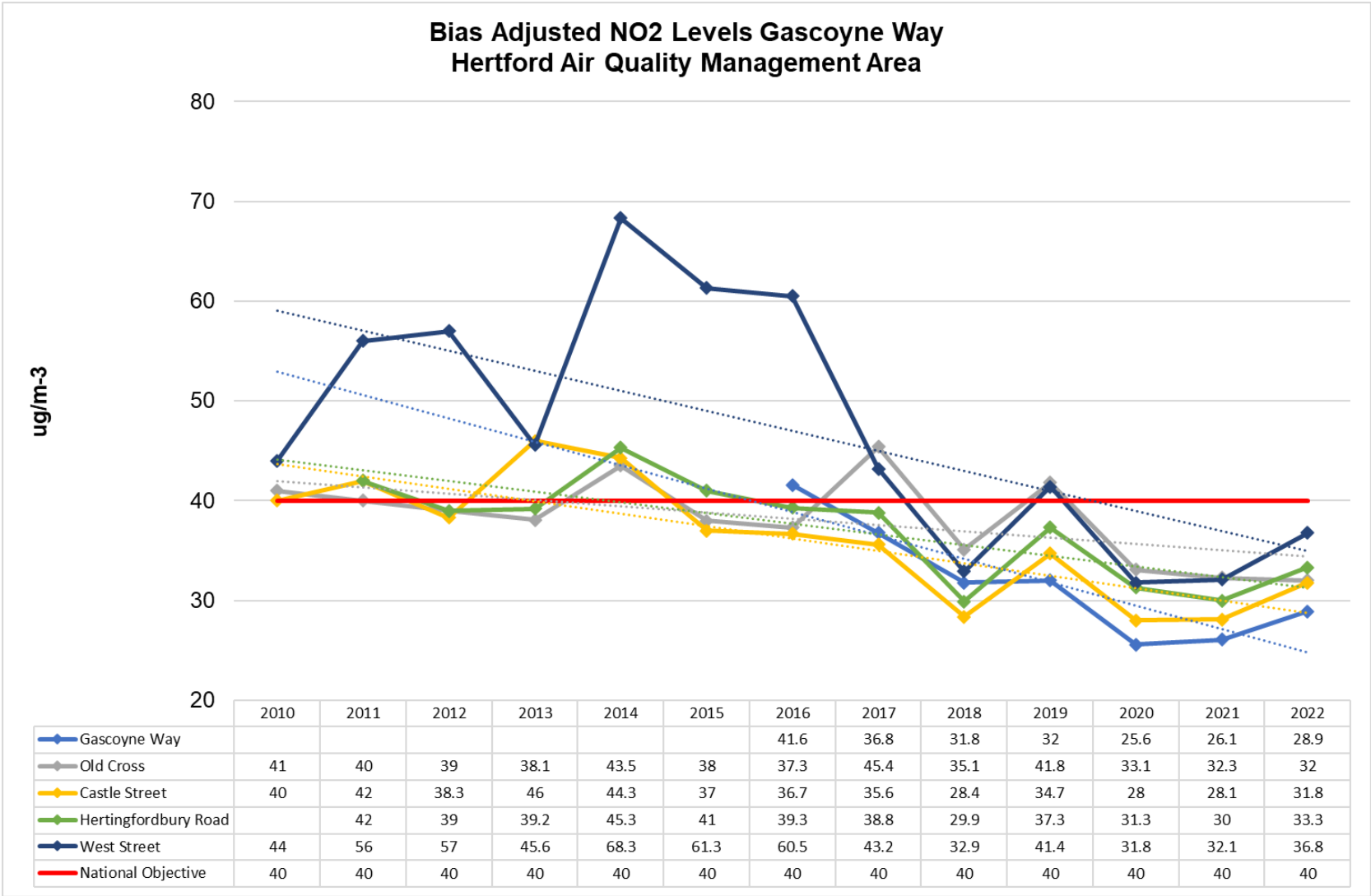
Appendix D - Steering Group Attendees

Invitees	From
Claire Spendley	Environmental Health
Linda Meehan	Sustainability and Climate Change
Laura Guy	Sustainability and Planning
Brad Wheeler	Taxi Licensing
Dominique Kingsbury	Car Parking
Chris Smith	Economic Development
Tina Gigg	Local Transport Plan, Hertfordshire County Council
Anushia Vettivelu	Transport/Highways
Daniel Clampin	Bureau Veritas
Viral Patel	Bureau Veritas

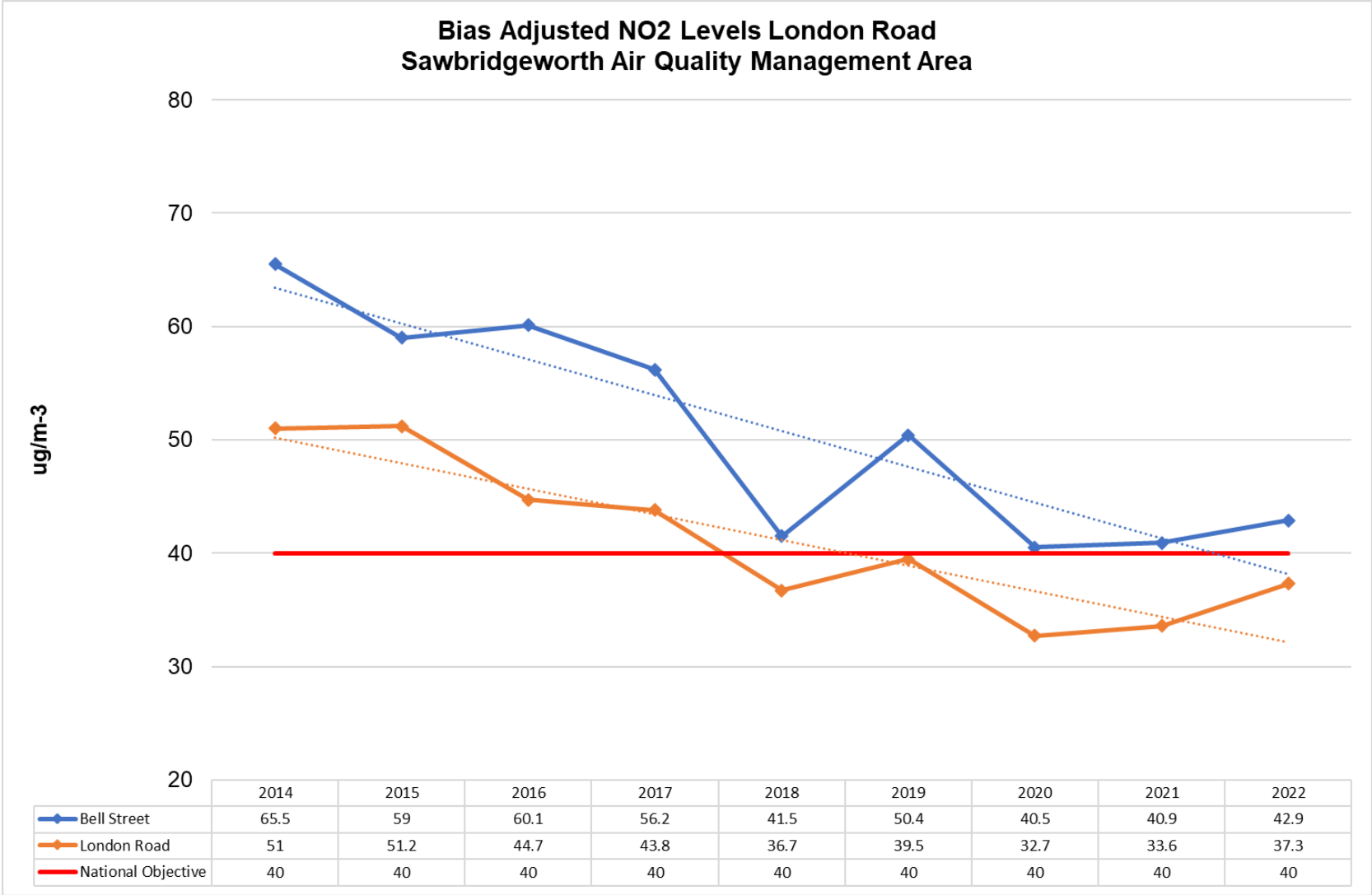
Appendix E - Air Pollution Monitoring Results – Bishop’s Stortford



Appendix F - Air Pollution Monitoring Results - Hertford



Appendix G - Air Pollution Monitoring Results - Sawbridgeworth



Appendix H - 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
AQO	Air Quality Objective
AQS	Air Quality Strategy
ASR	Air Quality Annual Status Report
DEFRA	Department for Environment, Food and Rural Affairs
EHDC	East Hertfordshire District Council
EU	European Union
EV	Electric Vehicle
LAQM	Local Air Quality Management
NO ₂	Nitrogen Dioxide
NO _x	Nitrogen Oxides
PM _{2.5}	Airborne particulate matter with an aerodynamic diameter of 2.5µm or less
PM ₁₀	Airborne particulate matter with an aerodynamic diameter of 10µm (micrometres or microns) or less

Appendix I - Action Plan presented in Defra format

Priority 1: Reduce the impact of traffic levels and congestion on air quality

Measure No.	Measure	Category	Classification	Estimated Year Measure to be Introduced	Estimated / Actual Completion Year	Organisations Involved	Funding Source	DEFRA AQ Grant Funding	Funding Status	Estimated Cost of Measure	Measure Status	Target Reduction in Pollutant / Emission from Measure (per AQMA)	Key Performance Indicator	Progress to Date	Comments / Potential Barriers to Implementation
1.1	Continued expansion of EV infrastructure	Promoting Low Emission Transport	Procuring alternative Refuelling infrastructure to promote Low Emission Vehicles, EV recharging, gas fuel recharge	2024	2027	East Herts Council	Private market / East Herts Council/LEVI scheme	No	Funding through contract and potentially LEVI contribution	£10k-£50k	Implementation	0.5µg/m³ to 1µg/m³	Additional EV charging points	Tendering exercise complete	Adverse market conditions
1.2	Explore emissions based	Promoting Low Emission Transport	Other	2024	2027	East Herts Council	East Herts Council	No	Not funded	£10k-£50k	Implementation and publicity	0.5µg/m³ to 1µg/m³	Reduced traffic volumes	Not yet started	Potential lack of political and/or

Measure No.	Measure	Category	Classification	Estimated Year Measure to be Introduced	Estimated / Actual Completion Year	Organisations Involved	Funding Source	DEFRA AQ Grant Funding	Funding Status	Estimated Cost of Measure	Measure Status	Target Reduction in Pollutant / Emission from Measure (per AQMA)	Key Performance Indicator	Progress to Date	Comments / Potential Barriers to Implementation
	parking charges														public support
1.3	Explore Last Mile Delivery possibilities in the district	Freight and Delivery Management	Freight Partnerships for city centre deliveries	To be confirmed (TBC)	TBC	East Herts Council	East Herts Council	No	Not funded	> £50k	Planning	0.5µg/m³ to 1µg/m³	Implementation of last mile delivery. Additional delivery lockers etc	including AQ hub lockers in certain areas to avoid individual LGV delivery movements	This measure specifically targets LGVs which are identified through the Source Apportionment to be the greatest contributor to NOx Emissions
1.4	Install additional	Public Information	Other	TBC	2027	East Herts Council & Hertfords	East Herts Council	No	Not funded	< £10k	Implementation	Up to 0.5µg/m³	Installation of signage	Council has already	Support in place

Measure No.	Measure	Category	Classification	Estimated Year Measure to be Introduced	Estimated / Actual Completion Year	Organisations Involved	Funding Source	DEFRA AQ Grant Funding	Funding Status	Estimated Cost of Measure	Measure Status	Target Reduction in Pollutant / Emission from Measure (per AQMA)	Key Performance Indicator	Progress to Date	Comments / Potential Barriers to Implementation
	anti-idling signage					hire County Council								installed signs in some car parks	
1.5	Continued promotion of our four key air campaigns	Promoting Travel Alternatives	Promotion of walking, promotion of cycling	2024	Ongoing	East Herts Council & Hertfords hire County Council	East Herts Council / HCC	No	Part funded	£10k-£50k	Implementation and publicity	0.5µg/m³ to 1µg/m³	Participation and awareness & increased sign up of air alert scheme	Delivered each year Ongoing use of air alert scheme	Budget constraints
1.6	Review effectiveness of travel plans for schools and	Promoting Travel Alternatives	Other	TBC	2027	East Herts Council & Hertfords hire County Council	East Herts Council & Hertfords hire County Council	No	Funded	< £10k	Implemented	Up to 0.5µg/m³	Plans in place and being followed	Ongoing	Budget constraints

Measure No.	Measure	Category	Classification	Estimated Year Measure to be Introduced	Estimated / Actual Completion Year	Organisations Involved	Funding Source	DEFRA AQ Grant Funding	Funding Status	Estimated Cost of Measure	Measure Status	Target Reduction in Pollutant / Emission from Measure (per AQMA)	Key Performance Indicator	Progress to Date	Comments / Potential Barriers to Implementation
	businesses														
1.7	Investigate the possible pros and cons of new options being adopted by other local authorities, such as road pricing and ultra-low emission zones (ULEZ) in	Promoting Low Emission Transport	Low Emission Vehicles, EV recharging, gas fuel recharge	TBC	2029	East Herts Council & Hertfords hire County Council	East Herts Council & Hertfords hire County Council	No	Funded	> £50k if adopted	Planning	1µg/m³ to 2µg/m³	Decision made on ULEZ / road pricing	Not yet started	Objections to even investigating the idea

East Herts Council

Measure No.	Measure	Category	Classification	Estimated Year Measure to be Introduced	Estimated / Actual Completion Year	Organisations Involved	Funding Source	DEFRA AQ Grant Funding	Funding Status	Estimated Cost of Measure	Measure Status	Target Reduction in Pollutant / Emission from Measure (per AQMA)	Key Performance Indicator	Progress to Date	Comments / Potential Barriers to Implementation
	the AQMAs														
1.8	Hertfordshire County Council, East Herts Council and other stakeholders to maintain dialogue about any emerging operational and/or technical means of minimising	Traffic Management	Other	2024	Ongoing	East Herts Council & Hertfordshire County Council	East Herts Council & Hertfordshire County Council	No	Not funded	< £10k	Planning	Up to 0.5µg/m³	Implementation of any identified measures	Not started	Budget constraints

East Herts Council

Measure No.	Measure	Category	Classification	Estimated Year Measure to be Introduced	Estimated / Actual Completion Year	Organisations Involved	Funding Source	DEFRA AQ Grant Funding	Funding Status	Estimated Cost of Measure	Measure Status	Target Reduction in Pollutant / Emission from Measure (per AQMA)	Key Performance Indicator	Progress to Date	Comments / Potential Barriers to Implementation
	congestion														
1.9	Monitor and act upon emerging guidance on the new national PM _{2.5} objectives	Policy Guidance and Development Control	Air Quality Planning and Policy Guidance	2024	Ongoing	East Herts Council & Hertfordshire County Council	East Herts Council & Hertfordshire County Council	No	Funded	< £10k	Planning	0µg/m³	Implementation of any identified measures	Not started	Budget constraints

Priority 2: Mitigate the impact of future growth on air quality

Measure No.	Measure	Category	Classification	Estimated Year Measure to be Introduced	Estimated / Actual Completion Year	Organisations Involved	Funding Source	DEFRA AQ Grant Funding	Funding Status	Estimated Cost of Measure	Measure Status	Target Reduction in Pollutant / Emission from Measure (per AQMA)	Key Performance Indicator	Progress to Date	Comments / Potential Barriers to Implementation
2.1	Hertfordshire Essex Rapid Transit (HERT)/ The A414 Corridor Strategy	Traffic Management	Other	TBC	Ongoing	HCC	HCC	No	Fully funded	> £50k	Implementation	2µg/m³ to 3µg/m³ <i>note: only applies to Hertford AQMA</i>	Ongoing implementation	Early options and business case completed	
2.2	Continued adherence to our Sustainability SPD and air quality neutral policies	Policy Guidance and Development Control	Air Quality Planning and Policy Guidance	Ongoing	Ongoing	East Herts Council	East Herts Council	No	Fully funded	< £10k	Implementation	Up to 0.5µg/m³	Reviewed through planning process	Sustainability SPD in place	SPD and District Plan significantly more stringent on requiring consideration of air quality in all

Measure No.	Measure	Category	Classification	Estimated Year Measure to be Introduced	Estimated / Actual Completion Year	Organisations Involved	Funding Source	DEFRA AQ Grant Funding	Funding Status	Estimated Cost of Measure	Measure Status	Target Reduction in Pollutant / Emission from Measure (per AQMA)	Key Performance Indicator	Progress to Date	Comments / Potential Barriers to Implementation
															planning apps
2.3	Create a sustainable design and construction code of practice (CCOP).	Policy Guidance and Development Control	Other	Review due to start in 2024	TBC	East Herts Council	East Herts Council and gov funding	No	Not funded	< £10k	Planning	Up to 0.5µg/m³	Creation of CCOP	Not yet started	Lack of resources or political will

Priority 3: Support residents' make active travel choices

Measure No.	Measure	Category	Classification	Estimated Year Measure to be Introduced	Estimated / Actual Completion Year	Organisations Involved	Funding Source	DEFRA AQ Grant Funding	Funding Status	Estimated Cost of Measure	Measure Status	Target Reduction in Pollutant / Emission from Measure (per AQMA)	Key Performance Indicator	Progress to Date	Comments / Potential Barriers to Implementation
3.1	Support expansion of Herts Lynx on demand public transport scheme	Transport Planning and Infrastructure	Other	2024	Ongoing	HCC	DfT / HCC	No	DfT funding being sought	> £50k	Implementation	Up to 0.5µg/m³	Usage numbers	Scheme in place	Availability for government funding is crucial
3.2	Investigate potential implementation of footstreets in central Hertford	Promoting Travel Alternatives	Promotion of Walking	TBC	2029	East Herts Council/Herts County Council	East Herts Council/Herts County Council	No	Not funded	£10k - £50k	Planning	0.5µg/m³ to 1µg/m³			Initial stages of viability

Measure No.	Measure	Category	Classification	Estimated Year Measure to be Introduced	Estimated / Actual Completion Year	Organisations Involved	Funding Source	DEFRA AQ Grant Funding	Funding Status	Estimated Cost of Measure	Measure Status	Target Reduction in Pollutant / Emission from Measure (per AQMA)	Key Performance Indicator	Progress to Date	Comments / Potential Barriers to Implementation
3.3	Develop personalised travel planning for residents	Promoting Travel Alternatives	Personalised Travel Planning	2024	Ongoing	Herts County Council	Herts County Council	No	TBC	£10k - £50k	Implementation	Up to 0.5µg/m³	Development of travel plans	A Bishop's Stortford Town wide travel plan (including Personalised Travel Planning) is being developed	
3.4	Active Travel Campaign working with schools and businesses	Promoting Travel Alternatives	Intensive active travel campaign & infrastructure	2024	Ongoing (subject to funds)	East Herts Council	East Herts Council	No	Not funded	£10k - £50k	Planning	Up to 0.5µg/m³	Greater Foot Traffic	Plans to be developed	

Measure No.	Measure	Category	Classification	Estimated Year Measure to be Introduced	Estimated / Actual Completion Year	Organisations Involved	Funding Source	DEFRA AQ Grant Funding	Funding Status	Estimated Cost of Measure	Measure Status	Target Reduction in Pollutant / Emission from Measure (per AQMA)	Key Performance Indicator	Progress to Date	Comments / Potential Barriers to Implementation
3.5	Local Cycling and Walking Infrastructure Plan (LCWIP)	Promoting Travel Alternatives	Promotion of cycling	2024	2025	Herts County Council	Herts County Council	No	Fully Funded	£10k - £50k	Implementation	Up to 0.5µg/m³	Securing funds to improve commuter options	Plans are underway for works to begin and funding has been secured for the works.	Work to deliver a continuous shared-use cycling and pedestrian path along the eastern side of London Road and Station Road in Buntingford is progressing well. Works are on track to complete

Measure No.	Measure	Category	Classification	Estimated Year Measure to be Introduced	Estimated / Actual Completion Year	Organisations Involved	Funding Source	DEFRA AQ Grant Funding	Funding Status	Estimated Cost of Measure	Measure Status	Target Reduction in Pollutant / Emission from Measure (per AQMA)	Key Performance Indicator	Progress to Date	Comments / Potential Barriers to Implementation
															in Summer 2023 before the Buntingford First School opens in September.
3.6	Exploration of increased on street town centre cycle parking	Promoting Travel Alternatives	Other	2024	TBC	HCC	HCC	No	Not funded	£10k - £50k	planning	Up to 0.5µg/m³	Storage in place	None	funding
3.7	Creation of an East Herts	Promoting Travel	Other	2024	2026	East Herts Council	East Herts Council	No	Not funded	£10k - £50k	Planning	Up to 0.5µg/m³	Website in place	None	funding

Measure No.	Measure	Category	Classification	Estimated Year Measure to be Introduced	Estimated / Actual Completion Year	Organisations Involved	Funding Source	DEFRA AQ Grant Funding	Funding Status	Estimated Cost of Measure	Measure Status	Target Reduction in Pollutant / Emission from Measure (per AQMA)	Key Performance Indicator	Progress to Date	Comments / Potential Barriers to Implementation
	standalone air quality website	Alternatives													

Priority 4: Reduce East Herts Council's own impact on air quality

Measure No.	Measure	Category	Classification	Estimated Year Measure to be Introduced	Estimated / Actual Completion Year	Organisations Involved	Funding Source	DEFRA AQ Grant Funding	Funding Status	Estimated Cost of Measure	Measure Status	Target Reduction in Pollutant / Emission from Measure (AQMA)	Key Performance Indicator	Progress to Date	Comments / Potential Barriers to Implementation
4.1	New council procurement rules	Promoting Low Emission Transport	Public Vehicle Procurement - Prioritising uptake of low emission vehicles	2025	2025	East Herts Council (and North Herts Council as part of waste management consortium)	East Herts Council	No	Fully funded	< £10k	Implementation	Up to 0.5µg/m³	% of waste management mileage via e-vehicles	Discussion with tenderers has commenced	New council procurement rules to consolidate and reduce deliveries to council buildings. Ultimate value of the final tenders
4.2	Create East Herts Council workplace travel	Promoting Travel Alternatives	Other	2024	Ongoing	East Herts Council	East Herts Council	No	Unfunded	< £10k	Amended travel patterns	Up to 0.5µg/m³	Reduced mileage	Work not yet started	Lack of political appetite / resources

East Herts Council

Measure No.	Measure	Category	Classification	Estimated Year Measure to be Introduced	Estimated / Actual Completion Year	Organisations Involved	Funding Source	DEFRA AQ Grant Funding	Funding Status	Estimated Cost of Measure	Measure Status	Target Reduction in Pollutant / Emission from Measure (AQMA)	Key Performance Indicator	Progress to Date	Comments / Potential Barriers to Implementation
	plans for staff														
4.3	Work with colleagues in HCC Trading Standards to ensure the Domestic Solid Fuels Regulations are complied with	Policy Guidance and Development Control	Other	2024	Ongoing	East Herts Council / HCC	East Herts Council / HCC	No	Unfunded	< £10k	Publicity and enforcement	Up to 0.5µg/m³	Adherence to regulations	Work not yet started	
4.4	Explore the benefits to air pollution of introducing	Policy Guidance and Development Control	Other	TBC	2029	East Herts Council	East Herts Council	No	Unfunded	<£10k	Publicity and enforcement	Up to 0.5µg/m³	Adherence to regulations	Work not yet started	

Measure No.	Measure	Category	Classification	Estimated Year Measure to be Introduced	Estimated / Actual Completion Year	Organisations Involved	Funding Source	DEFRA AQ Grant Funding	Funding Status	Estimated Cost of Measure	Measure Status	Target Reduction in Pollutant / Emission from Measure (AQMA)	Key Performance Indicator	Progress to Date	Comments / Potential Barriers to Implementation
	ng/ expanding smoke control areas in East Hertfordshire.														