



# Havering

LONDON BOROUGH

## AIR QUALITY ACTION PLAN 2025-2030



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**Appendix A response to Consultation**

**Appendix B Monitoring site maps**

### **Front Cover Photos**

1. The Havering logo incorporates a coat of arms and a sans-serif typeface. The coat of arms features a towered gateway, reminiscent of the gatehouse of the former Palace of Havering, and a ring set with a ruby.
2. Rear of a Mazda black car on a road showing traffic
3. A green wall on a building, the plants are growing on the wall
4. Electric vehicle only sign
5. A photo of a man walking through a park, view of grass and trees
6. Romford market place, with plant and furniture vendors

## **Foreword by the Cabinet Member for Environment, Barry Mugglestone**

Air quality is an important Public Health issue across Havering, and the whole of London.

Pollutants that affect air quality do not respect administrative boundaries, from dust clouds from the Sahara Desert to the burning of fossil fuels from power stations miles away, as well as local factors such as transport emissions at the roadside. Whilst Central Government have a significant role in tackling the wider issues, there is a role for everyone to improve our air quality.

Air Quality can be improved by international, national and local initiatives, but also across industry and businesses. London authorities have the means to address local air quality issues, working together across London with the London Mayor, the Greater London Authority and Transport for London. Individually we all have a role to play in tackling air pollution through driving less, walking and cycling more, and other lifestyle choices.

Within Havering, our primary issues are those related to transport and building emissions, with the invisible pollutants of nitrogen dioxide and the microscopic particulate matter that is harmful to us all. Our Air Quality Action Plan sets out how we, as a Council, will look to reduce these as much as practicable.

In addition to the actions set out within this plan by Havering Council, the London Mayor, Sadiq Khan, implemented the extension of the ULEZ (Ultra Low Emission Zone) to all London boroughs at the end of August 2023 in the hope to improve air quality across the whole of the capital.

The aim of this document is to provide an overview of the actions to be taken to improve the air quality across the London Borough of Havering. In doing so it will examine the key pollutants of concern in the borough and the health risks associated with these. It will further examine the concentrations of these pollutants in Havering, and how steps will be undertaken to reduce these where practicable, building on past measures.

Since the adoption of the previous action plan, significant progress and action has been made to improve overall air quality in Havering where the actions have been under our control. The council's priority has been on behavioural change, education, and a focused partnership approach to improve the air quality across the borough.

In this Air Quality Action Plan, we outline how we plan to effectively use local levers to tackle air quality issues within our gift. However, we recognise that there are many air quality policy areas that are outside of our influence (such as vehicle emission standards, national vehicle taxation policy, Transport for London road networks), and so we will continue to work with and lobby regional and central government on policies and issues beyond Havering's direct control.

It is acknowledged that there has been a delay in issuing this AQAP following the expiry of the previous one which expired in 2023, and this is discussed later within this document.

## **Summary Director of Public Health.**

Havering Council has produced this Air Quality Action Plan (AQAP) as part of our duty to London Local Air Quality Management. It outlines the action we will take to improve air quality in Havering between 2025 and 2030.

This action plan builds on the previous action plan, which ran from 2018-23. Highlights of successful projects delivered through the previous action plan include:

- We expanded our Nitrogen Dioxide diffusion tube network by six additional diffusion tube monitoring sites. There are now 46 sites in total, which provide more information about air quality across the borough.
- We continued the successful work with schools, aiming to raise awareness around air quality and promote active and healthy ways to go to school. In particular, we carried out active travel and air quality themed Theatre in Education at primary schools, engaged with schools to develop and maintain active Travel Plans (47 schools have been accredited by the STARS scheme), offered free cycle training to children, as well as small grants to schools for cycle storage and parking facilities, launched walking zone maps for 3 schools, and implemented School Streets at 3 locations, aiming to further expand the scheme.
- We have actively raised awareness around the negative impacts from engine idling and launched 11 anti-idling events outside schools between 2019 and 2022.
- We planted trees at several pollution hot spots within the borough, such as Rush Green Road, Roneo Corner, Romford Ring Road, and Rainham Village, as well as a boundary fence planting at the Mawney Foundation School, in order to reduce particulate levels.
- We reviewed the Council's Planning conditions, to ensure that new developments in the borough meet the regional and local air quality policy requirements, and to deliver on the London Mayors Air Quality Neutral requirements.
- We completed a feasibility study on the delivery of Electric Vehicle (EV) charging point infrastructure and installed 68 EV charging points at Council-owned car parks, as well as 80 on-street charging points.

Air pollution is associated with several adverse health impacts. It is recognised as a contributing factor in the onset of heart disease and cancer. Poor air quality particularly affects the most vulnerable in society: children and older people, and those with existing heart and lung conditions. The older generation are less likely to be able to change where they live, when affected by poor air quality, when compared to other demographics who may be able to move location more easily if air quality is of concern.

Havering has an increasing older demographic than other London Boroughs, this puts those within our population at a disadvantage from poor air quality. There is also often a strong correlation with wider inequalities because areas with poor air quality are also often the less affluent areas.<sup>[1,2]</sup>

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<sup>1</sup> Havering Demographic Profile, Joint Strategic Needs Assessment 2023-2024, LBH

<sup>2</sup> Air Pollution and Inequalities in London, Mayor of London, Update 2023

In this Plan we have developed actions under six broad topics:

- Air quality monitoring and modelling
- Reducing emissions from building and developments
- Public Health and awareness to encourage smarter travel
- Borough fleet actions
- Localised solutions
- Cleaner transport

In this Air Quality Action Plan, we have adopted the following nine priority actions, which we will seek to implement in Havering to contribute not only to improve air quality within the borough, but beyond our local government sphere.

- (1) Ensure enforcement of Non-Road Mobile Machinery (NRMM) air quality policies, in partnership with the London Borough of Merton.
- (2) Promote and enforce the Smoke Control Area to reduce the amount of non-compliant domestic fireplaces.
- (3) Promote and deliver energy efficiency and energy supply retrofitting projects to Council's housing stock and Council-owned workplaces.
- (4) Support and promote pollution alert services, such as Airtex and the Mayor of London's alert service.
- (5) Raise awareness and aim to improve air quality in and around schools.
- (6) Reduce emissions from Council fleets.
- (7) Regular temporary Car Free Days and pedestrianisation scheme.
- (8) Installation of Ultra-low Emission Vehicle (ULEV) infrastructure (electric vehicle charging points, rapid electric vehicle charging points and hydrogen refuelling stations) in future new developments.
- (9) Provision of infrastructure to support walking and cycling.

## **RESPONSIBILITIES AND COMMITMENT**

This Air Quality Action Plan was prepared by the Public Protection Service of Havering Council, with the support and agreement of the following Services/ Teams:

Public Health, Transport Planning, Planning, Housing Services, Regeneration, Asset Management, Fleet Management, Procurement, Public Realm, Communications.

This AQAP has been approved by:

**Cllr Barry Mugglestone, Cabinet Member for Environment**

**Mark Ansell, Director of Public Health**

**Helen Oakerbee, Director of Planning & Public Protection**

This AQAP will be subject to an annual review, appraisal of progress and reporting to the relevant Council Lead Member. Progress each year will be set out in the Annual Status Reports produced by Havering Council and submitted to the Greater London Authority, as part of our statutory London Local Air Quality Management duties.

It is acknowledged that there has been a gap between this AQAP and the previous AQAP which has been caused by the loss of specialist resources for the last two years and across the Environmental Protection Team, and the added pressure of the issues around Launderers Lane in Rainham. However, these resource issues are being addressed, so as to ensure that air quality is being provided the resources required.

For further information, please contact the Public Protection Service at:

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**Abbreviations**

|                   |   |
|-------------------|---|
| AQAP              | Air Quality Action Plan                             |
| AQMA              | Air Quality Management Area                         |
| AQO               | Air Quality Objective                               |
| BEB               | Buildings Emission Benchmark                        |
| CAB               | Cleaner Air Borough                                 |
| CAZ               | Central Activity Zone                               |
| EV                | Electric Vehicle                                    |
| GLA               | Greater London Authority                            |
| LAEI              | London Atmospheric Emissions Inventory              |
| LAQM              | Local Air Quality Management                        |
| LLAQM             | London Local Air Quality Management                 |
| NRMM              | Non-Road Mobile Machinery                           |
| PM <sub>10</sub>  | Particulate matter less than 10 micron in diameter  |
| PM <sub>2.5</sub> | Particulate matter less than 2.5 micron in diameter |
| TEB               | Transport Emissions Benchmark                       |
| TfL               | Transport for London                                |

## **Introduction**

Since September 2006, the entire London Borough of Havering has been designated an Air Quality Management Area (AQMA) under Sections 82(1) and 83(1) of the Environment Act 1995, for both Nitrogen Dioxide (NO<sub>2</sub>) and Particulate Matter (PM<sub>10</sub>).

This Air Quality Action Plan outlines the actions that Havering will deliver between 2026 and 2031 to reduce concentrations of these specific pollutants and exposure of the population to these. All the actions contained within this Plan are intended to have a positive impact, directly or indirectly, on the health and quality of life of residents and visitors to the borough.

The Plan has been developed in recognition of the legal requirement for the local authority to work towards air quality objectives under Part IV of the Environment Act 1995 and relevant regulations made under that Act and to meet the requirements of the London Local Air Quality Management (LLAQM) statutory process<sup>[3]</sup>. It considers the situation regarding air quality in Havering in the wider context of Greater London and sets out the actions the Council and its partners propose to take to improve air quality in the borough, reduce the levels of three key pollutants: Nitrogen Dioxide (NO<sub>2</sub>), and particulate matter: PM<sub>10</sub> and PM<sub>2.5</sub>.

The UK Clean Air Strategy issued in 2019, provides the overarching strategic framework for air quality management in the UK. It contains national air quality standards and objectives established by the Government to protect human health.

The UK national air quality objectives for NO<sub>2</sub>, PM<sub>2.5</sub> and PM<sub>10</sub> are shown in Table 1.

| <b>Pollutant</b>  | <b>UK Air Quality Standards</b>  |
|-------------------|--|
| NO <sub>2</sub>   | 40 µg/m <sup>3</sup> annual mean<br>200 µg/m <sup>3</sup> 1-hour mean more than two a year                         |
| PM <sub>2.5</sub> | 20 µg/m <sup>3</sup> annual mean   |
| PM <sub>10</sub>  | 40 µg/m <sup>3</sup> annual mean<br>50 µg/m <sup>3</sup> 24-hour mean not to be exceeded more than 35 times a year |

**Table 1: National Air Quality Objectives for NO<sub>2</sub>, PM<sub>2.5</sub> and PM<sub>10</sub>**

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<sup>3</sup> London Local Air Quality Management (LLAQM) Technical Guidance 2019 (LLAQM.TG(19)) ([https://www.london.gov.uk/sites/default/files/llaqm\\_technical\\_guidance\\_2019.pdf](https://www.london.gov.uk/sites/default/files/llaqm_technical_guidance_2019.pdf))



## World Health Organisation (WHO) Guidelines

In September 2021, the WHO announced changes to its guideline air quality limits (previously published in 2005)<sup>4</sup>. The annual PM<sub>2.5</sub> limit was reduced from 10 µg/m<sup>3</sup> to 5 µg/m<sup>3</sup> and annual NO<sub>2</sub> from 40 µg/m<sup>3</sup> to 10 µg/m<sup>3</sup>. The Mayor of London's current ambition, set out in the London Environment Strategy, 2018, is to meet the 10 µg/m<sup>3</sup> threshold for PM<sub>2.5</sub> by 2030<sup>5</sup>. Boroughs have a key role to play in helping to meet this target, this is why PM<sub>2.5</sub> is one of three focus areas in this AQAP.

## The Environment Act 2021

The Act operates as the UK framework for Environmental Protection, for water quality, clean air and additional further environmental protection. This Act enshrines environmental protection in law and sets new binding targets for air quality, water, biodiversity, and waste reduction.

Concerning air quality, the Act strengthens local powers in relation to air quality enforcement. The Act amends the provision within the Environment Act 1995, updating and strengthening the local air quality management framework (LAQM). It ensures that solutions to poor air quality is shared across local government structures and with relevant public bodies. The Act also includes amendments to the Clean Air Act 1993 which seek a simpler structure for smoke emission enforcement from chimneys of buildings, fixed boilers and industrial plant.

Under this act, the government set two new legally binding long-term targets to reduce concentrations of fine particulate matter, PM<sub>2.5</sub>. The two new targets are an annual mean concentration of 10 micrograms per metres cubed (µg/m<sup>3</sup>) or below and a reduction in average population exposure by 35% by 2040.

## What is Nitrogen Dioxide: NO<sub>2</sub>

All combustion processes produce oxides of nitrogen (NO<sub>x</sub>). In Havering, road transport and heating systems are the main sources of these emissions. NO<sub>x</sub> is primarily made up of two pollutants - Nitric Oxide (NO) and Nitrogen Dioxide (NO<sub>2</sub>). NO<sub>2</sub> is of most concern due to its impact on health. NO is the primary pollutant from transport, but readily converts to NO<sub>2</sub> by interacting with ozone (O<sub>3</sub>) after a matter of minutes. Reducing concentrations of NO it is essential to control emissions of NO<sub>2</sub>.

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<sup>4</sup> WHO global air quality guidelines, Particulate Matter (PM<sub>2.5</sub> and PM<sub>10</sub>), ozone, nitrogen dioxide, sulphur dioxide and carbon monoxide, 2021 (<https://www.who.int/publications/i/item/9789240034228>)

<sup>5</sup> London Environment Strategy 2018 (<https://www.london.gov.uk/programmes-and-strategies/environment-and-climate-change/london-environment-strategy>)

## What is Particulate Matter: PM<sub>10</sub> and PM<sub>2.5</sub>

Particulate matter (PM<sub>10</sub> and PM<sub>2.5</sub>) is a complex mixture of non-gaseous particles of varied physical and chemical composition. It is categorized by the size of the particle (PM<sub>10</sub> are particles with a diameter of less than 10 microns). Most PM emissions in Havering are caused by road traffic and in central London this is as much as 80%. Exhaust emissions, tyre and brake wear and dust from road surfaces are the main sources. Construction sites, with high volumes of dust and emissions from machinery are also major sources of local PM pollution, along with accidental fires and burning of waste/bonfires.

## Effects of Poor Air Quality

### Short Term NO<sub>2</sub> Exposure

- A respiratory impact particularly in Asthma sufferers.
- Increase in airway allergens and inflammatory reactions.
- Increased hospital admissions.
- Increased mortality.

### Long Term NO<sub>2</sub> Exposure

- Reduction in lung function.
- Increased respiratory symptoms.

### Short Term PM Exposure

- Lung inflammatory reactions.
- Respiratory symptoms.
- Adverse effects on the cardiovascular system.
- Increased usage of medication.
- Increased hospital admissions.
- Increased mortality.

### Long Term PM Exposure

- Increase in lower respiratory symptoms.
- Reduced lung function in children.
- Increase in COPD.
- Reduction in lung function in adults.
- Reduction in life expectancy is owing to cardiopulmonary mortality and cancer.

Exposure to the principal vehicle pollutants affecting Havering (NO, PM<sub>2.5</sub> and PM<sub>10</sub>) can have both short and long-term effects, ranging from respiratory inflammation, particularly in asthma sufferers, and increased used of medication, to reduced lung function, cancers, and reduction in life expectancy.

In 2012 the World Health Organization (WHO) classified diesel as being carcinogenic to humans. Additionally, air pollution particularly affects the most vulnerable in society: children (including unborn) and older people, and those with existing heart and lung conditions. There is often a strong correlation with areas of deprivation having the poorest air quality.

Research has shown that those living in more deprived areas are exposed to higher concentrations of air pollution, often because homes and residences of these groups are situated next to roads with higher concentrations of emissions. Deprived communities also generally suffer greater burdens from air-pollution-related death and sickness.

The health impacts of air pollution should not be underestimated. More people in London are harmed by air pollution attributed to road transport than by road collisions and incidents. <sup>[6,7]</sup>

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<sup>6</sup> <https://tfl.gov.uk/corporate/publications-and-reports/road-safety#on-this-page-0>

<sup>7</sup> [https://erg.ic.ac.uk/research/home/resources/ERG\\_ImperialCollegeLondon\\_HIA\\_AQ\\_LDN\\_11012021.pdf](https://erg.ic.ac.uk/research/home/resources/ERG_ImperialCollegeLondon_HIA_AQ_LDN_11012021.pdf)

## **About Havering**

The London Borough of Havering encompasses some 43 square miles, divided over 18 electoral wards. In spatial terms, it is the third largest borough in London. It is characterised by suburban development and large areas of protected open space (almost 50% of the borough is green belt), especially towards the east of the borough.

The estimated population of Havering in 2021 was 262,000<sup>[4]</sup>. Since 2011 its population size has increased by 10.4%. The borough's population profile is distinctive; it has a much higher proportion of older people aged 65+ (18%) than the London average (12.2%).

Havering is an affluent borough. However, there are zones of deprivation to the north of the borough (Gooshays and Heaton Wards) and the south (South Hornchurch). It includes Romford, an important town centre for North-East London, known for its major retail development, successful night-time economy and densely populated residential areas. In addition, there are significant smaller District Centres at Collier Row, Elm Park, Harold Hill, Hornchurch, Rainham and Upminster. The southern part of Havering includes the London Riverside Business Improvement District and will be a key area of increasing development and population change over the next few years.

It is expected that Havering's population will continue to grow and become more ethnically diverse. We also expect to see further economic and residential development and improvements in the borough's infrastructure. These will include extensive residential and commercial developments in Romford and the transformation of Rainham and Beam Park, in the south of the borough, by the creation of a new high quality and residential neighbourhood. In addition, the borough will benefit from improved access to, and from, Central London and beyond, because of Crossrail.

The borough's road network will continue to be maintained and enhanced, though, as elsewhere, electric vehicles will increasingly replace internal combustion engines, which will improve air quality significantly.

By 2031, it is hoped that the Council will have successfully progressed its ambitious house building and estate regeneration programme, by providing new, high-quality homes on existing council-owned housing estates. The Council also expects that the employment area to the south of Rainham and Beam Park will remain a strategically important industrial area and that it will have benefited from physical improvements, such as the replacement of poor-quality buildings, and the creation of more high-quality jobs.

Havering's Green Belt, green and open spaces, biodiversity, and heritage assets will continue to be valued and enhanced, recognising their contribution to the borough's character and future resilience, and its appeal as a place to live, work and visit. Havering's existing green spaces will continue to offer an array of recreation and leisure opportunities and, by 2031, will be more attractive and usable, as well as more accessible to residents.

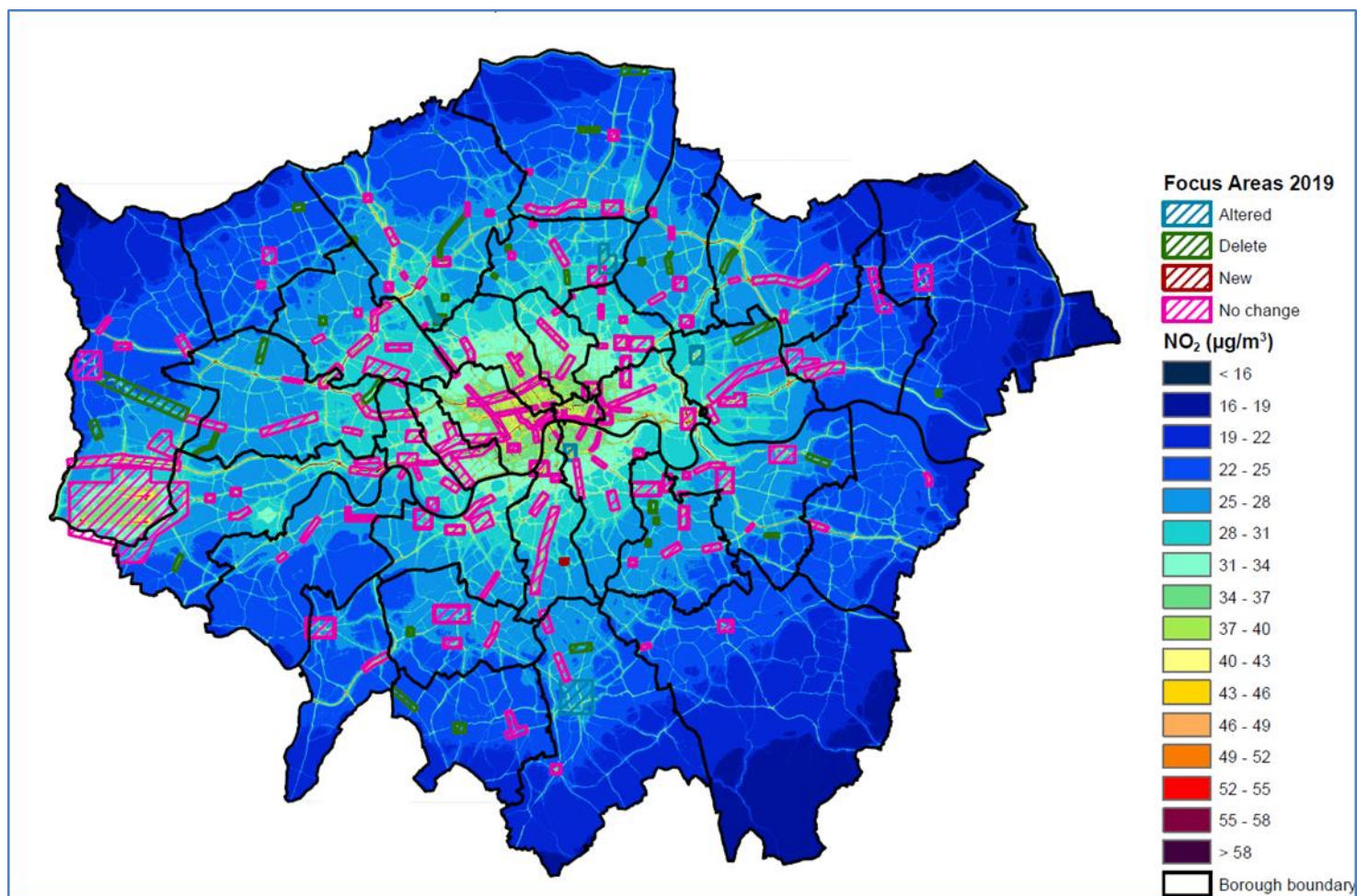
## **Air Quality Management Area and Focus Areas**

Air quality in Havering is overall considered “good” but there are locations where pollution levels are high (e.g. the main road network). Since September 2006, the entire London Borough of Havering has been designated an Air Quality Management Area (AQMA) under Sections 82(1) and 83(1) of the Environment Act 1995, for both Nitrogen Dioxide (NO<sub>2</sub>) and Particulate Matter (PM<sub>10</sub>). Although NO<sub>2</sub> concentrations have been decreasing at most of our monitoring locations over the past four years, there are still a few locations, where the annual mean objective is still exceeded.

The Council currently monitors PM<sub>10</sub> at two locations (Rainham and Romford) and PM<sub>2.5</sub> at one site in the borough (Rainham). Additional PM 2.5 monitoring equipment is to be installed at Romford within this review period. Although the data from these locations provide good evidence that the national objectives for these pollutants are being met, it is acknowledged that there might be locations where the levels may be higher. Furthermore, research has shown that these pollutants are damaging to health at any level and in the light of the revised WHO guideline levels in 2021, we are committed to work towards reductions of their levels.

To assist local authorities to target air pollution hotspots, the GLA has identified Air Quality Focus Areas (AQFAs). AQFAs are locations with both elevated levels of pollution and high human exposure, where national air quality objectives are exceeded. Considering the latest version of the London Atmospheric Emissions Inventory (LAEI) 2019, the GLA reviewed the AQFAs which had been identified in 2016. This led to removal of the Rainham Broadway from the list of AQFAs, with Romford Town Centre being now the only AQFA in Havering, reflecting the overall improvement of air quality across London, as well as the borough's better than London average air quality. The latest AQFAs in Greater London are presented in Figure 1.

Figure 1. Air Quality Focus Areas in Greater London





## Modelled Maps

The 2019 LAEI includes emissions estimates for the base year 2019, covering Greater London (the 32 London boroughs and the City of London), as well as areas outside Greater London up to the M25 motorway. These emissions have been used to estimate ground level concentrations of key pollutants NO<sub>x</sub>, NO<sub>2</sub>, PM<sub>10</sub> and PM<sub>2.5</sub> across Greater London for year 2019, using an atmospheric dispersion model. Figures 2, 3 and 4 show the modelled maps of annual mean concentrations of NO<sub>2</sub>, PM<sub>10</sub> and PM<sub>2.5</sub> respectively, in Havering.

**Figure 2. Modelled Map of Annual Mean NO<sub>2</sub> in Havering (from LAEI 2019)**

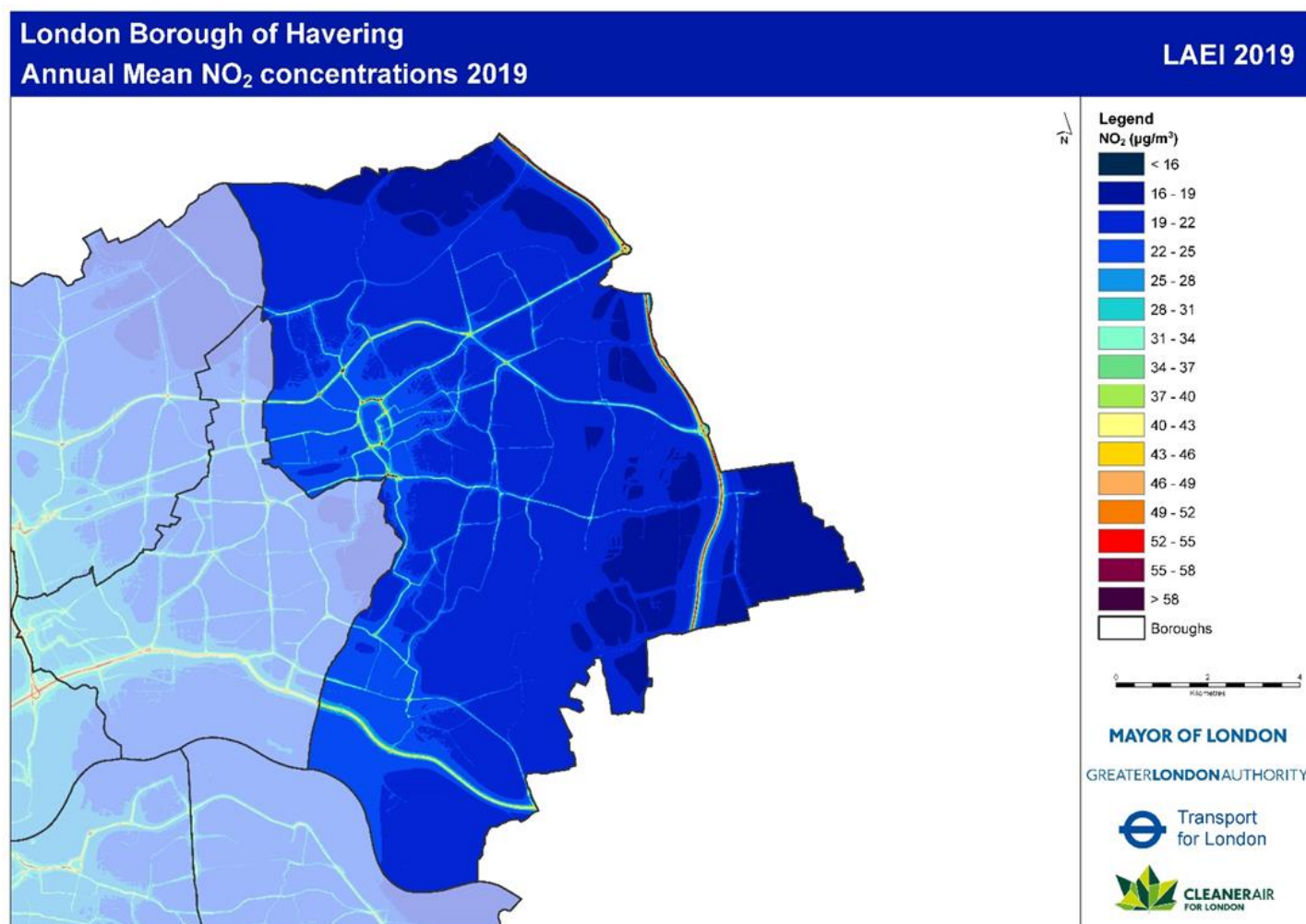
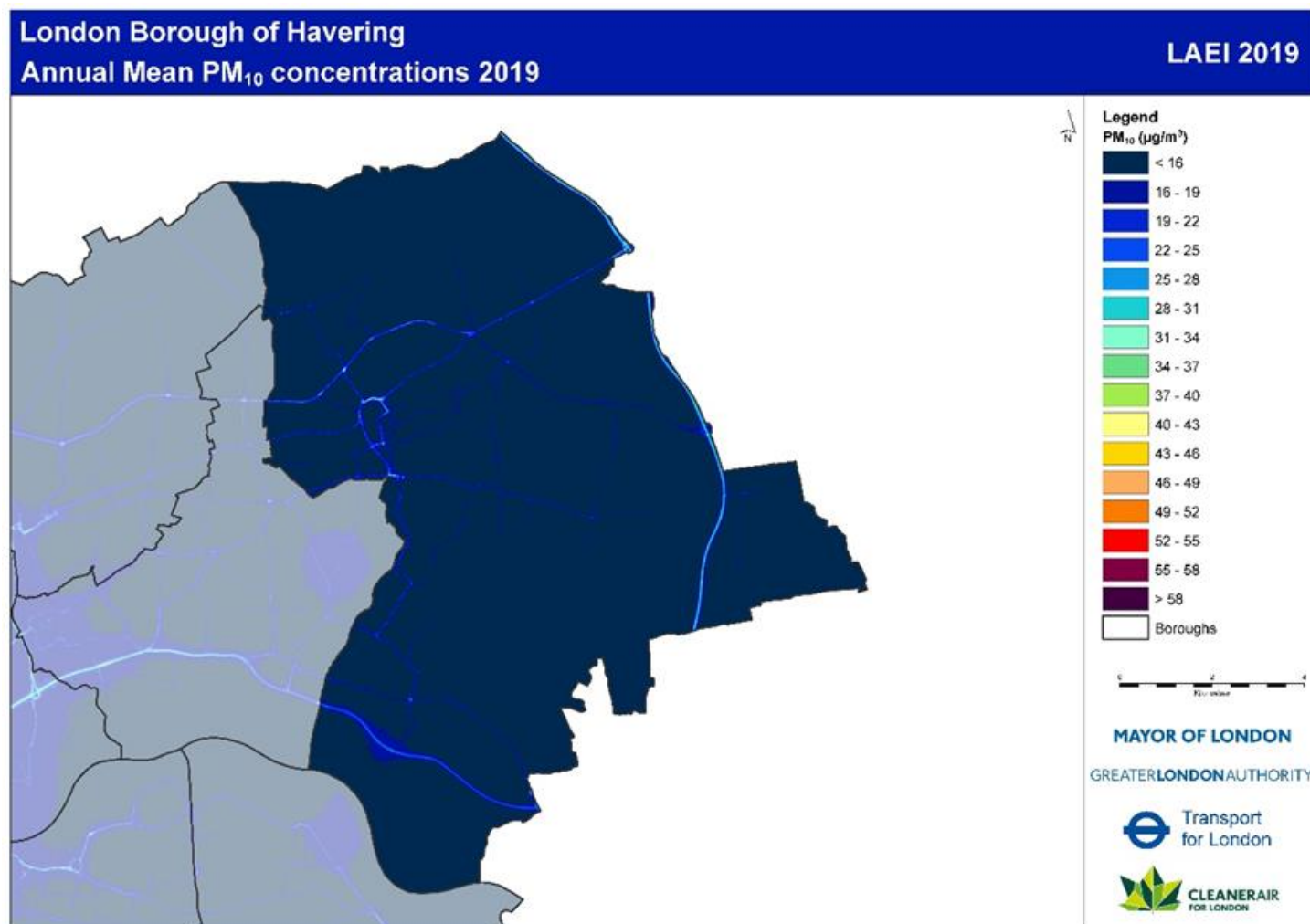


Figure 2 indicates that the majority of Havering in 2019 met the National Air Quality Objective of 40µg/m<sup>3</sup> for NO<sub>2</sub>. There were exceedances of this objective at locations along key transport routes (e.g. A13, A12, M25, Romford Ring Road, A1306 etc.), which have been linked to emissions from road transport (cars, buses, HGVs), where heavy traffic is expected.

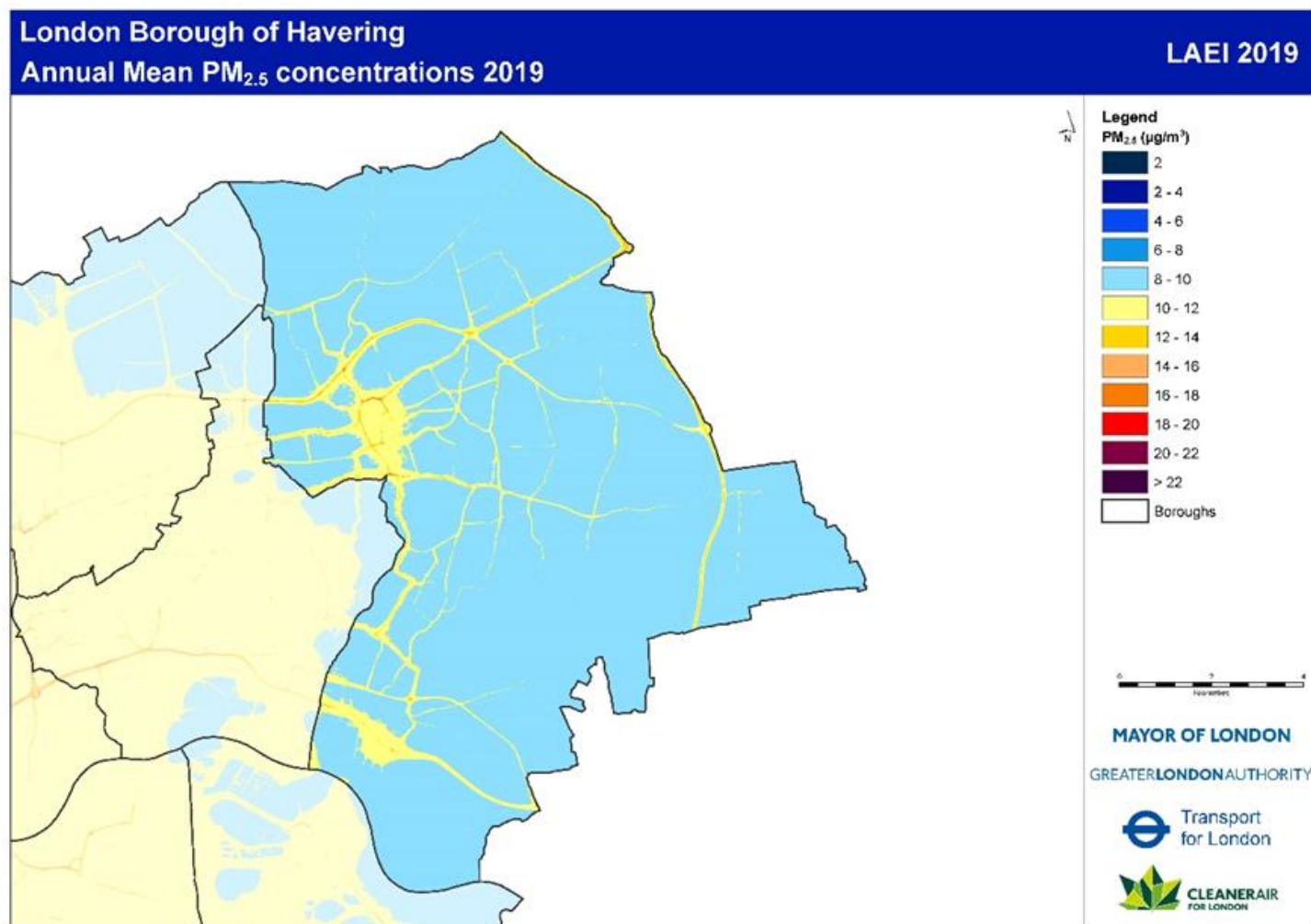


Figure 3. Modelled Map of Annual Mean PM<sub>10</sub> in Havering (from LAEI 2019)



The PM<sub>10</sub> modelling suggests that both PM<sub>10</sub> long and short-term objectives were met in 2019 and that the borough's PM<sub>10</sub> levels are well below the current legal limits in the UK. Similarly, as shown in Figure 4, Havering meets the current national objective for PM<sub>2.5</sub>, but as mentioned above we remain committed to working towards further reduction of the levels of particulates across the borough.

Figure 4. Modelled Map of Annual Mean PM<sub>2.5</sub> in Havering (from LAEI 2019)



## **Havering's Air Quality Monitoring Network**

As part of its statutory duties under LLAQM, Havering is required to monitor the local air quality within its boundaries. Currently Havering has an extensive monitoring network consisting of 66 diffusion tubes at 46 locations, two continuous monitoring stations in Romford and in Rainham and 6 Breathe London sensors (sponsored by the Mayor of London). 7 additional BL sensors have been installed at Lauder's Lane, Rainham for a limited period for a particular project. This network provides monthly, daily, and real time readings of NO<sub>2</sub>, PM<sub>10</sub> and PM<sub>2.5</sub>, which are considered representative of actual air pollution levels in the borough. Havering's monitoring sites are included in Appendix B.

As detailed in Havering's latest Air Quality Annual Status Report, the NO<sub>2</sub> annual means have been consistently decreasing for most of the monitoring sites since 2017. In total five sites in 2021 exceeded the NO<sub>2</sub> annual mean objective (two of which only marginally), comparing to sixteen in 2017. In agreement with the modelled maps presented in the previous section, the PM<sub>10</sub> and PM<sub>2.5</sub> monitoring data suggest that Havering meets all current UK objectives for these pollutants.

## **Sources of Air Pollution**

Pollution in Havering comes from a variety of sources. This includes pollution from sources outside of the borough, and, in the case of particulate matter, a considerable proportion of this comes from outside of London and even the UK.

Of the pollution that originates in the borough the main sources of NO<sub>x</sub> are road vehicles (approximately 75% of the total in 2019), industrial / commercial heat and power generation (11.0%) and domestic heat and power generation (7%). In terms of vehicle types, the primary source are diesel vehicles, with diesel cars and LGVs being responsible for the 68% of the pollution emitted from road transport. Further details of the NO<sub>x</sub> emission sources are provided in Figure 5.

From reviewing the NO<sub>2</sub> annual means for the past seven years (2015 - 2021), the following observations have been made:

Of the 36 sites for which data are available for the past seven years, the NO<sub>2</sub> annual means have been consistently decreasing for 17 sites since 2017. For 32 of the 36 sites the NO<sub>2</sub> annual means in 2021 are at least 15% less than the 2015 levels.

The number of sites exceeding the annual mean objective remained low in 2021, although it increased by one from 2020. In total five sites in 2021 exceeded the objective (two of which only marginally), comparing to sixteen in 2017.

No significant trend (positive or negative) in PM<sub>10</sub> levels has been identified at either site over the 7-year period. PM<sub>10</sub> levels are well below the annual mean objective of 40 µg/m<sup>3</sup>.

Annual Mean PM<sub>2.5</sub> concentrations remain at a steady level over the 7-year period and well below the annual mean AQO of 25 µg/m<sup>3</sup>.

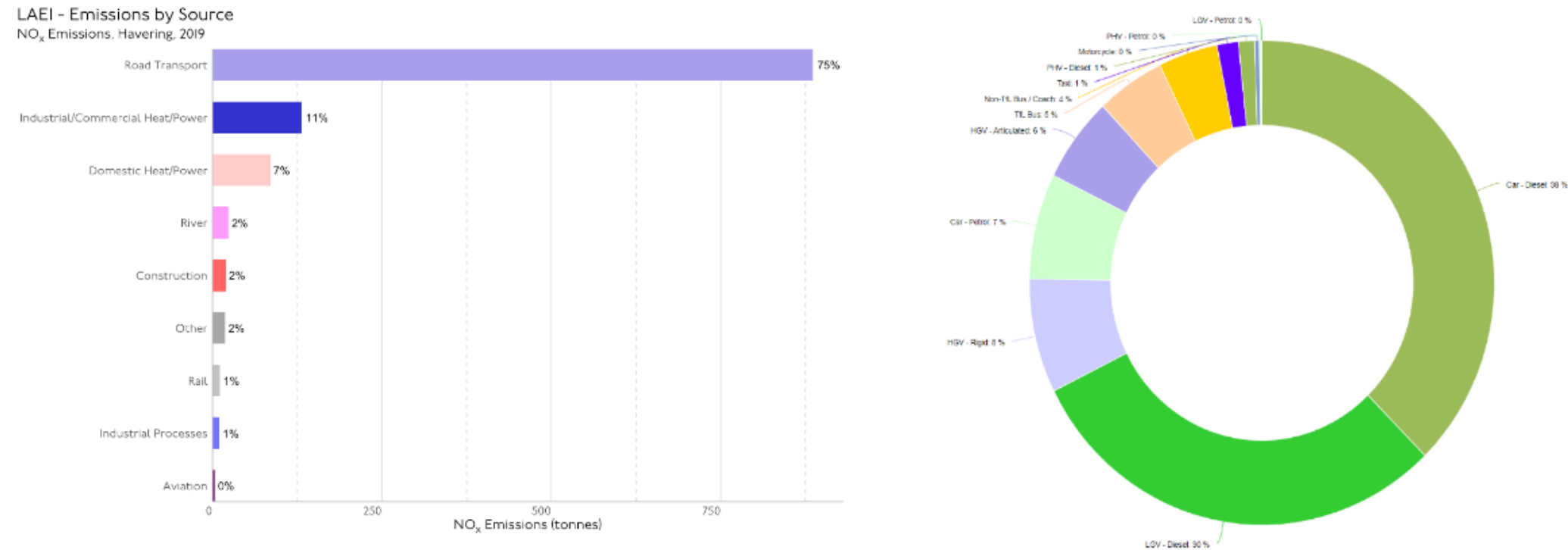
Given that for a second consecutive year, the NO<sub>2</sub> annual means at most of the sites remained at lower levels to those in previous years, no positive or negative trend has been identified in PM<sub>10</sub> or PM<sub>2.5</sub>, it can be assumed that the 2020 and 2021 data are representative of long-term trends and that air quality has been improving in the borough. However, the impact of Covid-19 restrictions on air quality over these years is still uncertain and, therefore, data in the following years will be needed, to be able to confirm this assumption.

More local concerns have been raised regarding Arnolds Field, Launders Lane, in Rainham. This is a privately owned old landfill site, which was restored with a simple soil cover layer in the 1970s. It has since been subject to the illegal deposit of about 50,000 tonnes of waste which occurred in the early 2010s, and was subject to enforcement action by the Environment Agency in 2017.

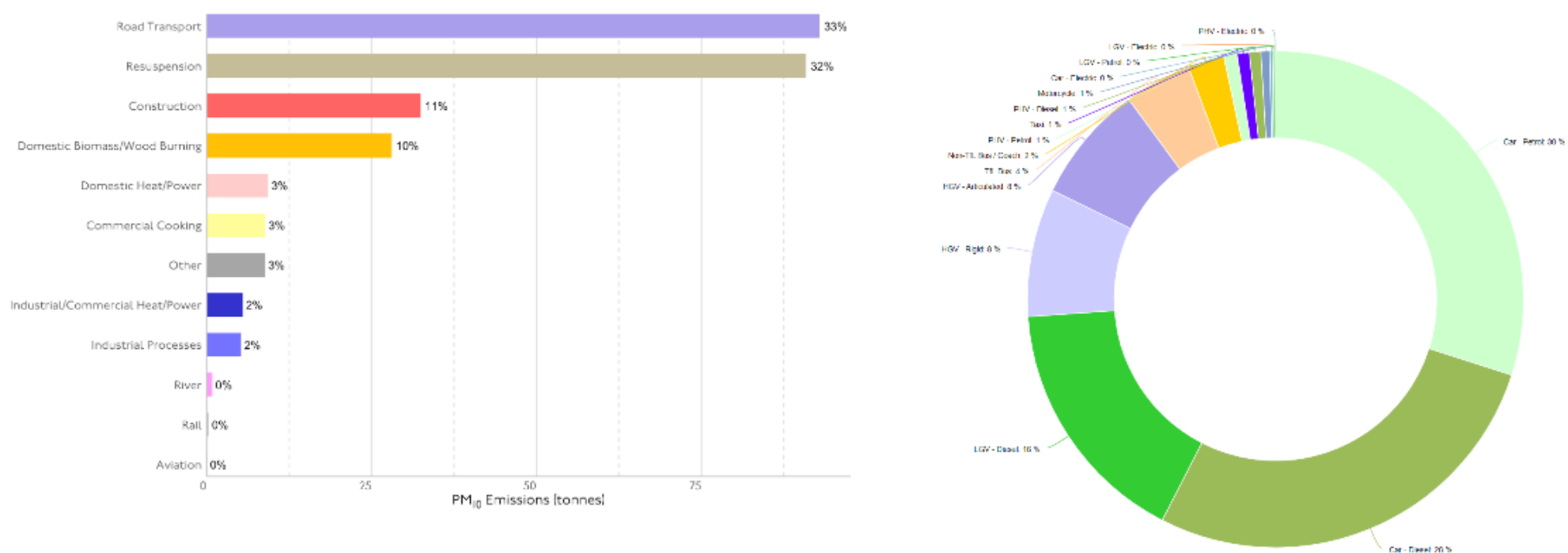
Due to the decomposition of waste and hotter weather conditions in the summer months, fires have been occurring occur within the buried waste below the surface of the land. Since 2019, there has been an increase in fires in the summer months, with a spike in fires in 2022. Concern has been raised locally regarding the impact on air quality and health from these incidents. The Council has commissioned air quality monitoring in nearby residential areas, looking at levels of PMs and NO<sub>2</sub> as well as a specific study around a larger species of pollutants. Monitoring will continue for as long as necessary to investigate the risk of harm to residents' health being caused by the fires until the cause of the fires has been dealt with.

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Figure 5. NOx Emissions by source and vehicle type in Havering (from 2019 LAEI)



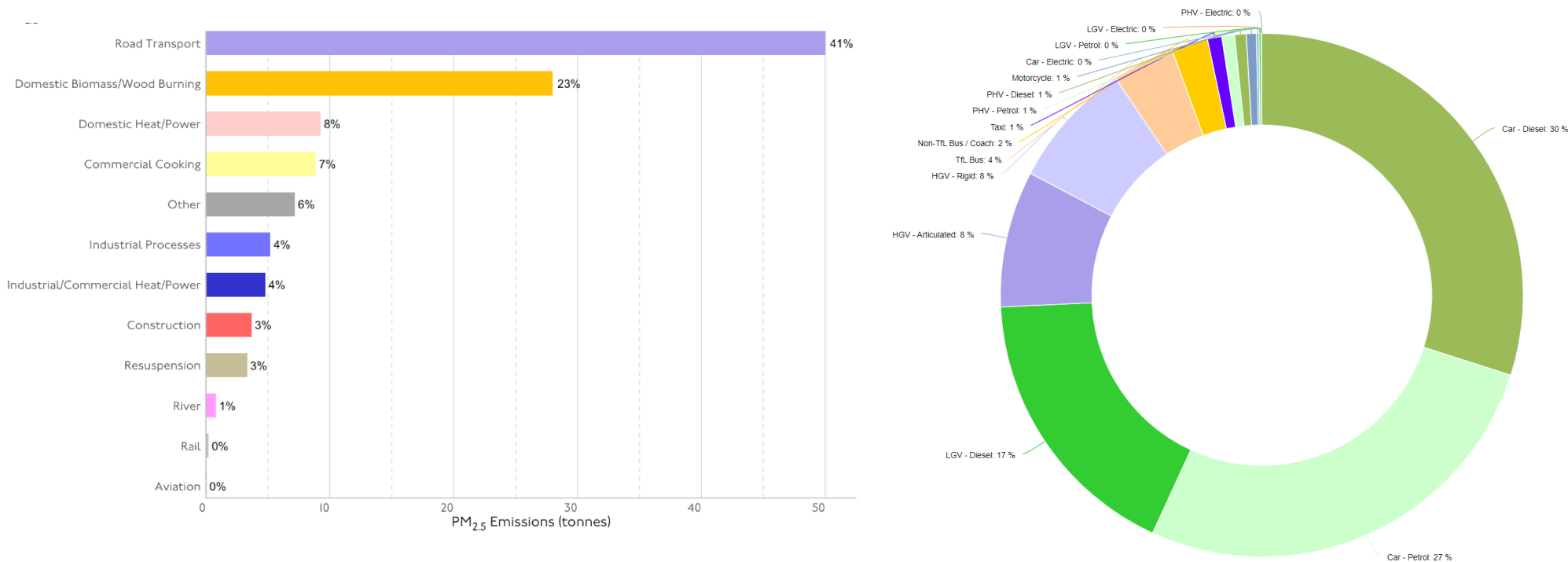
**Figure 6. PM<sub>10</sub> Emissions by source and vehicle type in Havering (from 2019 LAEI)**



As shown in Figure 6, the main sources of PM<sub>10</sub> are road vehicles (approximately 33% of the total in 2019), resuspension – i.e. disturbed particulates – (32%), construction (11%) and domestic wood-burning (10%). Looking at the vehicle types, petrol and diesel cars produce similar levels of PM<sub>10</sub> which in total constitute 58% of the road transport emissions.



**Figure 7. PM<sub>2.5</sub> Emissions by source and vehicle type in Havering (from 2019 LAEI)**



Similarly, the main sources of PM<sub>2.5</sub> are road vehicles (approximately 41% of the total in 2019) domestic wood-burning (23%), commercial cooking (7%), and various other industrial and commercial processes, including heat and power generation, construction, and waste. Petrol and diesel cars together are again the biggest PM<sub>2.5</sub> contributor, with diesel LGVs also contributing 17% of the total road transport emissions.

## **Havering's Air Quality Priorities**

### **Regional and Local Policies**

This Plan has been developed in the context of several plans and strategies produced by the Mayor of London and Havering Council itself. These include:

- The London Plan, which provides the overall planning framework for London and the Havering Local Plan, which sets out the Mayor of London planning policies for sustainable and inclusive growth, including the delivery of new housing and affordable housing for local people, essential infrastructure, economic development, appropriate design standards, and addresses the implications of climate change.
- The Mayor's Transport Strategy, 2018, revised in 2022, which sets out a comprehensive approach to the transport needs of London, emphasising, among other things, a 'Healthy Streets' approach, active travel approaches, including walking and cycling and reduced dependence on private vehicles, the reduction of carbon and other particulate emissions, in particular diesel emissions from vehicles and the expansion of the ULEZ zone to outer London authorities.
- The Mayor's Environment Strategy, 2018, which contains chapters on air quality, green infrastructure and adapting to climate change that are consistent with the proposed approach and actions contained in the present Plan.
- Havering's Local Plan, which sets out the Council's aims, objectives and planning policies for the sustainable development of the borough - including the broad locations in Havering where it wishes to see future housing, employment, retail, leisure, transport, community services and other types of development.
- Havering's Local Implementation Plan (LIP3), which sets out Havering's strategy for implementing the Mayor of London's Transport Strategy at the local level.
- The Havering Climate Change Action Plan (CCAP), which was agreed by the Council in 2021, and provides an overarching framework for addressing climate change in the borough. Several of the themes of the CCAP are consistent with the objectives and actions of the Air Quality Action Plan. These include the improvement of energy efficiency in the borough's residential and commercial buildings, the reduction of emissions from gas boilers, seeking to ensure air quality neutrality for new infrastructure, enforcing smoke control in the borough, planting greenery in town centres and other pollution hotspots and working with local businesses to improve air quality and health.
- The Havering Health and Wellbeing Board Joint Health and Wellbeing Strategy, 2019/20 – 2023/24 and Joint Strategic Needs Assessment Profile. The latter contains the following recommendation: 'Work together to minimise the direct contribution of health and social care services to air pollution; put in place the infrastructure/encourage residents to switch to electric vehicles on public transport, or better still, walk and cycle, choosing routes that minimise their exposure.'

## **Air Quality Work Delivered as part of AQAP 2018-2023**

Most of the actions of the 2018-23 Plan were delivered successfully, despite the restrictions and budgetary impact of the Covid-19 pandemic. 34 of the 40 actions in total were either completed, as discrete projects, or progressed, as continuous/ongoing work. One constraint on delivering the Plan was the reduction of TfL Local Implementation Plan (LIP) funding, due to the major reduction in TfL's income during the Covid-19 pandemic. This had a particular impact on planned initiatives relating to transportation.

A summary of our air quality work under the AQAP 2018-2023 are provided below.

### **Action Policy 1: Air Quality Monitoring and Modelling**

- We introduced an air quality predictive modelling tool, created for us by King's College London, to support the current monitoring network (Action 1.1)
- We carried out real-time air quality measurements outside schools, as part of air quality publicity campaigns and to encourage walking to school. (Action 1.2)
- We are commissioning a further PM2.5 monitor at the Romford continuous air quality monitoring station, which has been financed by S106 funding. (Action 1.4)
- We expanded our diffusion tube network by six additional diffusion tube monitoring sites there are now 46 sites in total, which provide accurate information about air quality across the borough. We have also undertaken additional monitoring with portable devices (Action 1.4)

### **Action Policy 2: Public Health and Awareness, to Encourage Smarter Travel**

- Active walking/over 50s forum was undertaken (Action 2.1)
- 'Miles the Mole', the borough's air quality champion and educational prop has visited all primary schools in the borough, via Theatre in Education and continued to raise awareness of children, parents, and school staff around air quality. (Action 2.2)
- We continued the successful work with schools in Havering, so that they can maintain active School Travel Plans and report their activities annually, via the Transport for London STARS (Sustainable Travel: Active, Responsible, Safe) Accreditation Programme website. In 2021, 47 schools out of 85 were accredited under the STARS scheme. 40 of these were at the highest level "Gold." Promotion of STARS is ongoing, with around 60 schools engaged with the programme. (Action 2.5)
- We continued to support the airTEXT project and promote it at all schools and sustainable transport events. We also ensure that airTEXT is promoted through Havering's social media platforms a few times per year, particularly in winter, and via our website. (Action 2.7)
- We continued raising awareness of businesses and offered workplace grants to large employers to encourage staff to walk, cycle and use public transport. (Action 2.12)

### **Action Policy 3: Reducing Emissions from Buildings and Developments**

- We reviewed the Council's Planning policies, to ensure that new developments in the borough meet the regional and local air quality policy requirements, such as for example, being air quality neutral in terms of building and transport emissions (Actions 3.6)

- We have adopted and implemented planning controls on CHP/Biomass systems in line with the London Plan (Action 3.3)
- We continued improving the energy efficiency of the Council's housing stock. In February 2022, the Council was awarded a Social Housing Decarbonisation Fund grant of £1.27M, which will be enhanced by £1.5M of Council resources to bring an expected 133 properties up to Energy Performance Certificate (EPC) Level C, with the additional benefits of reduced fuel bills and improvements in comfort and air quality for residents. (Action 3.5)
- We continued investigating chimney smoke complaints, as a priority to determine if authorised fuels are being used by residents and raised awareness around the rules and best practice of indoor burning and through our social media platforms and our website. (Action 3.7)
- Continued to require the use of Non-Road Mobile Machinery for developments and partnering with the LB Merton regarding inspections. (Action 3.8)
- We continued to ensure that all new developments are air quality neutral as part of the planning consultation process. (Action 3.4)
- Continue to deliver sustainable travel infrastructure in the Romford and Beam Park housing zones to ensure residents are provided with other means of travel than cars. (Action 3.10)

#### Action Policy 4 Borough Fleet Actions

- We continued exploring switching fossil-fuelled vehicles to electric and looking at infrastructure to improve charging points. The council is also providing smarter driver training to reduce idling of council vehicles. (Action 4.4)

#### Action policy 5 Localised Solutions

- We planted trees at several pollution hot spots within the borough, such as Rush Green Road, Roneo Corner, Romford Ring Road, and Rainham Village, as well as a boundary fence planting at the Mawney Foundation School. (Action 4.8)
- The Council is still seeking funding to implement low emission neighbourhoods. (Action 4.10)

#### Action policy 6 Cleaner Transport

- The council continues to raise awareness on idling of cars and continues to organise events and workshops. (Action 2.2 and 2.5)
- Charges for parking fees is ongoing, which may drive a reduction in the use of private vehicles and provide an uptake on more sustainable modes of transport. (Action 4.6)
- The provision of on and off street electric vehicle charging points across the borough where demand is identified is ongoing. (Action 4.5)

#### Additional actions with air quality benefits

- We have successfully implemented a School Streets Scheme at 3 locations and another 10 schools (8 locations) have been approved as part of the expansion of the School Streets Scheme through experimental Traffic Management Orders (TMOs).
- Three walking zone maps have been launched for three of Havering's primary schools; Drapers Pyrigo, Harold Wood, and Branfil Primary School. The maps encourage a more active and healthier lifestyle and aim to reduce traffic and congestion outside the school and towards.

- As part of the London-wide Idling Action project, we have actively raised awareness around the negative impacts from engine idling and launched 11 anti-idling events outside schools between 2019 and 2022. We have also carried out several workshops at schools, as well as to the Council's fleet drivers and members of the public.

Some of the actions within the 2018-23 AQAP were partly implemented or not implemented. Certain initiatives were affected adversely by the Covid-19 pandemic and/or the resulting reduction in Transport for London's (TfL) income and investment plans. For example:

- No progress was made in 2020 and 2021 on the proposal to work with TfL to commission a cross-borough bus rapid transit study, which would include looking at options for improving access to the London Riverside BID. Although a consultation is ongoing at present on changes to TfL bus routes. The continuation of the overall project will depend on the ability of TfL to support it financially.
- Havering decided not to take forward the plan for a Council-run Car Club programme, as part of an action to investigate the feasibility of introducing Car Clubs and associated facilities in the borough. However, there are currently some car clubs operating around new developments, initiated by the developers.
- It was proposed to create Supplementary Planning Guidance relating to air quality, to enable developers to assess, reduce or mitigate the impact of emissions from new developments in Havering. Draft Guidance was produced but could not be progressed until Havering's Local Plan had been adopted. This action is being taken forward in this AQAP.
- While some design work has been undertaken on Romford Ring Road - one of the borough's most polluted areas - progress has been slowed, due to TfL not being able to provide further funding to support the scheme, as of 2021. As of late 2021, there was uncertainty concerning the delivery of the proposed Beam Park Station, after the Department for Transport (DfT) advised that it has not approved it. Furthermore, it has not been possible to implement the proposed Beam Parkway Scheme, which will convert the A1306 into a residential scale street, along with a 2km long bi-directional cycleway on the southern side and the addition of infrastructure. This is due to TfL advising the Council that it is not able to provide grant funding to the scheme because of its general financial situation.
- The proposal to investigate the feasibility of introducing dedicated drop-off zones outside all schools for buses & coaches was investigated but not followed through, as the Council's Highways and Parking Services advised that the existing Keep Clear zones outside all schools must remain in place.
- The action to review parking charges policy, to discourage people to use their cars on certain occasions and therefore reduce emissions, was not implemented. This action will be considered again, as part of this Plan.

## **AQAP 2025-2030 Havering Priorities**

In this Plan we have adopted nine priorities for improving air quality in Havering. These reflect those identified by the Mayor of London as the most effective ways of tackling exposure and/or emissions. In addition, we are seeking to address 16 other activity areas identified by the Greater London Authority as being important for improving air quality. In each case, we have taken the action areas of the Mayor and the GLA and identified local actions which we will seek to implement in Havering to contribute not only to improved air quality within the borough, but within London and the UK more widely.

Havering's top air quality improvement priorities are as follows:

- Ensure enforcement of NRMM air quality policies.

These measures aim to minimise emissions from NRMM at construction sites. These include mobile machines and transportable industrial equipment or vehicles, which are fitted with an internal combustion engine and not intended for transporting goods or passengers on roads. Action includes two parts; one is to ensure that requirements regarding NRMM are imposed through appropriate planning conditions, and the second part is to support the London-wide NRMM scheme, which includes on-site physical checks, to make sure that all requirements are being met.

- Promote and enforce the Smoke Control Area.

As the entire borough has been declared a Smoke Control Area, we will seek to investigate and address 100% of smoke complaints, as part of our duties under the Clean Air Act 1993 and the Environment Act 2021. We will raise awareness around indoor burning, in liaison with our Communications Team, to inform people of the legislation requirements and use authorised smokeless fuels and/or exempt appliances.

- Promote and deliver energy efficiency and energy supply retrofitting projects to Council's housing stock and Council-owned workplaces.

Promoting and delivering energy efficiency and energy supply retrofitting projects is particularly important because gas boilers are the second largest individual source of NO<sub>x</sub> in London. As the Council is a major landlord and property user, we are committed to upgrading our dwelling stock and administrative buildings. As part of Actions, we will detail how we will increase the energy performance of the Council's housing stock and corporate sites, through a delivery programme and an Energy Management Plan.

- Support and promote pollution alert services, such as Airtext and the Mayor of London alert service.

Direct alert services, such as AirTEXT, are not only crucial to people whose health is at risk from inferior quality air, they are also important in raising awareness of poor air quality and promoting positive behaviour change among the local population. Havering has signed up to provide information on air pollution episodes through the AirTEXT software via SMS and through the Council's website. Havering's Communication team also puts out alerts on social media when it is notified of pollution episodes by Imperial College.

- Raise awareness and aim to improve air quality in and around schools.

Children and young people are particularly susceptible to the negative health impacts of air pollution. In this Plan, we will continue to deliver an Air Quality Education Programme in schools, using its air quality champion and educational prop, Miles the Mole. We will also continue to work with schools to reduce the number of pupils travelling to school by road vehicle, via the TfL STARS (Sustainable Travel: Active, Responsible, Safe) accredited travel planning programme. Furthermore, we aim to continue the successful work of the Idling Action project and continue to carry out awareness raising anti-idling events and anti-idling enforcement where necessary. Finally, we will deliver a rolling School Streets programme across the borough, aiming to increase road safety, as well as to improve local air quality around schools.

- Reduce emissions from Council fleets.

Reducing emissions from its fleet of vehicles is one of the most important steps to reduce air pollution that the Council can take as an individual organisation. This includes investing in ultra-low emission vehicles and training drivers to minimise emissions through more efficient driving styles. Over the life of this Plan, we will continue to increase the number of Battery Electric Vehicles (BEVs) in its fleet and, where necessary, invest in more vehicle charging facilities. We will also continue to provide Smarter Driver Training to all vocational drivers of the Council's fleet vehicles, which will include advice on anti-idling.

- Regular temporary Car Free Days and pedestrianisation scheme.

Temporary Car Free Days and pedestrianisation schemes raise awareness but can also lead to behaviour changes, such as greater use of public transport and zero pollution modes of transportation, such as cycling and walking. Whilst there is not a specific action in the current Plan, we will consider the scope for further opportunities to improve the safety of pedestrians and extend pedestrianisation schemes, where appropriate.



- Installation of Ultra-low Emission Vehicle (ULEV) infrastructure (electric vehicle charging points, rapid electric vehicle charging point and hydrogen refuelling stations).

The installation of Ultra-low Emission Vehicle (ULEV) infrastructure is crucial not only for its immediate positive effects on air pollution, but also from the point of view of generating demand for less polluting vehicles, by making them a viable option for more local people, notably those without garages and driveways for whom on-street charging is essential. The Council will continue to develop electric vehicle charging infrastructure across the borough, by requiring that residential charging points be included in new developments, where demand for these is envisaged, and by securing grant funding for investment in charging points in other areas of the borough.

- Provision of infrastructure to support walking and cycling.

The Mayor's Transport Strategy, 2018<sup>8</sup> (revised in 2022), sets out the aim that by 2041, some 80% of all trips in London should be made on foot, by cycle or by using public transport. The Elizabeth Line (Crossrail) will significantly improve Havering residents' ability to travel into central London and beyond. In addition, the Council will continue to lobby for improved bus services in the borough. We will actively promote walking and cycling within the borough. One of the actions within the current Plan is to develop and maintain a Walking and Cycling Strategy, setting out long terms aims and aspirations for delivering walking and cycling infrastructure across the borough. We will work with voluntary and community sector organisations, including the Over 50s Forum, to form a walking club and organise led rides. To promote and facilitate cycling, we will also deliver an annual cycle parking programme, targeting residential estates and community facilities.

We also recognise that there are many air quality policy areas and associated funding that are outside of the Council's direct control. These include vehicle emission standards, national vehicle taxation policy, grant regimes to tackle issues such as energy efficiency in buildings and investment in modern transport infrastructure (such as charging points for electric vehicles), as well as public services, like taxis and buses. In conjunction with our statutory and non-statutory partners, we will continue to work with, and lobby, regional and central government on policies and issues beyond Havering's direct control that will have a beneficial impact on air quality in Havering.

- Havering Climate Change Action Plan (HCCAP)

Many of the actions being delivered through the Havering Climate Change Action Plan (HCCAP) are equally beneficial to reducing air pollution in the borough. The key aim of the HCCAP is for the Council to be carbon neutral by 2040 or sooner.

The HCCAP sets out a framework for collective action on climate change to achieve the Council's target of becoming carbon neutral by 2040 or sooner. In doing so, it seeks to harness the significant benefits of climate action to the health and wellbeing of our communities, economy and natural environment. The action plan aims to accelerate carbon emission reductions across the Borough through a comprehensive set of actions. The work streams and proposed actions reflect views we have gathered from our engagement with residents, community representatives, local businesses, the voluntary sector and other stakeholders.

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<sup>8</sup> Mayor's Transport Strategy, 2018. <https://tfl.gov.uk/corporate/about-tfl/the-mayors-transport-strategy>

The action plan seeks to respond ambitiously to the climate emergency in a manner that is inclusive, holistic, credible and innovative. We do not have all the solutions yet. As such, this is intended to be a dynamic document that will need to evolve rapidly as we broaden our engagement, learn from early implementation, and improve our evidence on how to reduce emissions most effectively in partnership with stakeholders across the borough. Meeting our carbon neutral target is a challenge we must rise to, not only because we must fulfil our statutory duties, but because we have a responsibility to future generations for leaving the environment in a better way than when we inherited it.

Relevant HCCAP actions have been added as Measures in Table 5.1

## Development and Implementation of Havering's AQAP

To be added when consultation is complete

### Consultation and Stakeholder Engagement

In developing/updating the action plan we have worked with other local authorities, agencies, businesses, and the local community to improve local air quality. Schedule 11 of the Environment Act 1995 requires local authorities to consult the bodies listed in Table 4.1. In addition, we will have undertaken the following stakeholder engagement.

- Consultation via the Council's Website and social media channels
- Articles in local press
- Copies of draft AQAP and questionnaires at the Town Hall, libraries, and other public locations

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

**Table 4.1 Consultation Undertaken**

| Yes/No | Consultee  |
|--------|--|
| Yes    | The Environment Agency   |
| Yes    | Transport for London and the Mayor of London (who will provide a joint response)     |
| Yes    | All neighbouring local authorities   |
| Yes    | Other public authorities, as considered appropriate                                  |
| Yes    | Bodies representing local business interests and other organisations, as appropriate |

### AQAP Working Group

This Plan was developed with the continuous support of Havering's AQAP Working Group (WG). The WG consisted of senior officers from several Council Services (e.g. Planning, Transport Planning, Public Health, Housing etc.), which are responsible for the implementation of its actions. The WG meet bi-monthly to discuss air quality matters and report progress of the AQAP. The group will be reconvened to support the progress of this plan going forward.

## **Action Plan Tables**

Table 5.1 shows the main actions Havering proposes to take over the next five years to improve air quality in the borough. It contains:

- a list of the actions that form part of the Plan;
- the Departments/organisations which will deliver each action;
- the estimated cost to the Council;
- the expected benefit in terms of emissions and concentration reductions;
- the timescale for implementation
- the outputs, targets, and Key Performance Indicators for each action.

The actions, below, have been grouped under the six themes:

- Air quality monitoring and modelling
- Reducing emissions from building and developments
- Public Health and awareness to encourage smarter travel
- Borough Fleet Actions
- Localised solutions
- Cleaner transport

**Table 5.1 Air Quality Action Plan**

| Action ID   | Action Name and Description   | Responsibility    | Cost<br><br><i>Very Low = &lt;£10K<br/>Low = £10-£50K;<br/>Medium = &gt;£50K &lt; £500K<br/>High = &gt;£500k)</i> | Expected impact on emissions/concentrations<br><br>Low<br>Medium<br>High  | Timescale for implementation<br><br>Short Term = 0-2 years;<br>Medium Term = 2-5 years;<br>Long Term = 5+ years;<br>Ongoing | Outputs, KPIs and Targets  |
|---|---|-------------------|---|---|---|--|
| <b>Theme 1: <i>Air Quality Monitoring and Modelling</i></b> |   |                   |   |   |   |  |
| 1.1   | Review monitoring network and consider expansion.   | Public Protection | Low   | No direct emissions/concentrations benefits, but critical to the understanding of concentrations and the impact of actions taken. | Medium Term   | Target: Review and assess air quality across the borough.<br><br>Target: Ensure the air quality monitoring network provides sufficient data to understand air quality in the borough and captures all pollution 'hot spots'. |
| 1.2   | Installation of a PM <sub>2.5</sub> monitor at the Romford continuous monitoring station. | Public Protection | Low   | No direct emissions/concentrations benefits, but critical to the understanding of concentrations and the impact of actions taken. | Short Term  | Target: Increase monitoring of fine particulate matter to a second, central location in the borough.<br><br>Output: PM <sub>2.5</sub> monitor installed  |

|     |   |                                 |          |   |             |   |
|-----|---|---------------------------------|----------|---|-------------|---|
| 1.3 | Undertake additional monitoring, with portable, continuous monitoring devices, as part of the Breathe London project.   | Public Protection/Public Health | Very Low | No direct emissions/concentrations benefits, but critical to the understanding of concentrations and the impact of actions taken. | Ongoing     | Target: Increase continuous monitoring, to understand better how pollutant concentrations fluctuate during the day at certain locations.  |
| 1.4 | Fulfil the borough's statutory duties under the LLAQM (e.g. regularly assessing the borough's air quality, submission of the Air Quality Annual Status Report, etc.). | Public Protection               | Very Low | No direct emissions/concentrations benefits, but critical to the understanding of concentrations and the impact of actions taken. | Ongoing     | Output: Collate, edit, and assess air quality monitoring data annually.<br><br>Output:<br><br>KPI: Submission of the Annual Status Report within the required period and update the Council's website, once approved. |
| 1.5 | Undertake air quality monitoring around Arnolds Field, Launders Lane, for PM2.5 and other pollutants using air quality nodes and other methods.                       | Public Protection/Public Health | Low      | Low   | Medium Term | Target: Ensure that emissions from fires are not causing significant harm to resident's health and causing breaches of relevant standards.  |

## **Theme 2: Reducing Emissions from Buildings and Developments**

|     |  |                                |  |   |                              |   |
|-----|--|--------------------------------|--|---|------------------------------|---|
| 2.1 | Ensure emissions from construction are minimised.  | Public Protection/<br>Planning | Very Low<br>Costs will be addressed as part of planning application process. | Medium/ High  | Ongoing                      | <p>100% of relevant planning applications will meet the Local Plan requirement to minimise adverse impacts during construction (Policy 33).</p> <p>KPI: Investigate 100% of complaints about dust from construction sites.</p> <p>KPI: 100% of proposed developments, which are assessed as 'low', 'medium' or 'high' risk in an air quality assessment in terms of construction emissions, will be required to have dust mitigation measures, through appropriate planning condition.</p> <p>KPI: 100% of proposed developments, which have been assessed as 'high' risk, in terms of construction emissions, will be required to undertake real-time PM monitoring.</p> |
| 2.2 | Create an Air Quality Supplementary Planning Document (SPD) and provide guidance on the implementation of the Local Plan policies, | Public Protection/<br>Planning | Very Low   | No direct emissions/<br>concentrations benefits, but important to help developers | Medium<br>Term/ Long<br>Term | <p>KPI: Creation of a Draft Air Quality SPD</p> <p>KPI: Produce a project plan for formal adoption.</p>   |

|     |  |                              |          |   |         |   |
|-----|--|------------------------------|----------|---|---------|---|
|     | which aim to improve air quality.  |                              |          | capture air quality early in the design process |         | Ensure that all measures to reduce the impact of developments on air quality are considered and, where possible, adopted in a consistent way within Havering.   |
| 2.3 | <p>Ensure enforcement of Non-Road Mobile Machinery (NRMM) air quality policies.</p> <p>i. Ensure appropriate planning conditions are attached to all planning decisions for relevant developments.</p> <p>ii. Support implementation of the London-wide NRMM scheme (LB Merton).</p> | Public Protection / Planning | Very Low | Medium  | Ongoing | <p>i. Target: 100% of relevant planning applications will demonstrate how the Non-Road Mobile Machinery Low Emission Zone will be complied with during demolition and construction.</p> <p>KPI: Appropriate planning conditions attached to all relevant planning applications.</p> <p>ii. Target: Maintain participation in the London-wide NRMM scheme and support implementation, as required.</p> <p>KPI: Keep records of the number of developments registered and compliant with NRMM requirements, and report annually</p> |
| 2.4 | Seek to minimise emissions from CHP/ biomass when assessing planning applications.   | Public Protection / Planning | Very Low | Medium  | Ongoing | KPI: 100% of relevant proposed developments with associated CHP/ biomass will be required to meet emission limits, through appropriate planning conditions.   |



|     |   |                              |  |        |         |   |
|-----|---|------------------------------|--|--------|---------|---|
|     |   |                              |  |        |         | KPI: 100% of relevant proposed biomass systems will be required to have mitigation measures, in relation to particulate matter emissions, through appropriate planning conditions.  |
| 2.5 | Ensure that all developments are air quality neutral, as part of the planning consultation. | Public Protection / Planning | Very Low   | Medium | Ongoing | <p>KPI: 100% of relevant developments are accompanied by air quality neutral assessment, prior to determination of the planning application.</p> <p>KPI: 100% of approved developments are air quality neutral, in terms of building and transport emissions, or are required to have mitigation measures, through appropriate planning condition(s).</p> |
| 2.6 | Ensure that large-scale developments in the borough meet Air Quality Positive requirements. | Public Protection/ Planning  | Very Low<br>Costs will be addressed as part of planning application process. | Medium | Ongoing | KPI: 100% of proposed large-scale developments subject to an Environmental Impact Assessment are accompanied by an Air Quality Positive Statement at masterplan (if applicable) and planning application stage, to improve air quality and reduce exposure to pollution.  |
| 2.7 | Ensure adequate, appropriate, and well-located green space                                  | Planning / Public Realm      | Very low   | Medium | Ongoing | 1. The Local Plan Update and Site-Specific Allocations Development Plan Document  |

|  |   |  |  |  |  |  |
|--|---|--|--|--|--|--|
|  | and infrastructure is included in new and existing developments |  |  |  |  | <p>will include policies that support green infrastructure, biodiversity, the urban greening factor, and tree planting.</p> <p>2. Urban Greening Factor (UGF) targets; biodiversity net gain; and habitat protection, enhancement, and creation, in all design codes approved as part of the planning application process.</p> <p>3. 100% of relevant planning applications will comply with Local Plan policies 29 (Green Infrastructure), 30 (Biodiversity and geodiversity), London Plan Policy G5 (Urban Greening) and will</p> <ul style="list-style-type: none"> <li>• Protect existing open space;</li> <li>• Provide new open space where possible;</li> <li>• Provide new green infrastructure and where applicable meet with Urban Greening Factor (UGF) targets.</li> </ul> |
|--|---|--|--|--|--|--|

|  |  |  |  |  |  |   |
|--|--|--|--|--|--|---|
|  |  |  |  |  |  | <ul style="list-style-type: none"> <li>• Provide tree lined streets and tree planting in suitable areas within new developments.</li> </ul> <p>4. Work with developers to maximise green spaces. Where appropriate, advise developers on the planting of appropriate trees and greening (e.g. green walls etc.), to mitigate the impacts of a development on air quality and/or reduce exposure to pollution.</p> <p>This action will be monitored using the following indicators:</p> <ol style="list-style-type: none"> <li>i. Net loss / gain of public open space and playing fields;</li> <li>ii. Changes in areas designated for their intrinsic environmental value; including sites of international, national, regional, sub-regional or local significance;</li> <li>iii. Percentage of major applications that: <ul style="list-style-type: none"> <li>• Meet or exceed the London Plan Urban Greening Factor target;</li> </ul> </li> </ol> |
|--|--|--|--|--|--|---|

|      |   |                              |  |        |         |  |
|------|---|------------------------------|--|--------|---------|--|
|      |   |                              |  |        |         | <ul style="list-style-type: none"> <li>• Provide at least 10% biodiversity net gain on the development site.</li> </ul>  |
| 2.8  | To consider the suitability of car free developments and parking standards in the most accessible parts of the borough, in line with Policy 24 (Parking Provision and Design) of Havering's Local Plan and the adopted London Plan. | Planning/ Transport Planning | Very Low   | Medium | Ongoing | All Planning Applications will be assessed against Local Plan Policy 24 (Parking Provision and Design).  |
| 2.9  | Installation of residential electric vehicle charging points on new developments  | Public Protection/ Planning  | Estimate of cost not available, as this is addressed as part of planning application process | Medium | Ongoing | <p>100% of planning applications that provide car parking in new developments will provide infrastructure for electric or other Ultra-Low Emission vehicles, in accordance with Local Plan Policy 24 and London Plan Policies T6 and T6.1.</p> <p>Local Plan Policy 24 will be monitored through the Annual Monitoring Report (AMR).</p> |
| 2.10 | Promote and enforce the Smoke Control Area to address the emissions from domestic fireplaces  | Public Protection            | Very Low   | Medium | Ongoing | <p>KPI: Investigate and address 100% of smoke complaints, as part of the statutory duties.</p> <p>KPI: Raise awareness around indoor and outdoor burning, in</p>   |

|      |   |                              |      |      |           |  |
|------|---|------------------------------|------|------|-----------|--|
|      | and industrial processes.   |                              |      |      |           | liaison with Communications Team, once a year, as a minimum.   |
| 2.11 | Carry out energy improvement and retrofitting programmes to Council's housing stock, using Council's budget, as well as maximising all appropriate external funding opportunities                           | Housing                      | High | High | Long Term | <p>Targets:</p> <ol style="list-style-type: none"> <li>1. Be carbon neutral by 2040</li> <li>2. Increase energy performance of the Council's housing stock, to achieve an average EPC of C or higher by 2030.</li> <li>3. Further targets to be confirmed once the delivery programme is available.</li> </ol> <p>Monitoring of the progress will be done via quarterly reports from the Keystone Asset Management database.</p> |
| 2.12 | Promote and deliver energy efficiency and energy supply retrofitting projects in council-owned workplaces through retrofit programmes such as Retrofit Accelerator and through borough carbon offset funds. | oneSource - Asset Management | High | High | Long Term | <p>KPI: Development and implementation of Energy Management Plan for the corporate sites.</p> <p>Reduced Scope 1 carbon emissions will result in the improvement of air quality.</p>   |

|      |   |   |          |        |            |  |
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| 2.13 | Introduce Heat Pumps into Havering Council corporate estate for decarbonisation of buildings  | oneSource - Asset Management                                  | High     | Medium | Long Term  | Output: Development and implementation of Heat Decarbonisation Plan for the borough.<br>Reduced Scope 1 carbon emissions will result in the improvement of air quality.  |
| 2.14 | Renewable Energy installation within LBH Corporate estate.  | oneSource - Asset Management                                  | High     | Medium | Long Term  | Target: Reduction in Scope 2 (electricity supplies from National Grid) which can be used for operating Heat Pumps as an alternative to gas heating systems.<br><br>New installations will be monitored and reported upon annually.   |
| 2.15 | Implement and monitor a Private Sector Leasing (PSL) – EPC Compliance Action Plan, to ensure that PSL stock meets the Minimum Energy Performance of Buildings bill for all Let properties to have an EPC grade C. | Housing Needs & Strategy Management, Public Protection, Comms | Very Low | Medium | Short Term | Targets:<br><br>1. Ensure all properties are compliant with EPC's.<br>2. Plan how information regarding the EPC changes will be communicated to landlords<br>3. Approach all landlords to commence communication about the government changes for EPC grading and upgrade of works to meet new energy efficiency standards.<br>4. Collate all data to breakdown information regarding all EPC's. |

|      |  |                                 |      |        |           |  |
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|      |  |                                 |      |        |           | <p>5. Establish which property requires grant funding to bring properties up to standard</p> <p>6. All new properties will be grade C and above.</p>   |
| 2.16 | <p>Deliver infrastructure to ensure that Romford, Rainham and Beam Park Housing Zones are accessible by means other than the car and that residents are provided with options to travel sustainably (including Romford Liveable Neighbourhoods, the Beam Parkway Major scheme, and Beam Park station). *</p> | Transport Planning/Regeneration | High | Medium | Long Term | <p>Delivery of Beam Parkway Major Scheme along A1306.</p> <p>Delivery of Romford Liveable Neighbourhoods scheme along west section of Romford ring road.</p> <p>Delivery of Beam Park Station and associated public transport connectivity.</p> <p>*These schemes are subject to external funding being made available to support these larger projects.</p> |

| Theme 3: <i>Public Health and Awareness to Encourage Smarter Travel</i> |   |               |                                      |   |         |   |
|---|---|---------------|--------------------------------------|---|---------|---|
| 3.1   | <p>Director of Public Health will continue to:</p> <ul style="list-style-type: none"> <li>include consideration of air quality in JSNA</li> <li>advise Health and Wellbeing Board on priorities for the joint Health and Wellbeing Strategy, based on JSNA</li> <li>ensure air quality continues to feature in the work programme of the Health Protection Forum</li> <li>promote awareness/ consideration of air quality through the Council's Health in all Policies Approach.</li> </ul> | Public Health | Resources provided within PH Service | No emissions/ concentrations benefits but critical in terms of understanding emissions and concentrations and the impact of action taken. | Ongoing | <p>Outputs:</p> <ul style="list-style-type: none"> <li>JSNA (produced annually)</li> <li>Health Protection Forum (regular meetings)</li> <li>Health in all Policies approach</li> </ul> |
| 3.2   | Public Health will continue to support the work of the Air Quality Working Group by:  | Public Health | Resources provided with PH Services  | No emissions/ concentrations benefits but critical in terms of understanding  | Ongoing | <p>Outputs:</p> <p>-Representation at Air Quality Working Group</p>   |



|     |  |                                       |     |  |            |   |
|-----|--|---------------------------------------|-----|--|------------|---|
|     | <ul style="list-style-type: none"> <li>advising on dashboard measures</li> <li>contributing public health advice</li> <li>promoting awareness of air quality issues/initiatives to local communities</li> <li>identifying external partners who can contribute to improving air quality in the borough and supporting the Group to develop an engagement plan with relevant partners.</li> </ul> |                                       |     | emissions and concentrations and the impact of action taken.   |            | <p>-In the event there are specific concerns regarding an issue of poor air quality, the DPH will chair any required meetings to investigate health impacts</p> <p>-Participation in School Streets scheme and provide advice as / when needed</p> <p>-Public Health will continue to promote and coordinate the Healthy Schools London and The Healthy Early Years London Programmes</p> |
| 3.3 | Produce an annual communications plan for air quality that provides a range of information to the public and other stakeholder on matters relating to air quality.   | Comms/ Public Protection (and others) | Low | No direct emissions/ concentrations benefits, but communications and the provision of information can lead to behavioural changes and the take-up of | Short Term | <p>Outputs will include:</p> <p>Transmission of air quality alerts via the Council's social media outlets.</p> <p>Publicity for Clean Air Day.</p> <p>Annual campaign on solid fuel burning.</p> <p>Publicity on anti-idling.</p>   |

|     |   |                    |          |   |         |  |
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|     |   |                    |          | opportunities such as grant funding, which can have a direct impact on air quality. |         | <p>Production of twice-yearly air quality updates.</p> <p>Production of information for local news media, as and when required.</p> <p>Health advice around the use of fireworks linked to community safety comms.</p> |
| 3.4 | Offer workplace grants to businesses for infrastructure (e.g. cycle parking, lockers, and showering facilities) that will encourage staff to walk, cycle and use public transport. *  | Transport Planning | Very low | Low   | Ongoing | <p>Successful award of five grants per years to workplaces across the borough.</p> <p>Clear demonstration of modal shift towards sustainable travel at workplaces where grants have bene awarded.</p>                  |
| 3.5 | Provide information and other support to the borough's businesses to enable them to take measures that will reduce air pollution, working in partnership with the Romford Town Centre and London Riverside Business Improvement Districts and other | Inclusive Growth   | Very low | Low   | Ongoing | <p>Production of quarterly briefings for businesses on air quality and climate change issues, including LoCity-sourced stories.</p>  |

|      |   |                                   |          |  |         |   |
|------|---|-----------------------------------|----------|--|---------|---|
|      | representative organisations.   |                                   |          |  |         |   |
| 3.6  | Promote Smarter Travel initiatives with businesses and encourage local businesses to adopt workplace travel plans.    | Transport Planning                | Very Low | Low  | Ongoing | Adoption of two workplace travel plans per year.  |
| 3.7  | Engage with Over 50s Forum to form a walking club and organise led rides. *   | Transport Planning                | Very Low | Very low   | Ongoing | Two Over 50s Forum-led rides to be delivered annually.  |
| 3.8  | Create an Active Travel Liaison Group to be held on a quarterly basis with Council officers and external stakeholders | Transport Planning                | Very Low | No direct emissions/ concentrations benefit but will support emission concentration reductions in the long term. | Ongoing | Active Travel Liaison Group to meet on a quarterly basis per annum.   |
| 3.9  | Continue to promote airTEXT to make sure vulnerable residents are aware of the tool and how to use it.                | Public Protection/ Communications | Very Low | No direct emissions/ concentrations benefits but critical to help reduce exposure.                               | Ongoing | Promote the app via existing air quality campaigns<br><br>Continue to fund the app software, so that residents can use it for free.<br><br>PP jointly with PH to promote the app (e.g. through Borough Partnership) |
| 3.10 | To put out alerts on social media when the Council is notified  | Public Protection/ Communications | Very Low | No direct emissions/ concentrations  | Ongoing | KPI: 100% of pollution episode forecasts received by Imperial College are   |

|      |  |                    |        |  |         |  |
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|      | of pollution episodes by Imperial College.   |                    |        | benefits but critical to help reduce exposure. |         | shared via the Council's social media.   |
| 3.11 | Successful delivery of annual Local Implementation Plan programme to deliver schemes that support the Healthy Streets agenda and provide options for people to travel sustainably. * | Transport Planning | High   | Medium   | Ongoing | <p>65% of residents walking, cycling, or using public transport by 2041.</p> <p>42% of residents doing at least 2x10 minutes of active travel a day (or a single block of 20 minutes or more).</p> <p>Reduction in PM<sub>10</sub> and PM<sub>2.5</sub> emissions (in tonnes from road-based transport in the borough</p> <p>Reduction in NO<sub>x</sub> emissions (in tonnes) from road transport within the borough.</p> |
| 3.12 | Continue to promote the TfL Travel for Life (Sustainable Travel: Active, Responsible, Safe) accredited travel planning programme with schools to reduce car use on school run.       | Transport Planning | Medium | Low  | Ongoing | <p>Ensure over 50% of Havering's schools are Travel For Life Accredited</p> <p>Ensure 90% of Accredited schools are at the highest (Gold) level.</p> <p>Ensure car use to/ from school does not increase above 23%</p>   |
| 3.13 | Deliver 'bikeability' training in schools  | Transport Planning | Medium | Low  | Ongoing | At least 1,000 pupils, to undertake levels 1, 2, or 3  |

|      |   |  |          |   |         |   |
|------|---|--|----------|---|---------|---|
|      | and to adults and families. *   |  |          |   |         | 'bikeability' training per annum.   |
| 3.14 | Work with statutory and non-statutory partners to influence policymakers at the regional and national levels to address air-quality and sustainability issues in Havering more effectively. | Corporate/Departmental responsibility dependant on issue | Very low | No direct emissions/ concentrations benefits, but lobbying can generate greater funding and actions by other agencies that have a beneficial impact on air quality in Havering. | Ongoing | Outputs, KPIs and Targets will vary depending on the issue, but are likely to include additional funding and investment in Havering on matters such as transport infrastructure, regeneration, and the retrofitting of buildings. |

#### Theme 4: Borough Fleet Actions

|     |  |                              |      |        |                   |   |
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| 4.1 | <p>To increase the number of Battery Electric Vehicles (BEVs) in the Council's fleet, including:</p> <ul style="list-style-type: none"> <li>Exploring switching fossil fuelled vehicles weighing 3.5 tons and less to BEVs &amp; Hybrid. (oneSource Transport Services)</li> <li>Reviewing the Council's infrastructure, and where necessary investing in vehicle charging facilities, to accommodate more BEVs, (oneSource Transport Services)</li> <li>Developing a plan to change the Council's other vehicles to a fully electric fleet over time, subject to the availability of</li> </ul> | oneSource Transport Services | High | High   | Medium Term       | Estimated reduction in fuel: 30% to >50% if this class category switches.   |
|     |  |                              | High | Medium | Long Term Ongoing | Estimated reduction in carbon, if supplies are Green Energy, base line TBC  |
|     |  |                              | High | High   | Long Term Ongoing | Estimated reduction in Fuel 50% to >75%, based on roll out of electric vehicles against monitored annual fuel usage |
|     |  |                              | Low  | Low    | Short Term        | Small reduction in fuel 1-3%  |

|     |  |                                 |                         |                           |                                   |  |
|-----|--|---------------------------------|-------------------------|---------------------------|-----------------------------------|--|
|     | <p>suitable vehicles. (oneSource Transport Services)</p> <ul style="list-style-type: none"> <li>• Provide Smarter Driver Training for all vocational drivers of the Council's fleet vehicles, which includes anti-idling.</li> </ul>   |                                 |                         |                           |                                   | Currently, 75% of the pool cars are electric.  |
| 4.2 | <p>We will work with our refuse collection contractor to:</p> <ul style="list-style-type: none"> <li>• Make a positive impact on environmental sustainability.</li> <li>• Reduce greenhouse gas (GHG) emissions from the operations of our services to work towards the achievement of the Mayor's Emissions Performance Standard (EPS) and the Havering Climate Action Plan, including</li> </ul> | <i>Waste and Recycling Team</i> | <p>High</p> <p>High</p> | <p>High</p> <p>Medium</p> | <p>Long Term</p> <p>Long Term</p> | <p>Maintain a FORS (Fleet Operator Recognition Scheme) Silver accreditation (or equivalent) and subsequent accreditations.</p> |

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|  | <p>ensuring all vehicles are ULEZ compliant, with a continual focus on emissions reductions, specifically CO2, NOx and PM10. This will include upholding relevant anti-idling policies.</p> <ul style="list-style-type: none"> <li>• Embrace technological change. This includes maximising the use of dust suppression technologies and electric vehicles, with the use renewable fuels and waste-derived sources such as biodiesel and HVO as a transitional measure where possible.</li> </ul> |  | <p>High</p> <p>High</p> | <p>Medium</p> <p>Medium</p> | <p>Long Term</p> <p>Long Term</p> |  |
|--|---|--|-------------------------|-----------------------------|-----------------------------------|--|



| Theme 5: Localised Solutions |   |                    |  |  |                               |   |
|------------------------------|---|--------------------|--|--|-------------------------------|---|
| 5.1                          | Replace any trees removed due to being dead/ dying/ dangerous/ diseased and plant another 250 trees in addition within the public highway or council-owned open spaces. | Public Realm       | Medium (£57,000 per annum for planting, plus up to £38,000 per annum for ongoing maintenance.) | Low (up to 5 tonnes of CO <sub>2</sub> per annum). | Medium Term (4-year project). | Outputs: Number of trees planted per year.<br><br>Target: A total of 1,000 trees to be planted over four years. |
| 5.2                          | Seek funding opportunities to implement Low Emission Neighbourhoods, where appropriate.   | Transport Planning | High   | Medium   | Long term                     | Successful funding application to deliver a Low Emission Neighbourhood within Havering.                         |

| Theme 6: Cleaner Transport |  |   |          |  |         |   |
|----------------------------|--|---|----------|--|---------|---|
| 6.1                        | Ensure that Transport and Air Quality, plans, policies, and projects are integrated, and that effective joint working takes place. | Transport Planning/<br>Public Protection/<br>Planning | Very Low | Medium   | Ongoing | <p>KPI: AQAP Working Group meetings attended by a Transport Planning Officer.</p> <p>KPI: Air quality risks are fully evaluated in all transport feasibility studies/ proposals.</p> <p>Local Plan Policy 33 – NO<sub>2</sub> levels at identified ‘hot-spots’ will be reported on through the Annual Monitoring Report (AMR).</p> <p>Local Plan Policy 23<br/>Transport connections will be reported on through the AMR.</p> |
| 6.2                        | Raise awareness around anti-idling (organise anti-idling events, carry out workshops etc.).  | Transport Planning/<br>Public Protection/<br>Comms    | Low      | Low in terms of emissions/<br>concentrations, but important, in terms of awareness raising | Ongoing | <p>Target: Hold at least 3 anti-idling events per year around schools.</p> <p>Target: Social media messaging at least twice a year.</p>   |
| 6.3                        | Educate motorists not to idle their vehicles unnecessarily and take enforcement action when appropriate.                           | Environmental Enforcement                             | Low      | Low overall, but medium in specific locations.   | Ongoing | <p>Attempt to engage with 50-100 motorists per annum. No target for fines or prosecutions, as main aim is to educate and promote behaviour change, but they will be monitored.</p>  |
| 6.4                        | Delivery of a rolling School Streets programme across  | Transport Planning/<br>Planning/                      | High     | Low  | Ongoing | <p>Rolling annual programme delivering at least six School Streets per year.</p>  |

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|     | the borough to improve safety outside the school gates for pedestrians and cyclists.   | Regeneration/<br>Highways |        |   |            |  |
| 6.5 | To deliver off- and on-street Electric Vehicle Charging Points across the borough, where demand is identified.   | Transport Planning        | Medium | Medium  | Ongoing    | Annual rolling programme of on- and off-street Electric Vehicle Charging Points to be delivered across the borough   |
| 6.6 | Develop and maintain a Walking and Cycling Strategy, setting out long terms aims and aspirations for delivering walking and cycling infrastructure across the borough. | Transport Planning        | Low    | No direct emissions/<br>concentrations benefit but will support emission concentration reductions in the long term. | Ongoing    | Output: Adopted Walking and Cycling Strategy.<br><br>KPI: Rolling delivery programme to implement six projects per year.   |
| 6.7 | Review parking fees and charges, to contribute to pollution emissions  | Parking                   | Low    | Low / Medium  | Short Term | Output: Revised parking fees and charges. It is expected that these will contribute to less car usage and therefore less emissions.<br><br>Progress of this action will be monitored through number of parking sessions booked and comparison with previous years. |
| 6.8 | Delivery of an annual cycle parking programme, targeting residential estates   | Transport Planning        | Low    | Very low  | Ongoing    | Delivery of 30 residential cycle lockers per annum.  |

|  |                           |  |  |  |  |  |
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|  | and community facilities. |  |  |  |  |  |
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| Theme 7: Climate Change Action Plan Actions |   |                  |        |             |         |   |
|---|---|------------------|--------|-------------|---------|---|
| 7.1   | Develop, seek funding and evaluate the feasibility of introducing a local heat network within Havering  | Inclusive Growth | Medium | Medium Term | Ongoing | Develop, seek funding and evaluate the feasibility of introducing a local heat network within Havering.   |
| 7.2   | Review criteria for constructions standards applicable to Council developments to increase environmental standards beyond those required by Building Regulations. | Building Control | Low    | Long Term   | Ongoing | Reviewed as standards improve.  |
| 7.3   | School decarbonisation projects   | Education        | Medium | Long Term   | Ongoing | Including:<br>PV at Suttons Primary School<br>School Energy Efficiency and Decarbonisation (SEED) project |
| 7.4   | Introduce a salary sacrifice electric car benefit scheme for staff.   | Human Resources  | Low    | Long Term   | Ongoing | Scheme available as a benefit to employees.   |

|     |   |                             |     |           |         |                                      |
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| 7.5 | Contract managers are trained to evaluate and act on the environmental provisions made as part of the contract process.         | Procurement                 | Low | Long Term | Ongoing | Training programme ongoing.          |
| 7.6 | Create a knowledge hub on the website on transport, housing, circular economy for staff and public so that ideas can be shared. | Insight Policy and Strategy | Low | Long Term | Ongoing | Being developed and will be updated. |
| 7.7 | Work with and advise the local NHS partners on their Active Travel Plans and monitor and report effectiveness.                  | Public Protection           | Low | Long Term | Ongoing | Meetings with NHS are ongoing.       |

## References

- [1] Environmental equity, air quality, socioeconomic status, and respiratory health, 2010.
- [2] Air quality and social deprivation in the UK: an environmental inequalities analysis, 2006.
- [3] LLAQM Policy and Technical Guidance. <https://www.london.gov.uk/what-we-do/environment/pollution-and-air-quality/working-boroughs>
- [4] [https://www.haveringdata.net/population-demographics/#/view-report/63aedd1d7fc44b8b4dffcd868e84eac/\\_iaFirstFeature/G3](https://www.haveringdata.net/population-demographics/#/view-report/63aedd1d7fc44b8b4dffcd868e84eac/_iaFirstFeature/G3)

**Appendix A**

**Response to Consultation**

**Table A.1 Summary of Responses to Consultation and Stakeholder Engagement on the AQAP**

| <b>Consultee</b> | <b>Category</b> | <b>Response</b> |
|------------------|-----------------|-----------------|
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## Appendix B

### Monitoring Sites Maps

