HARINGEY JSNA: FOCUS ON

AIR POLLUTION

FEBRUARY 2020

Poor air quality is a significant public health issue. The burden of air pollution in the UK in 2013 was estimated to be equivalent to approximately 28,000-36,000 deaths at typical ages and an associated loss of population life of 328,000-416,000 life years lost[1].

Air pollution in London is a public health crisis; each year it causes nearly 10,000 premature deaths, it widens inequalities by reducing the length and quality of life in the most vulnerable residents, including children, and costs the NHS up to £3.7 billion each year[2]. Currently, a third of Haringey's schools are located in areas with high concentrations of pollutants that are elevated and sometimes exceed EU air quality limits/UK Air Quality Strategy (AQS). Air pollution is caused when gases or solid particles are released into the air in large enough quantities to harm the health of people, animals, or plants. Pollution is a contributing factor in the onset of heart disease and cancer. Road transport is the most significant source of emissions in Haringey. Other sources include gas boilers, machinery and construction, and industrial processes.

Facts and figures

- In 2017, 6.7% of all cause adult mortality was attributable to human made PM2.5 air pollution in Haringey. This was similar to the London regional average of 6.5%[3].
- The highest concentrations of NO_2 which exceed the legal limits are found on the busiest main roads in the borough. However, pollution levels quickly reduce with distance from the pollution source.
- Air pollution has an impact on children living in deprived areas. In actual fact, the 20% most deprived areas in London had 8.6% more PM10 and 8.1% more NOx compared to the 20% least deprived areas[4].

Measures for reducing inequalities

- Encourage residents to walk or cycle to work and school wherever feasible and improve the design of highways to facilitate this.
- Review Haringey's parking policy and limit parking on congested high streets to improve bus journey times, reduce idling and improve accessibility for cyclists.
- Public realm improvements through a range of options including the installation of green roofs, tree planning schemes etc.

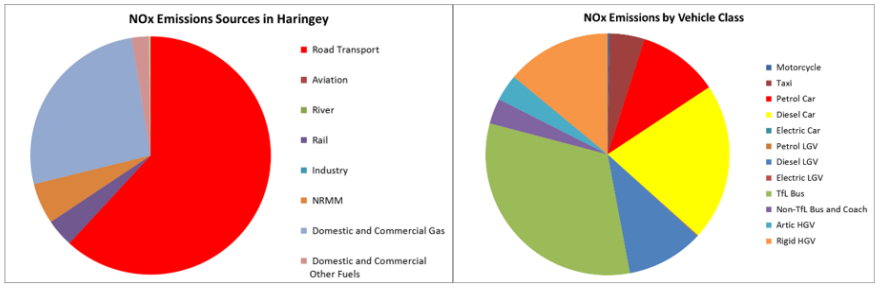
Population groups

- Poor air quality affects the most vulnerable people in society, particularly children and older people.
- Indoor air quality can affect both adults and children. Older adults in particularly are more vulnerable to air pollution due to the cumulative affect of breathing poor quality air during their lifetime.
- Air pollution is particularly harmful to people with Chronic Obstructive Pulmonary Disease (COPD) or asthma.

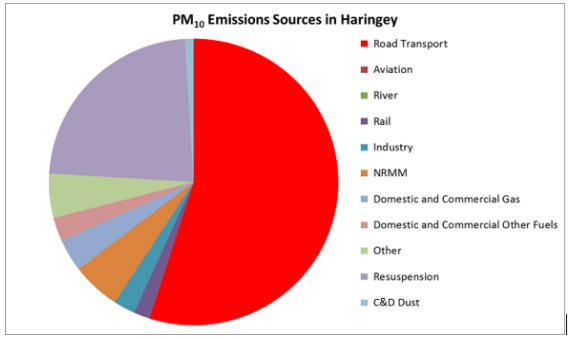
National & local strategies

- National Clean Air Strategy aimed to introduce policies that will bring the UK into compliance with the WHO standard which will deliver the clean, healthy air that our residents rightly demand.
- The UK Air Quality Strategy (AQS), which was published in 2007, provides an overarching framework for air quality management in the UK and sets out national air quality standards and objectives to protect human health.

Haringey is currently exceeding European Commission (EC) limits for NO2 in the Borough. PM10 across London currently meets objectives values. Monitoring ceased in 2014 but we remain focused on particulate matter due to the detrimental impact they have on health. These pollutants are largely attributable to road traffic emissions, particularly from diesel vehicles, industrial processes, major construction sites and power generation.



NOx Emissions by source and vehicle type (from the LAEI 2013)



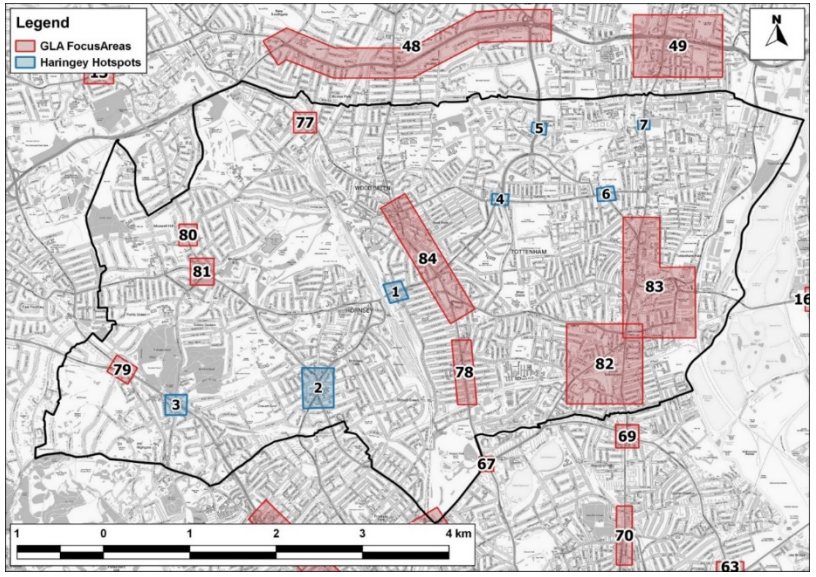
PM_{10} Emissions by source (from the LAEI 2013)

NRMM= Non Road Mobile machinery

Pollution Monitoring: Monitoring of PM10 ceased in 2014. However, across the borough there are two automatic monitoring stations that monitor levels of NO_2 and 16 NOx diffusion tubes.

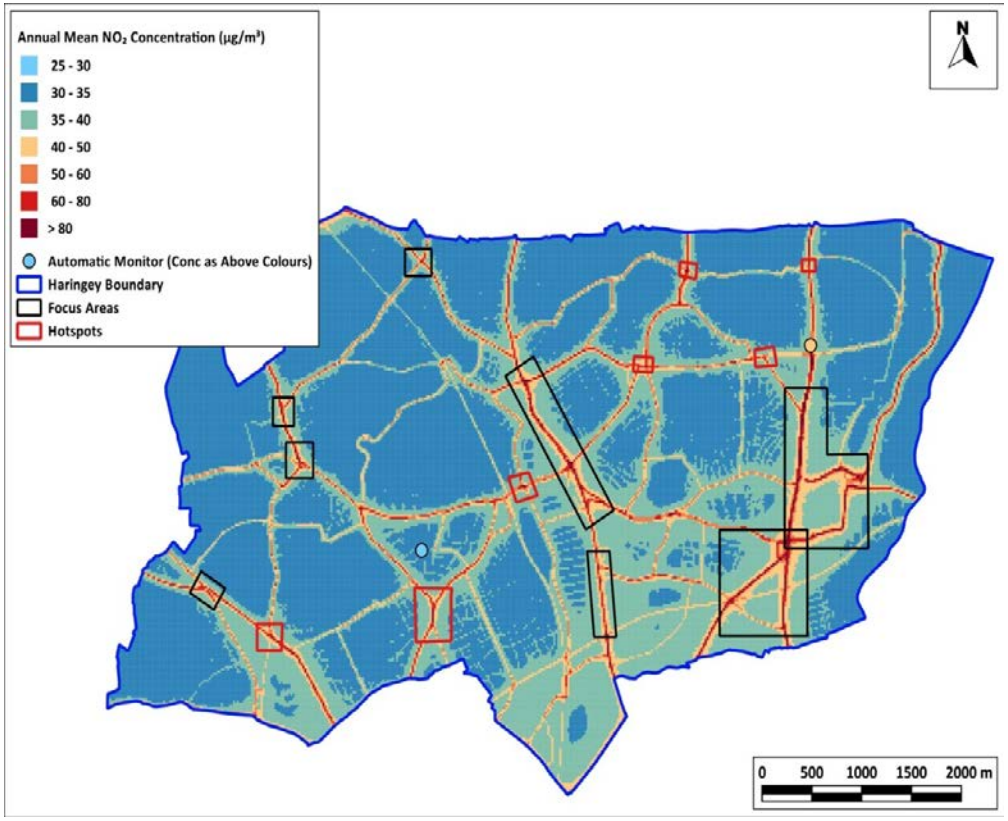
In line with the mayor's Proposal 4.1.1b, placing additional monitoring location under consideration include hospital, nursing homes, primary schools and nurseries especially those located along the major routes and highways, the area in the vicinity of the stadium, and around the canal, industrial zones and construction sites.

Focus and Hotspot Areas: The highest concentrations of NO_2 in the borough which exceed legal limits are found on the busiest main roads in the borough. Pollution levels tend to decline with increasing distance from the source.

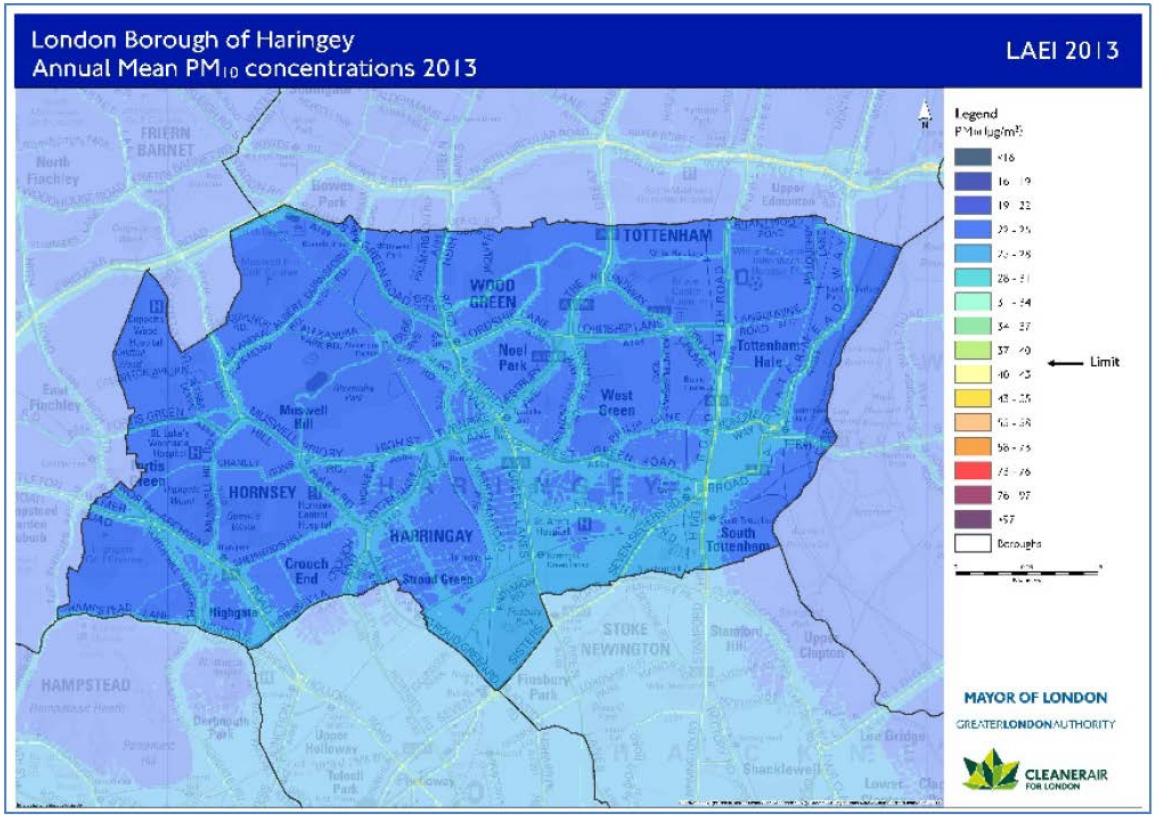


GLA Focus Areas are described as follows: 77- Bounds Green A109 junction with Durnsford/Brownlow Road, 78- Green Lanes Town Centre,79- Highgate A1 Archway Junction Alymer Road, 80- Muswell Hill Colney Hatch Lane junction with Alexandra Park Road, 81- Muswell Hill Fortis Green Road and Muswell Hill, 82- Seven Sisters junction Seven Sisters Rd/High Road A10, 83- Tottenham Hale Gyratory and A10 High Road to Bruce Grove and 84- Wood Green High Road and Turnpike Lane. The rest are those identified by Haringey through further assessments

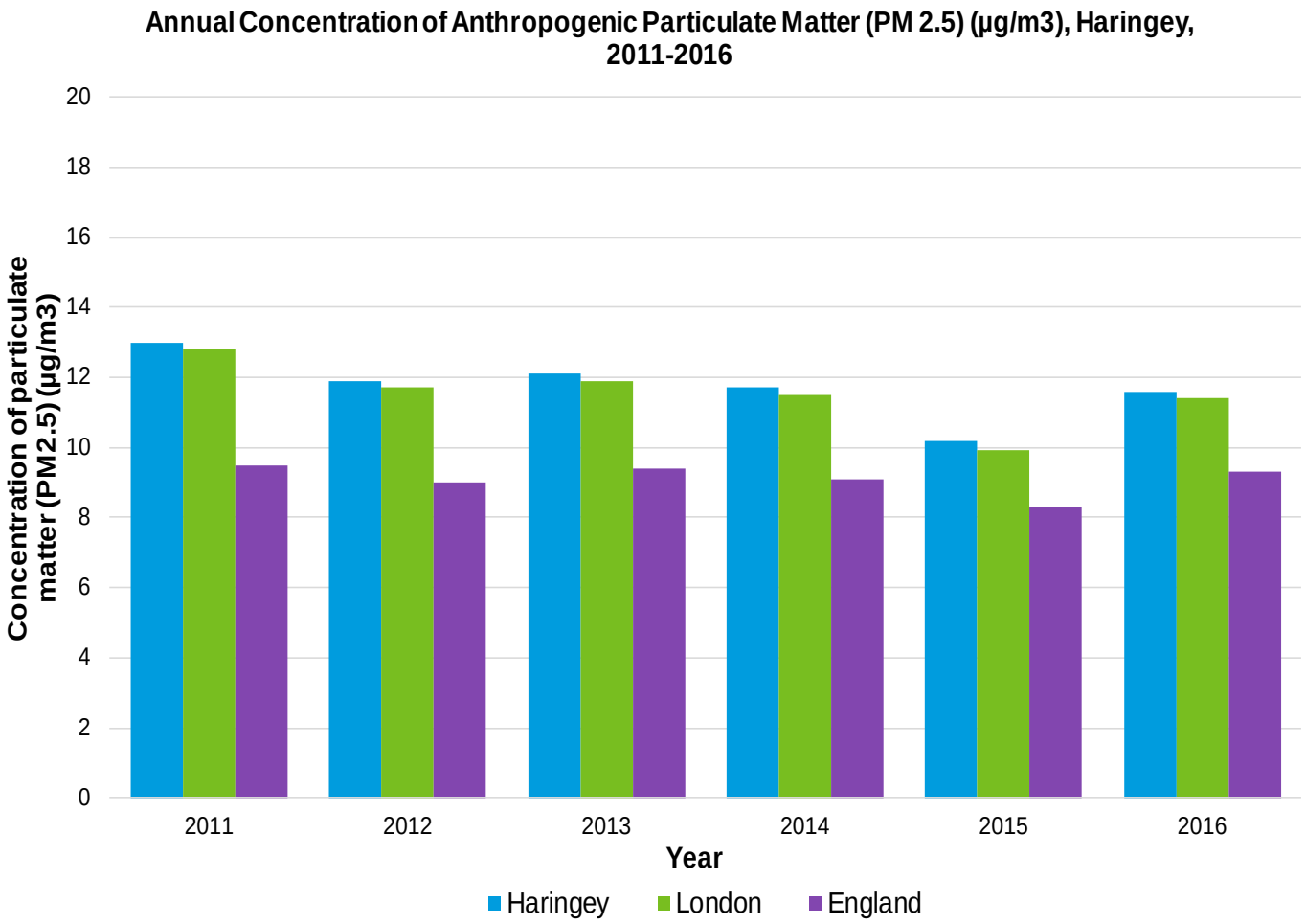
Variations in concentrations of NO_2 as identified by GLA and Haringey Council. The areas identified tend to be located alongside main roads and thoroughfares where concentrations of pollutants are highest. The variations in colour demonstrate how the pollution gradient changes, with distance from heavier traffic. The map below illustrates that much of the borough has pollution levels below the target limits.



A similar spatial pattern can be seen for PM10, with contours (changes in colour) illustrating how the pollution gradient changes with distance away from the main roads and thoroughfares where heavier traffic would be expected.



THE EVIDENCE BASE



Note: Haringey ceased monitoring PM2.5 in 2016 because PM10 objectives were being largely met in London

Haringey has a formal requirement to work towards the national objective to reduce levels of PM2.5. Air Quality Focus Areas have been identified by the GLA as having high levels of pollution and human exposure.

Annual concentrations of PM 2.5 ranged from 13 µg/m3 to 10 µg/m3 between 2011 and 2016. Concentrations of PM 2.5 in Haringey remained consistently above the London and England average over this period. Annual variations in concentrations of PM 2.5 in Haringey are closely aligned to factors such as changes in weather patterns and emissions.

A longer period of comparison would be required to better understand underlying trends. Data collected will also vary spatially so concentrations will be significantly higher or lower in different parts of the borough,

Elevated concentrations of PM 2.5 are likely to exacerbate symptoms in people with asthma, respiratory or cardiovascular disease. In Haringey in 2017, the fraction of mortality attributed to particulate air pollution was 6.7%, which was similar to London (6.5%) and above the England average, 5.1%[6].

The AQAP for Haringey 2019-24 sets out a range of measures to improve local air quality while contributing to broader strategic priorities which the GLA have identified. Measures set out in the action plan include:

- Reducing nitrogen dioxide levels which achieve at least the 40µg/m^3 objective across the borough and continuing to decrease particulate matter levels.
- Meeting any new standards or policies e.g. the Government's Clean Air Strategy which aims to halve the population living in areas with PM2.5 above WHO guideline levels of 10µg/m3 by 2025.
- Target those schools where air quality is poorest. This will involve working directly with parents and staff to produce individual travel plans to encourage active travel and encourage the implementation of walking zones.
- Implementation of different measures including those set out in the School Street plan (due in March 2020)
- Encourage schools to sign up to TfL accredited travel planning programmes. These include Sustainable Travel: Active, Responsible and Safe (STARS).
- Scale up the monitoring network around sensitive receptors such as schools, nurseries and hospitals to improve the understanding of air pollution generally across Haringey and how this may impact on those individuals at greatest risk.
- Installing Ultra Low Emission Vehicle Infrastructure.
- Regular Car Free days and temporary road closures in high footfall areas.
- Priority loading bays for ultra-low emission delivery vehicles.

The AQAP 2019-24 recognises that a partnership approach between Haringey Council, neighbouring authorities and partners including the GLA are pivotal in tackling air quality issues through the following local levers:

- Delivery of transport projects through the Local Implementation Plan (LIP)
- Effective joint working between Regulatory Services and Public Health
- Engagement with the planning service to shape the air quality agenda through planning enforcement mechanisms
- Promote low emission vehicles throughout the borough
- Improved efficiency of resources through the delivery of joined up actions, such as idling projects
- Continue to work with, and lobby regional and central government on those areas beyond Haringey's influence including Euro standards and taxation policy
- Identify and work alongside new partners, stakeholders and communities who can influence better air quality across the borough.

WHAT INFLUENCES THIS TOPIC?

Pollutant	Health impacts	Sources
Particulate matter (PM_{10} and $PM_{2.5}$)	Long-term exposure to particles contributes to the risk of developing CVD and respiratory diseases, as well as of lung cancer. $PM_{2.5}$ has greater health impacts because its smaller size means that it can travel deeper into the lungs and pass into the bloodstream. Although exposure to high concentrations during short-term pollution episodes can also exacerbate lung and heart conditions. This can significantly affect quality of life, increase visits to general practitioners, hospital admissions, and deaths.	The main sources of particulate matter are: • Road transport • Resuspension • Non-Road Mobile Machinery
Oxides of nitrogen (NO_X) made up of nitrogen oxide (NO) and nitrogen dioxide (NO_2)	NO_2 is an irritant gas, which, at high concentrations, causes inflammation of the airways. Studies have found a relationship between long term exposure to NO2 with adverse effects on health, including decreased lung function, increased respiratory symptoms such as coughing, increased incidence and prevalence of asthma, increased cancer incidence, reduced life expectancy and deaths.	The main sources of NO_2 originating in the borough are: • Road traffic • Commercial gas boilers • Domestic gas boilers
Ozone	Ozone (O3) which is a gas made up of three oxygen atoms and occurs naturally in small trace amounts in the upper atmosphere is a respiratory irritant. Short-term exposure to high ambient concentrations can cause inflammation of the respiratory tract and irritation of the eyes, nose, and throat. High levels may exacerbate asthma or trigger asthma attacks in people who are at particular risk.	Ozone is a secondary pollutant produced by the effect of sunlight on NOx and VOCs from vehicles and industry. Ozone concentrations are greatest in the summer on hot, sunny, windless days.

WHAT WORKS?

While overarching regulations like vehicle emissions standards are controlled by governments and the EU and new vehicle designs by industry, local authorities have many powers that have been shown to contribute to reducing air pollution:

- Street design and road layouts
- Urban planning policies that require energy efficient developments, reduce traffic, etc.
- Policies that promote public and school transport
- Reducing engine idling of vehicles
- Favouring clean vehicle fuels like electric Liquefied Petroleum Gas (LPG) or Compressed Natural Gas (CNG) over petrol, diesel and bio-diesel, particularly through differential charging in parking permits and charges and restricting access to the most polluting vehicles
- Promoting freight consolidation, delivery management and low or zero emission last mile services
- Promotion of fleet management and car clubs
- Installation and maintenance of electric vehicle charging points
- Services to promote home energy efficiency
- Reducing emissions from construction
- Location and enforcement of Smoke Control Areas

The Haringey Transport Strategy sets out the future direction for transport in the borough and describes the context and challenges we face and how, through the objectives and priorities outlined in the Strategy, we intend to address them. At the heart of the strategy is supporting growth in the Borough, improving quality of life and health and wellbeing and working towards becoming a carbon zero borough by 2050[5]. This overarching Strategy will be supplemented with a series of 'Action Plans' which will set out further details of our key programmes and priorities and actions needed to meet the vision set out in this strategy. The list of action plans are:

- Walking and Cycling Action Plan,
- Parking Action Plan
- Sustainable Transport and Travel Action Plan, and
- Local Implementation Plan (LIP)

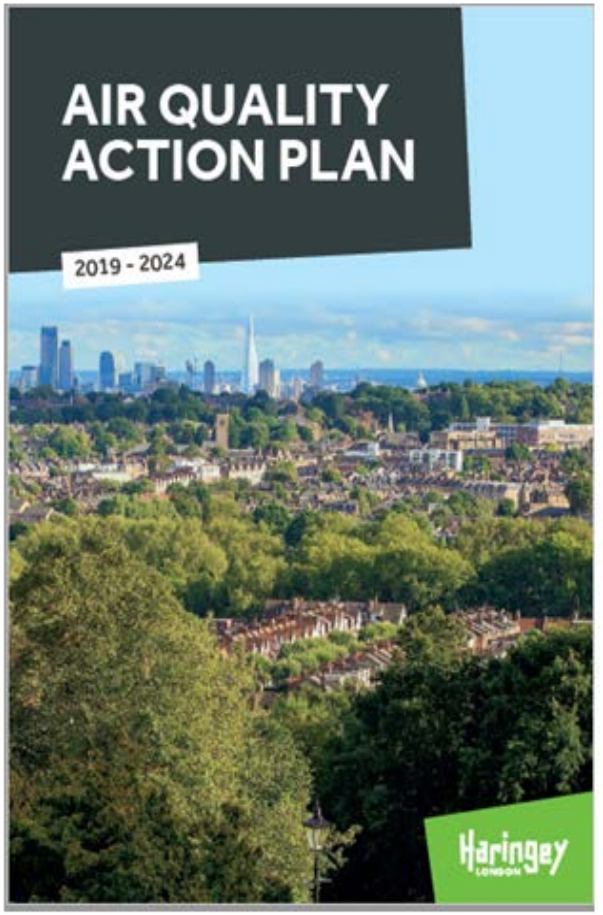
The vision for the strategy is to deliver 'a transport system that matches our growth and prosperity ambitions, whilst also improving our environment, providing accessible choices and making walking, cycling and the use of public transport a first choice for all.

WHAT WORKS?

The 2019-2024 AQAP considers measures and actions in terms of estimates of costs/ effectiveness/time-scales/feasibility of implementation. This action plan replaces the previous one, which ran from 2010-2018.

Haringey have developed actions that can be considered under seven broad topics:

- **Monitoring and other core statutory duties:** maintaining monitoring networks is critical for understanding where pollution is most acute, and what measures are effective to reduce pollution. There are also several other very important statutory duties undertaken by boroughs, which form the basis of action to improve pollution;
- **Emissions from developments and buildings**: emissions from buildings account for about 15% of the Nitrogen Oxides (NO_X) emissions across London so are important in affecting Nitrogen Dioxide (NO_2) concentrations;
- **Public health and awareness raising**: increasing awareness can drive behavioural change to lower emissions as well as to reduce exposure to air pollution;
- **Delivery servicing and freight**: vehicles delivering goods and services are usually light and heavy-duty diesel-fuelled vehicles with high primary NO_2 emissions;
- **Borough fleet actions**: our fleet includes light and heavy-duty diesel-fuelled vehicles such as minibuses and refuse collection vehicles with high primary NO_2 emissions.
- **Localised solutions**: these seek to improve the environment of neighbourhoods through a combination of measures; and
- **Cleaner transport**: road transport is the main source of air pollution in London. We need to incentivise a change to walking, cycling and ultra-low emission vehicles (such as electric) as far as possible.



ASSETS AND SERVICES

Scheme	Description
Haringey Council Lead by Example	All vehicles in council ownership are compliant with the requirements of the Low Emission Zone. Two electric vehicles are available for staff use, tracking with light foot (black box) is provided and driver training is part of driver standard check.
Car Clubs	The number of car club vehicles operating in Haringey has risen to 80 and includes cars, people carriers and vans. City Car Club provide 3 vehicles. Drive now vehicles can be used for one-way journeys and can be picked up and parked in any legal parking bay in the borough. Haringey is one of four London boroughs that host a fleet of 300+ Drive now vehicles
Travel Plans	Haringey encourages and supports all schools across the borough to develop and implement school travel plans. These travel plans demonstrate how schools are implementing initiatives to make travel safer and more sustainable for students, parents and staff. They are an important tool to encourage modal shift.
No Idling Zones	The council has been committed to driving behavioural change to reduce idling. An Air Quality Action Day was held in past promoting no-idling to raise awareness of car exhaust fumes outside the school gates. Officers handed out leaflets and gave advice to parents/carers dropping and picking up their children. Following a number of complaints, transport operators who transport children with Special Educational Needs & Disabilities (SEND) to schools/colleges around the borough were written to reminding them not to leave their engines idling outside of the school/college. Car idling campaigns are still ongoing and the council is to introduce a corporate no idling policy to include enforcement. Haringey along with 27 other London Boroughs expressed interest in taking part in a pan-London anti-idling project funded by the Mayors Air Quality Fund (MAQF) coordinated by City of London Corporation and London Borough Camden.
Smarter Travel Promotion	There are a number of national and local campaigns to encourage take-up of sustainable modes of transport promoted by Haringey's Smarter Travel Team. Haringey council helped schools to raise awareness of air quality and health impacts through air quality assemblies and classroom sessions to promote alternative ways of travel to school. An officer from Haringey assisted during the Air Quality Auditing in Welbourne Scholl and Holy Trinity School and various STARS event related work.
Cycle Routes and Cycle Parking	Haringey has a network of cycle routes across the borough including cycle lanes on main roads, separated cycle lanes and special fully signed, quiet routes. The borough is also part of the London Cycle network with cycle routes linking into those in neighbouring boroughs.
Air Pollution and Health	The air quality team has established good links with the Public Health team to improve the health of the people residing, working and visiting Haringey. E.g. AirTEXT is a unique air quality information service for people who live or work in London and Walkit.com is an urban walking route planner. Airtext, along with Walkit.com are promoted on Haringey council webpages.
Air Pollution monitoring	Haringey council continues to monitor the pollutants of concern across the borough. All analysers at the two automatic continuous monitoring stations are affiliated to the AURN (Defra's national network). There are 16 diffusion tube sites in the borough, located mostly where there is risk of exposure and possible exceedances of the Governments objective. Some background air quality measurements are also collected.
School streets	Lordship Lane Primary School now has a permanent school street that was implemented on 25th February 2019. This has been a success, therefore we are developing a programme for other feasible school streets across Haringey. All of which will be subject to consultation and prioritised by the level of pollution around the school, the school engagement with the TFL STARS programme and if the infrastructure around the school is appropriate. Haringey council aim to develop a School Streets Action Plan identifying measures to be taken to reduce pollution around school by 2020.
Schools/Nursery audits	The audits at three schools within Haringey have made recommendations to reduce emissions and exposure. Pending the availability of fund the scheme will be expended to other schools within Haringey

EU limit values and World Health Organisation guidelines, and achievement in Haringey

Pollutant	Period	EU Limit	WHO	Achievement Use (LAEI 2016) ($\mu g/m^{3)}$ or DEFRA Website
PM_{10}	Annual mean	40µg/m^3	20µg/m3	
PM_{10}	Daily mean (exceedances)	50µg/m^3 (35)	50µg/m^3 (3)	
$PM_{2.5}$	Annual mean	25µg/m^3	10µg/m^3	
$PM_{2.5}$	Daily mean (exceedances)	N/A	25µg/m^3 (3)	
NO_2	Annual mean	40µg/m^3	40µg/m^3	
NO_2	1-hour mean (exceedances)	200µg/m^3 (3)	200µg/m^3 (-)	
O_3	8 hr daily max (exceedances*)	120 µg/m^3(25)	100µg/m^3	
* days/year, calculated over 3-year mean				

THE VOICE: WHAT DO LOCAL PEOPLE THINK ABOUT THE ISSUE

The Council's four year borough plan sets out priorities which are designed to have a positive impact on the quality of people's lives in Haringey. The priorities set out in Haringey's AQAP 2019-24 have been developed in alignment with the current corporate priorities detailed in the Borough Plan.

In developing the content of the AQAP, engagement workshops were held throughout 2017 and 2018 to capture the views of the public, local community groups and Council departments. The workshops provided an opportunity to raise awareness of air pollution across Haringey and understand the concerns of local residents. Some of the main headlines which were captured during the workshops and are detailed in the AQAP include the following:

1. What opportunities exist for partnership working across Council Departments
2. Enforcement
3. Planning
4. Borough fleet and procurement
5. Cycling and walking
6. Encouragement of low emission vehicles for deliveries and via parking policies

The re-design of highways and kerbside space to reduce traffic congestion would lead to improvements in the local air quality and improved opportunities for walking and cycling.

The increased uptake of active travel would provide a range of additional benefits across the public health agenda, including improved levels of mental well-being and reduced levels of obesity. The Haringey Walking and Cycling Action Plan is being produced with the aim of consulting the public on the draft document in late 2020.

GAPS: UNMET NEEDS

The government's Clean Air Strategy addresses both indoor and outdoor air pollutants and considers how the reduction of emissions and pollutant concentrations can improve and protect human health.

The following have been identified as key actions which require further attention to address existing gaps and improve overall air quality in the borough.

- Achieving closer and stronger communication and coordination across the Council
- Improving/targeting public awareness and changing attitudes
- Funding and prioritising of resources for initiatives and enforcement
- Improving powers e.g. in relation to smoke control
- Adopting a whole organisational approach that delivers and sustains behavioural change in tackling air quality emissions
- Understanding the scale of indoor air pollution across Haringey and how this contributes to the development of respiratory diseases such as asthma
- As the pollution gradient changes with distance away from heavy traffic and the main roads across Haringey, developing a more detailed understanding of the demographic profile of the borough, the population density and the related pollution impact on the population
- Obtaining high resolution spatial data to inform and better understand the distribution of air quality monitoring sites at a local level
- Cost benefit analysis/tools to provide a more detailed understanding of the scale of economic, environmental and health impacts which air pollution presents across Haringey
- Improving energy efficiency in homes and buildings and reducing CO_2 emissions.

RECOMMENDATIONS

- Further action to significantly reduce private car use to and from work and school. Sustainable travel options include enabling residents to walk more, promoting the take up of cycling, using public transport more frequently and the increased use of electric vehicles

- Further analysis to better understand how the NHS can reduce levels of air pollution through its own activities including: increasing the use of electric vehicles, low emission engines, reducing business mileages and fleet pollutant emissions

- Undertake a review of Haringey's parking policy to explore the feasibility of restricting parking on congested high streets in the borough. This would improve bus journey times, reduce idling and improve accessibility for cyclists

- Public realm improvements which create an urban environment that is beneficial to the air quality, improves the surrounding aesthetics and increases rates of physical activity among local residents. Measures could include: local tree planting schemes, pavement widening and the installation of green infrastructure

- Implement additional school streets throughout the borough with the aim of transforming roads outside schools to ease congestion and idling traffic whilst improving air quality around the vicinity of the school

- Continue to increase the number of electrical charging points in parking developments across the borough and support the uptake of ultra low emission vehicles

- Review current highway design principles across the borough to reduce emissions from road vehicles and reduce the amount of pedestrians and residents being exposed to air pollutants

- Review highway design principles to better integrate active modes of travel including cycling and walking in all infrastructure improvement projects in future.

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1. COMEAP, 2018a: https://www.gov.uk/government/publications/nitrogen-dioxide-effects-on-mortality
2. Walton H, Dajnak D, Beevers S, Williams M, Watkiss P and Hunt A (2015) Understanding the Health Impacts of Air Pollution in London, King's College London
3. DEFRA/Air Quality and Public Health Group, Public Health England
4. Islington Air Quality Strategy, 2019-2023, Islington Council
5. Defra's Automatic Urban and Rural Network: http://uk-air.defra.gov.uk/interactive-map
6. The Haringey Zero-Fifty Commission recommendations 2017

About Haringey's JSNA

Haringey.gov.uk brings together information held across the organisations into one accessible place. It provides access to evidence, intelligence and data on the current and anticipated needs of Haringey's population and is designed to be used by a broad range of audiences including practitioners, researchers, commissioners, policy makers, Councillors, students and the general public.

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