Overview & Scrutiny

Health in Hackney Scrutiny Commission

All Members of the Health in Scrutiny Commission are requested to attend the meeting of the Commission to be held as follows

Wednesday 29 June 2022

7.00 pm

Council Chamber, Hackney Town Hall, Mare Street, London E8 1EA

The press and public are welcome to join this meeting remotely via this link: https://youtu.be/SWCfoSgfJME

Back up live stream link: https://youtu.be/UMAGvpZG-hU

If you wish to attend please give notice and note the guidance below.

Contact:
Jarlath O'Connell
☎ 020 8356 3309
✉ jarlath.oconnell@hackney.gov.uk

Mark Carroll
Chief Executive, London Borough of Hackney

Members: **Cllr Ben Hayhurst, Cllr Deniz Oguzkanli, Cllr Kam Adams, Cllr Grace Adebayo, Cllr Frank Baffour, Cllr Eluzer Goldberg, Cllr Sharon Patrick and Cllr Ifraax Samatar**

Agenda

ALL MEETINGS ARE OPEN TO THE PUBLIC

Hackney

ACCESS AND INFORMATION

Public Involvement and Recording

Public Attendance at the Town Hall for Meetings

Scrutiny meetings are held in public, rather than being public meetings. This means that whilst residents and press are welcome to attend, they can only ask questions at the discretion of the Chair. For further information relating to public access to information, please see Part 4 of the council's constitution, available at https://hackney.gov.uk/council-business or by contacting Governance Services (020 8356 3503)

Following the lifting of all Covid-19 restrictions by the Government and the Council updating its assessment of access to its buildings, the Town Hall is now open to the public and members of the public may attend meetings of the Council.

We recognise, however, that you may find it more convenient to observe the meeting via the live-stream facility, the link for which appears on the agenda front sheet.

We would ask that if you have either tested positive for Covid-19 or have any symptoms that you do not attend the meeting, but rather use the livestream facility. If this applies and you are attending the meeting to ask a question, make a deputation or present a petition then you may contact the Officer named at the beginning of the agenda and they will be able to make arrangements for the Chair of the meeting to ask the question, make the deputation or present the petition on your behalf.

The Council will continue to ensure that access to our meetings is in line with any Covid-19 restrictions that may be in force from time to time and also in line with public health advice. The latest general advice can be found here - https://hackney.gov.uk/coronavirus-support

Rights of Press and Public to Report on Meetings

Where a meeting of the Council and its committees are open to the public, the press and public are welcome to report on meetings of the Council and its committees, through any audio, visual or written methods and may use digital and social media providing they do not disturb the conduct of the meeting and providing that the person reporting or providing the commentary is present at the meeting.

Those wishing to film, photograph or audio record a meeting are asked to notify the Council's Monitoring Officer by noon on the day of the meeting, if possible, or any time prior to the start of the meeting or notify the Chair at the

start of the meeting.

The Monitoring Officer, or the Chair of the meeting, may designate a set area from which all recording must take place at a meeting.

The Council will endeavour to provide reasonable space and seating to view, hear and record the meeting. If those intending to record a meeting require any other reasonable facilities, notice should be given to the Monitoring Officer in advance of the meeting and will only be provided if practicable to do so.

The Chair shall have discretion to regulate the behaviour of all those present recording a meeting in the interests of the efficient conduct of the meeting. Anyone acting in a disruptive manner may be required by the Chair to cease recording or may be excluded from the meeting.

Disruptive behaviour may include moving from any designated recording area; causing excessive noise; intrusive lighting; interrupting the meeting; or filming members of the public who have asked not to be filmed.

All those visually recording a meeting are requested to only focus on recording Councillors, officers and the public who are directly involved in the conduct of the meeting. The Chair of the meeting will ask any members of the public present if they have objections to being visually recorded. Those visually recording a meeting are asked to respect the wishes of those who do not wish to be filmed or photographed. Failure by someone recording a meeting to respect the wishes of those who do not wish to be filmed and photographed may result in the Chair instructing them to cease recording or in their exclusion from the meeting.

If a meeting passes a motion to exclude the press and public then in order to consider confidential or exempt information, all recording must cease, and all recording equipment must be removed from the meeting. The press and public are not permitted to use any means which might enable them to see or hear the proceedings whilst they are excluded from a meeting and confidential or exempt information is under consideration.

Providing oral commentary during a meeting is not permitted.

Advice to Members on Declaring Interests

Advice to Members on Declaring Interests

Hackney Council's Code of Conduct applies to all Members of the Council, the Mayor and co-opted Members.

This note is intended to provide general guidance for Members on declaring interests. However, you may need to obtain specific advice on whether you have an interest in a particular matter. If you need advice, you can contact:

- Director of Legal, Democratic and Electoral Services
- the Legal Adviser to the Committee; or
- Governance Services.

If at all possible, you should try to identify any potential interest you may have before the meeting so that you and the person you ask for advice can fully consider all the circumstances before reaching a conclusion on what action you should take.

You will have a disclosable pecuniary interest in a matter if it:

i. relates to an interest that you have already registered in Parts A and C of the Register of Pecuniary Interests of you or your spouse/civil partner, or anyone living with you as if they were your spouse/civil partner;

ii. relates to an interest that should be registered in Parts A and C of the Register of Pecuniary Interests of your spouse/civil partner, or anyone living with you as if they were your spouse/civil partner, but you have not yet done so; or

iii. affects your well-being or financial position or that of your spouse/civil partner, or anyone living with you as if they were your spouse/civil partner.

If you have a disclosable pecuniary interest in an item on the agenda you must:

i. Declare the existence and nature of the interest (in relation to the relevant agenda item) as soon as it becomes apparent to you (subject to the rules regarding sensitive interests).

ii. You must leave the meeting when the item in which you have an interest is being discussed. You cannot stay in the meeting whilst discussion of the item takes place, and you cannot vote on the matter. In addition, you must not seek to improperly influence the decision.

iii. If you have, however, obtained dispensation from the Monitoring Officer or Standards Committee you may remain in the meeting and participate in the

meeting. If dispensation has been granted it will stipulate the extent of your involvement, such as whether you can only be present to make representations, provide evidence or whether you are able to fully participate and vote on the matter in which you have a pecuniary interest.

Do you have any other non-pecuniary interest on any matter on the agenda which is being considered at the meeting?

You will have 'other non-pecuniary interest' in a matter if:

i. It relates to an external body that you have been appointed to as a Member or in another capacity; or

ii. It relates to an organisation or individual which you have actively engaged in supporting.

If you have other non-pecuniary interest in an item on the agenda you must:

i. Declare the existence and nature of the interest (in relation to the relevant agenda item) as soon as it becomes apparent to you.

ii. You may remain in the meeting, participate in any discussion or vote provided that contractual, financial, consent, permission or licence matters are not under consideration relating to the item in which you have an interest.

iii. If you have an interest in a contractual, financial, consent, permission, or licence matter under consideration, you must leave the meeting unless you have obtained a dispensation from the Monitoring Officer or Standards Committee. You cannot stay in the meeting whilst discussion of the item takes place, and you cannot vote on the matter. In addition, you must not seek to improperly influence the decision. Where members of the public are allowed to make representations, or to give evidence or answer questions about the matter you may, with the permission of the meeting, speak on a matter then leave the meeting. Once you have finished making your representation, you must leave the meeting whilst the matter is being discussed.

iv. If you have been granted dispensation, in accordance with the Council's dispensation procedure you may remain in the meeting. If dispensation has been granted it will stipulate the extent of your involvement, such as whether you can only be present to make representations, provide evidence or whether you are able to fully participate and vote on the matter in which you have a non-pecuniary interest.

Further Information

Advice can be obtained from Dawn Carter-McDonald, Director of Legal, Democratic and Electoral Services via email dawn.carter-mcdonald@hackney.gov.uk

Getting to the Town Hall

For a map of how to find the Town Hall, please visit the council's website http://www.hackney.gov.uk/contact-us.htm or contact the Overview and Scrutiny Officer using the details provided on the front cover of this agenda.

Accessibility

There are public toilets available, with wheelchair access, on the ground floor of the Town Hall.

Induction loop facilities are available in the Assembly Halls and the Council Chamber. Access for people with mobility difficulties can be obtained through the ramp on the side to the main Town Hall entrance.

Further Information about the Commission

If you would like any more information about the Scrutiny Commission, including the membership details, meeting dates and previous reviews, please visit the website or use this QR Code (accessible via phone or tablet 'app')

Health in Hackney Scrutiny Commission

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Hackney

REPORT OF DIRECTOR FOR LEGAL, DEMOCRATIC AND ELECTORAL SERVICES

APPOINTMENT TO JOINT HEALTH OVERVIEW AND SCRUTINY COMMITTEE	Classification: Public	Enclosures: None
Health in Hackney Scrutiny Commission 29 June 2022	Ward(s) affected: All	AGENDA ITEM No: 5

1. INTRODUCTION

1.1 This report invites the Health in Hackney Scrutiny Commission to agree the appointment of **3** Members to the Inner North East London Joint Health Overview and Scrutiny Committee for 2022/23. The Committee comprises one member from the City of London Corporation, and three each from the London Boroughs of Hackney, Newham, Tower Hamlets and Waltham Forest.

2. RECOMMENDATIONS

2.1 **To appoint 3 Members as Hackney's representatives on the Inner North East London Joint Health Overview and Scrutiny Committee for 2022/23.**

3. FINANCIAL CONSIDERATIONS

3.1 The recommendations to appoint new members to these Committees to deal with the issues specified in the report will not result in any significant additional cost to the Council. Any costs arising from the hosting of or attendance at meetings of the Joint Committee will be met from existing budgets.

4. LEGAL CONSIDERATIONS

4.1 Sections 190 and 191 of the Health and Social Care Act 2012 ("HSCA 2012") made various changes to the system of review and scrutiny of the health service. Under the HSCA 2012 health scrutiny functions were conferred upon the Council itself. Health scrutiny became a statutory function of the Council (as opposed to an overview and scrutiny Committee of the local authority). Health scrutiny functions are not functions of the executive under executive arrangements. Under section 244 of the NHS Act 2006, local authorities were no longer required to have a Health Overview and Scrutiny Committee to discharge health functions. The Council chose to continue its existing Health

Overview and Scrutiny Commission as set out in the report to Full Council on 20 March 2013 upon the setting up of the Health and Wellbeing Board.

4.2 Article 11.4 of Article 11 of the Constitution provides that the Council may be required to form a joint Health Scrutiny Committee with other boroughs being consulted by local health providers that are planning changes to the way they deliver services which could be considered to be a substantial and arrange for the Joint Health Scrutiny Committee to review and scrutinise matters relating to the health services and make reports and recommendations on such matters.

4.3 By virtue of Article 11 of the Constitution, Health in Hackney Overview and Scrutiny Commission has been delegated the Council's statutory functions in accordance with section 244 of the National Health Service Act 2006 and associated regulations to set up a Joint Health Overview and Scrutiny Commission and appoint members from within the membership of the Committee to any Joint Overview and Scrutiny Commission with other local authorities, as directed under the NHS Act 2006.

4.4 The arrangements for the Joint Health Overview and Scrutiny Committee must comply with the relevant provisions of the Local Authority (Public Health, Health and Wellbeing Boards and Health Scrutiny) Regulations 2013. The Joint Health Overview and Scrutiny Commission is established under Regulation 30(1), which enables two or more local authorities to appoint a joint overview and scrutiny committee and arrange for health scrutiny functions to be exercisable by the joint committee, subject to such terms and conditions as the authorities consider appropriate. Under Regulation 30(6) the Joint Health and Overview and Scrutiny Commission may not discharge any functions other than health scrutiny (relevant functions) in accordance with Regulation 30.

5. DETAIL

5.1 INEL JHOSC and ONEL (Outer North East London) JHOSC emerged from the then pan-London JHOSCs formed to scrutinise heart and stroke services and the Darzi reforms c. 2008. INEL JHOSC has met formally 4 times during 2021/22 in virtual or hybrid meetings. The main focus of its work is to scrutinise the East London Health and Care Partnership (ELHCP) which has evolved into **North East London Integrated Care System** (NEL ICS) which will be formally in place from 1 July 2023.

5.2 The Health and Care Act 2022 becoming law means that from 1 July 2022 NEL CCG will no longer exist and a new statutory organisation – an Integrated Care Board (ICB) – has been established to be known as **NHS North East London.** The NEL ICS footprint crosses 8 boroughs and replaces the 7 previous CCGs in north east London, including City and Hackney CCG.

5.3 NEL ICS is the collective term for: *the Integrated Care Board, Integrated Care Partnership, place-based partnerships and provider collaboratives.* The ICB will take on the NHS commissioning functions of CCGs as well as some of NHS England's commissioning functions. It will be responsible for the NHS budget and performance within the system. Marie Gabriel CBE has been appointed as the Chair and Zina Etherdige has been appointed as the CEO.

5.4 In terms of cross-borough scrutiny of NHS services, the North East London patch has, for historical reasons, had two joint health scrutiny committees covering it. **Outer North East London (ONEL)** comprising Havering, Barking and Dagenham, and Redbridge and **INEL** which comprises Waltham Forest, Tower Hamlets, Newham, City and Hackney. Waltham Forest is also an Observer on ONEL and Redbridge is an Observer on INEL.

5.5 The custom has been that the Chair of the Committee rotates among the 5 boroughs every two years. This usually followed the municipal calendar however a delay meant that Newham held the chair from Feb 2019 to Feb 2021. At a meeting on 10 February 2021 Cllr Ben Hayhurst (Chair of Health in Hackney Scrutiny Commission) and one of the three Hackney reps was elected as Chair of INEL for a two-year term. This also means that Hackney Council now has the Secretariat for the Committee from Feb 2021 to effectively May 2023 to end the municipal term.

5.6 Over the past year the Committee has considered the following items. The 23 June 2021 meeting considered:

a) Covid-19 vaccinations programme in NEL
b) Implications for NEL ICS of the Health and Care White Paper
c) Accountability of processes for managing future changes of ownership of GP Practices
d) Challenges of building back elective care post Covid-19 pandemic

5.7 The 13 September 2021 meeting considered:

a) Whipps Cross redevelopment programme
b) Structure of Barts Health and the developing Provider Collaboration
c) Implementing the North East London Integrated Care System
d) Covid-19 vaccination programme in NEL

5.8 The 16 December 2021 meeting considered:

a) Covid-19, winter pressures, elective recovery update
b) Plans for engagement and information on proposed service changes - Community Diagnostic Centres
c) NEL Integrated Care System update
d) Whipps Cross Redevelopment update from Chair of the new Special Whipps Cross JHOSC

5.9 The 1 March 2022 meeting considered:

a) Implementation of the ICS Structure
b) Partnership updates (comprising Performance; Provider Trusts, Covid 19 and Long Covid; Cancer; Community Pharmacist Consultation service, Diagnostics; Looking ahead)
c) Harmonisation of Continuing Healthcare policies
d) Harmonisation of Fertility Services policies
e) Update on the work of the Whipps Cross JHOSC

5.10 The first meeting of 2022/23 takes place on 25 July 2022 and it will consider the following:

a) Implementation of the ICS (filling out the structure, finance flows, engagement strategy)
b) Partnership updates (Provider Collaboratives; Elective Care backlog etc)
c) Consultation on harmonisation of Fertility Services
d) Update from Whipps Cross JHOSC

5.11 In 2022/23 the Committee will meet on 25 July, 19 Oct, 15 Dec '22 and 28 Feb '23. The Membership for 2021/22 was:

City of London: Common Councilman Michael Hudson
Hackney: Cllrs Ben Hayhurst, Peter Snell, Kam Adams
Newham: Cllrs Susan Masters, Anthony McAlmont, Ayesha Chowdhury
Tower Hamlets: Cllrs Gabriela Salva-Macallan, Faroque Ahmed, Shah Ameen
Waltham Forest: Cllrs Umar Ali, Nick Halebi, Richard Sweden
Observer Member: Cllr Neil Zammett (LB Redbridge)

Please note that memberships will change significantly after the local elections and the AGMs in each borough.

5.12 Cllr Munn from Hackney chaired the Committee from 2014-2016 and Cllr Hayhurst from Hackney has been one of the Vice Chairs since 2016 and in February 2021 was elected Chair. Hackney Members have played an active role in the Committee and ensured that there isn't duplication in the work programmes of INEL JHOSC and Health in Hackney SC.

Dawn Carter-McDonald
Director Legal, Democratic and Electoral Services

Report Originating Officer: Jarlath O'Connell 020-8356 3309
Legal Comments: Louise Humphreys 020-8356 4817

Background papers:

The following documents were used in the preparation of this report:
- Local Government Act 1972 (as amended) - Access to Information

For reference:

Hackney

Health in Hackney Scrutiny Commission 29th June 2022 **The science on the health impacts of poor air quality - expert briefing**	Item No **6**

PURPOSE

The purpose of the item is to hear from a senior academic expert on the latest research on the health impacts of poor air quality both indoor and outdoor and to discuss the progress being made in implementing Hackney's own *Air Quality Action Plan 2021-25* and to explore areas for improvement or greater focus. This is a briefing session not a full review.

OUTLINE

Air pollution is ubiquitous, but in urban and especially highly trafficked areas, exposures can be high. Numerous research studies, replicated across the world agree that breathing air of poor quality impacts on people's health. Exposure to poor air quality is associated with both ill health and premature death. It affects everyone, but in particular children, older people 65+ and those with CVD/respiratory disease. People may be affected by poor air quality even if they never experience any noticeable pollution related health effects such as breathing problems. Air pollution can cause short term (nearly immediate) symptoms and long term (chronic disease) effects. Most of the air pollution in London is produced by traffic, heating, and burning of solid fuels. Over 40% per cent of the NO2 in London comes from road transport so this is why the highest concentrations of NO2 are recorded at busy roadside locations.

The GLA has recently published a useful guide (see 6f below) which provides an overview of the science and the current policy context as well as Hackney specific detail.

Attached please find:

6b Briefing from Dr Ian Mudway (Imperial College) 'Impacts of air quality on health'
6c Presentation from LBH 'Health impacts of air pollution evidence and responses'
6d Full report from LBH 'Health impacts of air pollution – evidence and responses'
6e Hackney's *Air Quality Action Plan 2021-25*
6f GLA's *Air Quality in LB Hackney - a guide for Public Health professionals*

Running order

No.	*Subject*	*Name*	*Organisation*	*Time*
1	Impacts of air quality on health	Dr Ian Mudway* biog	Imperial College, Faculty of Medicine *Senior Lecturer in Public Health*	7.05
2	Questions for clarification			7.25
3	Presentation from LBH on 'health impacts of air pollution – evidence and responses' and overview of progress in implementing Hackney's *Air Quality Action Plan 2021-25*	Chris Lovitt Dave Trew	Hackney Council *Deputy Director of Public Health* *Land Water Air Team Manager, Environmental Services*	7.35
4	Questions from Members and discussion.			7.55-8.30

Also invited to contribute to the discussion are:

Cllr Chris Kennedy, Cabinet Member for Health, Adult Social Care, Voluntary Sector and Culture
Cllr Mete Coban, Cabinet Member for Environment and Transport
Cllr Polly Billington, Chair of Skills, Economy and Growth Scrutiny Commission
Helen Woodland, Group Director of Adults Health and Integration
Dr Sandra Husbands, Director of Public Health for City and Hackney
Aled Richards, Strategic Director, Sustainability and Public Realm
Sam Kirk, Environmental Services Strategy Manager,

ACTION

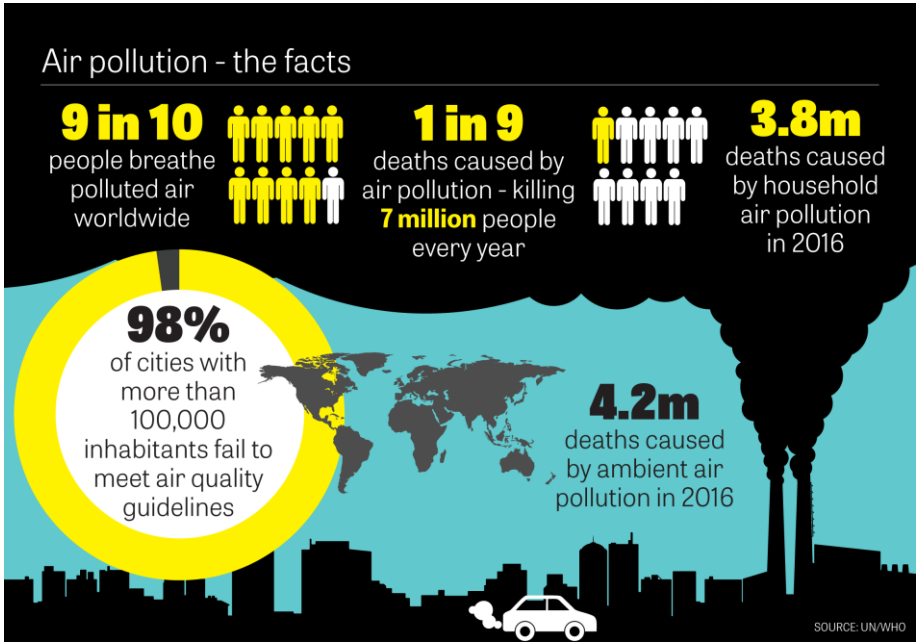
The Commission is requested to give consideration to the briefings and discussion.

***** *Dr Ian Mudway is a senior lecturer in the School of Public Health at Imperial, a member of the MRC Centre for Environment and Health; MRC & Asthma UK Centre in Allergic Mechanisms of Asthma and the NIHR-PHE Health Protection Research Units in Environmental Exposures and Health and Chemical and Radiation Threats and Hazards. He has over 25 years of experience researching the impacts of air pollution on human health and in the development of assays to quantify the toxicity of the chemical cocktails that pollute the air we breathe. Over this period Dr Mudway has published over 100 research papers, reports and book chapters on these topics, as well as providing advice to the local, national and international governments and NGOs. Dr Mudway is passionate about the communication of science to lay audiences and has worked extensively with artists and educationalist to promote the public understanding of the risks associated with environmental pollutants. Currently his work is focused on understanding early life impacts of pollutants on the development of the lung and cognitive function in children living within urban populations, as well as furthering our fundamental understanding of the mechanisms that drive these adverse effects and modify an individual's susceptibility to air pollution.*

Imperial College London

Impacts of **Air Quality** on Health

Ian Mudway



MRC Centre for Environment & Health

UKRI Medical Research Council

Imperial College London

Asthma UK Centre in Allergic Mechanisms of Asthma

asthma UK

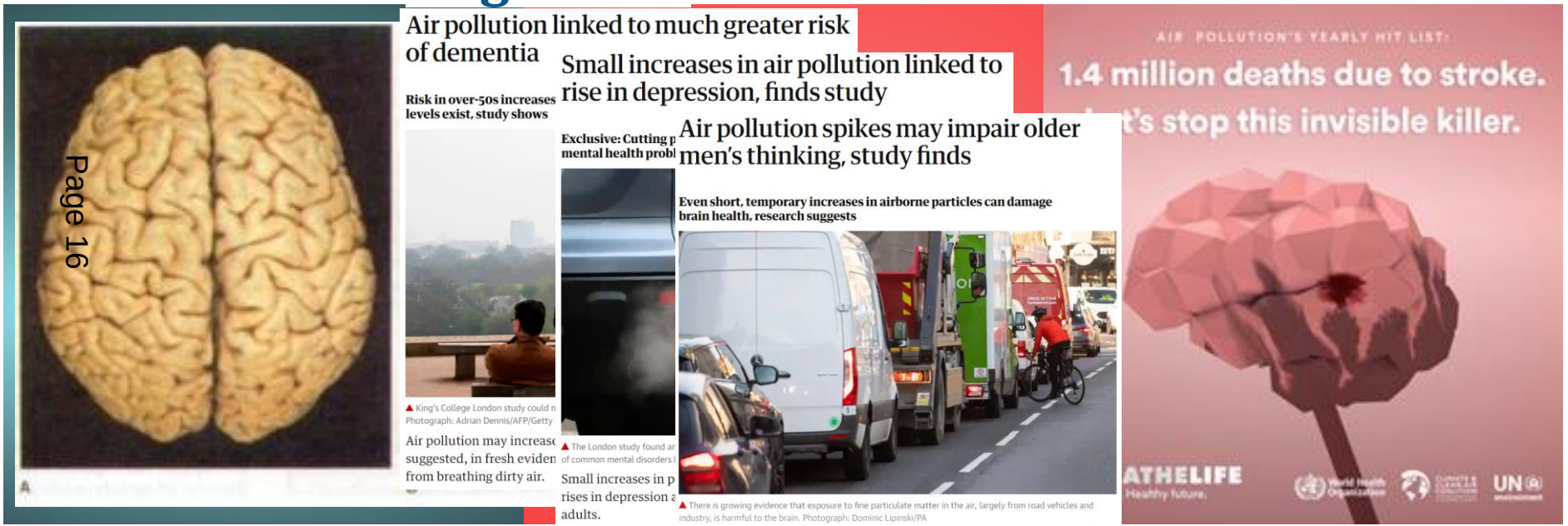
Imperial College London

KING'S College LONDON

NIHR | Health Protection Research Unit in Chemical and Radiation Threats and Hazards at Imperial College London

NIHR | Health Protection Research Unit in Environmental Exposures and Health at Imperial College London

Known Risks & Emerging Risks

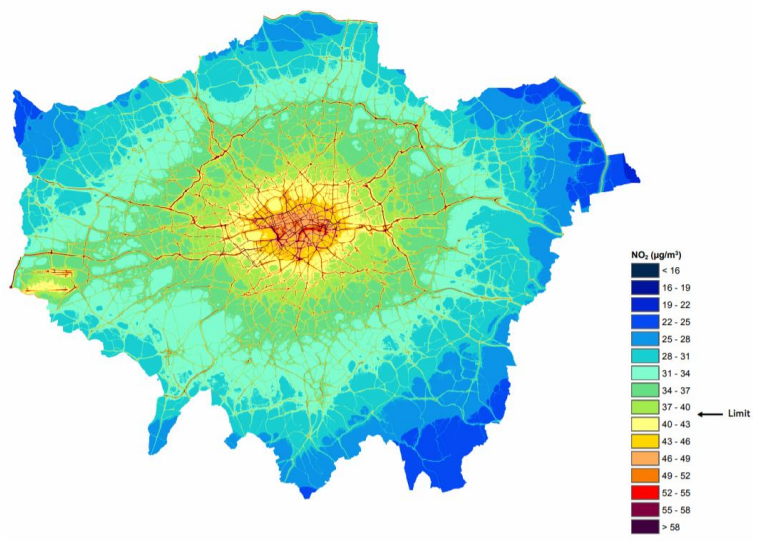


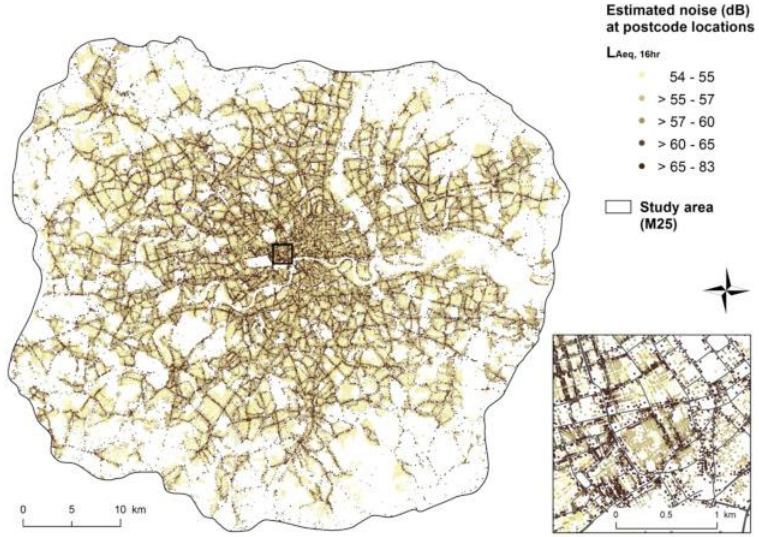
Mon 3 May 2020

Key studies (2016 - 2020)

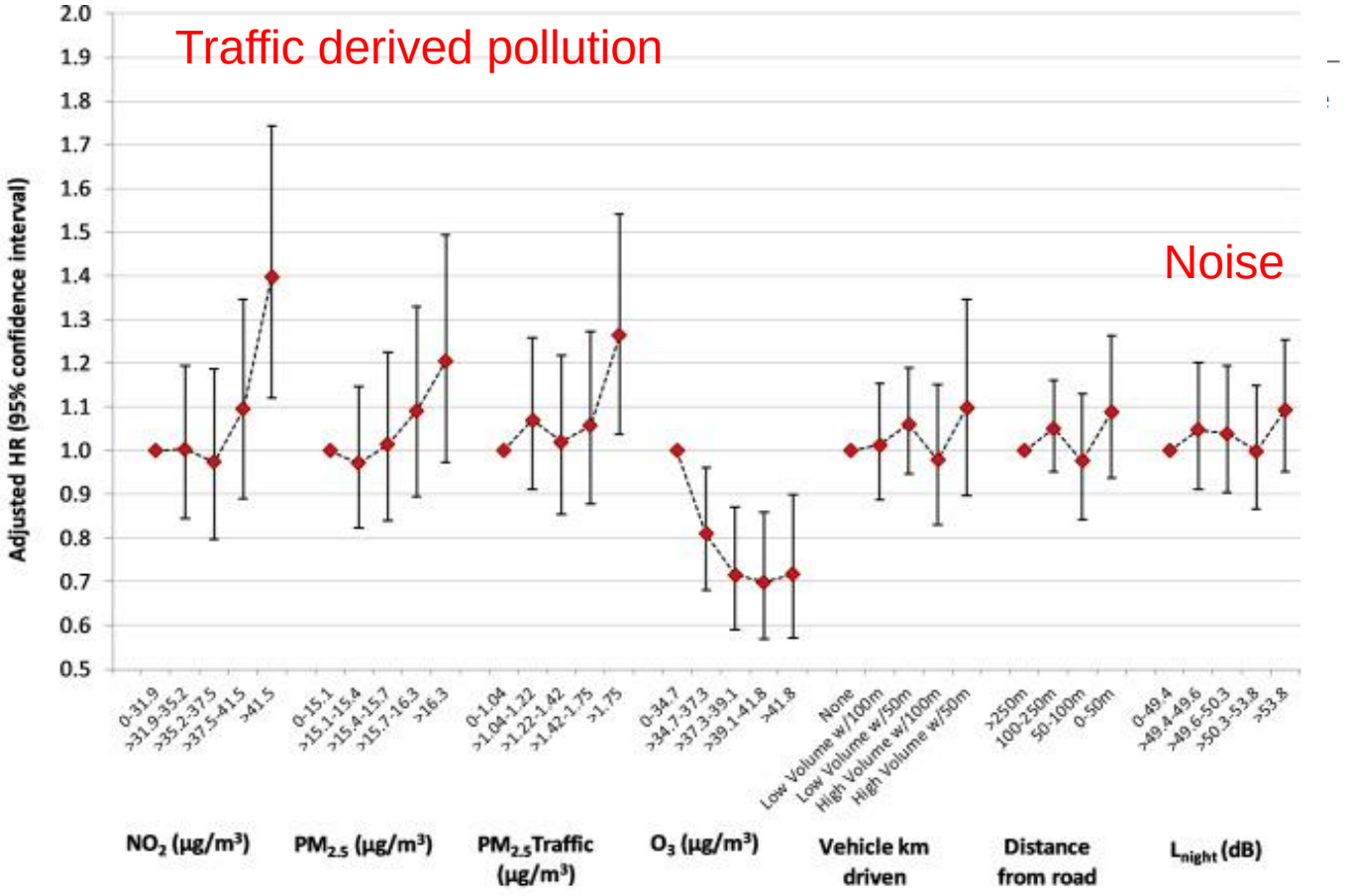
Carey I et al. BMJ Open. 2018; 8(9): e022404.

A first recorded diagnosis of dementia and, where specified, subgroups of Alzheimer's disease and vascular dementia during 2005–2013.

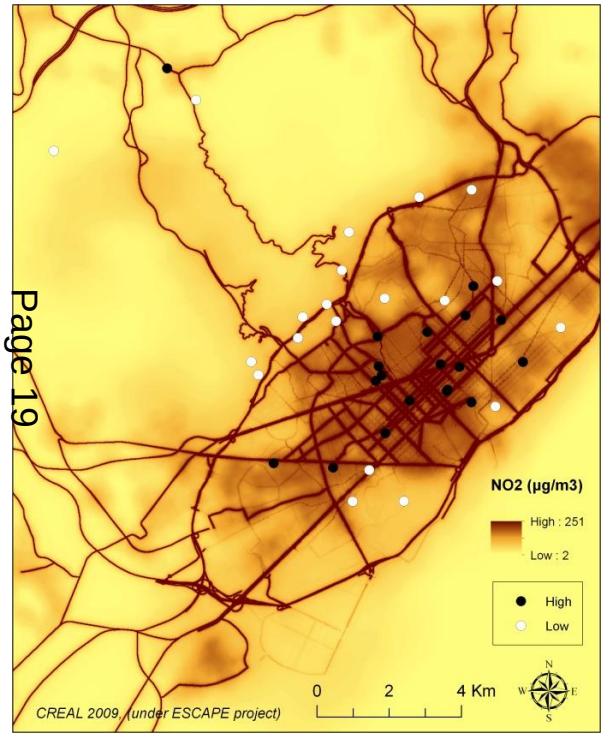


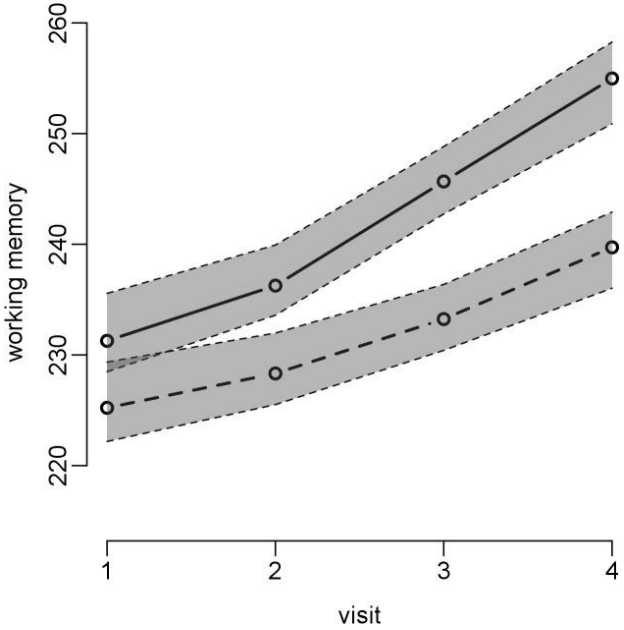


Imperial College London



Sunyer J et al. PLoS Med . 2015 Mar 3;12(3):e1001792.



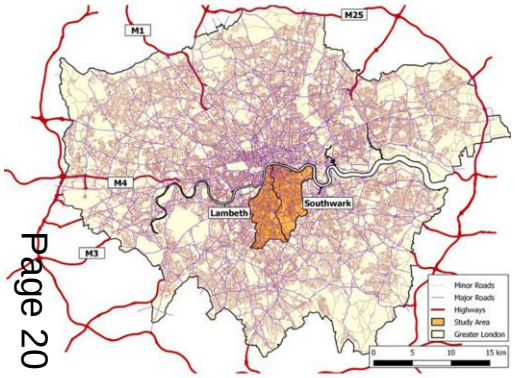


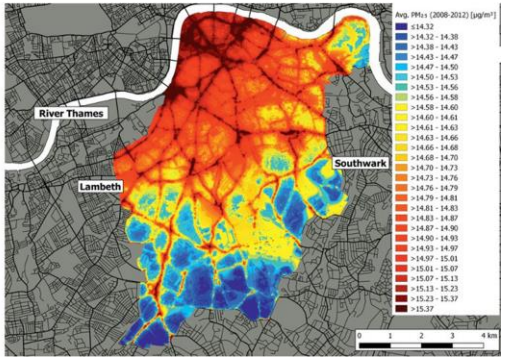
Low pollution schools

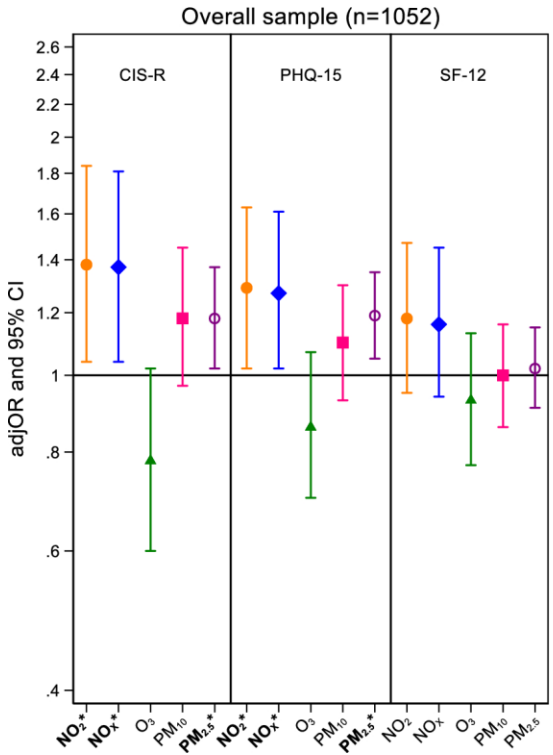
High pollution schools

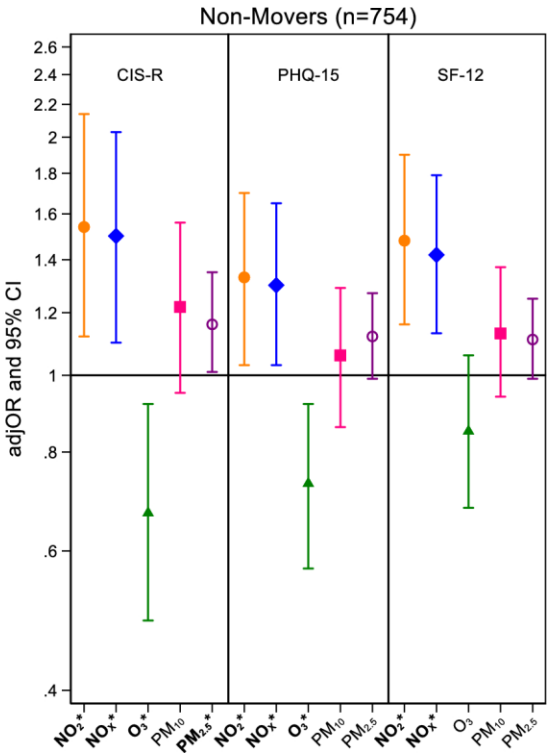
BREATHE study - the researchers assessed whether exposure of children aged 7–10 years to traffic-related air pollutants in schools in Barcelona,

Impacts on mental health



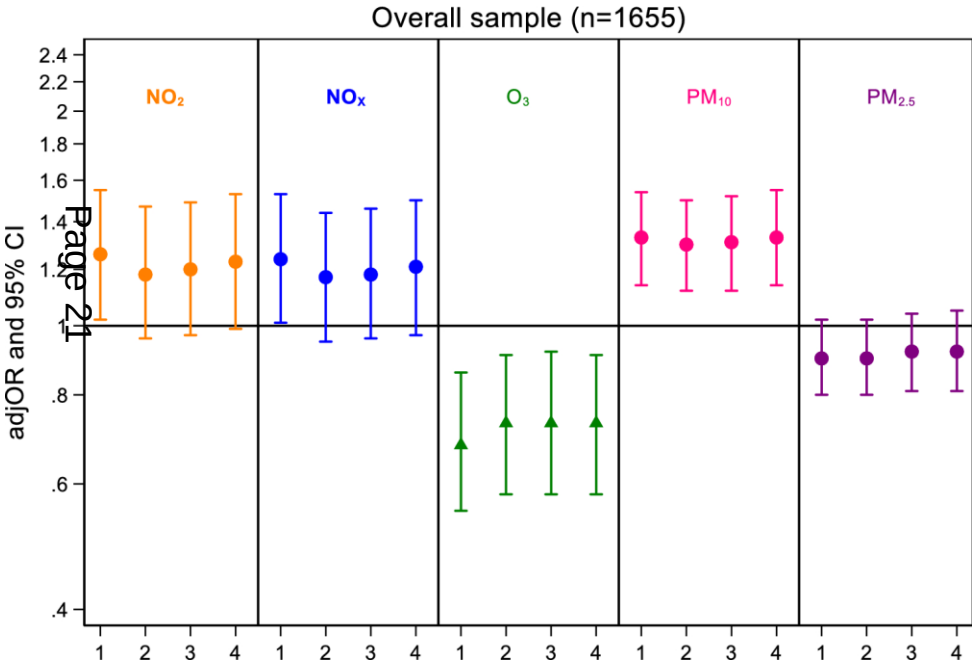






Impacts on mental health (psychosis)

Bakolis I et al. Soc Psychiatry Psychiatr Epidemiol. 2020:1-13.



Model 1: unadjusted
Model 2: Adjusted for age, sex, latent classes of SES, smoking status, ethnicity
Model 3: Adjusted for age, sex, latent classes of SES, smoking status, ethnicity, frequency of drinking, physical activity
Model 4: Adjusted for age, sex, latent classes of SES, smoking status, ethnicity, frequency of drinking, physical activity and Lden

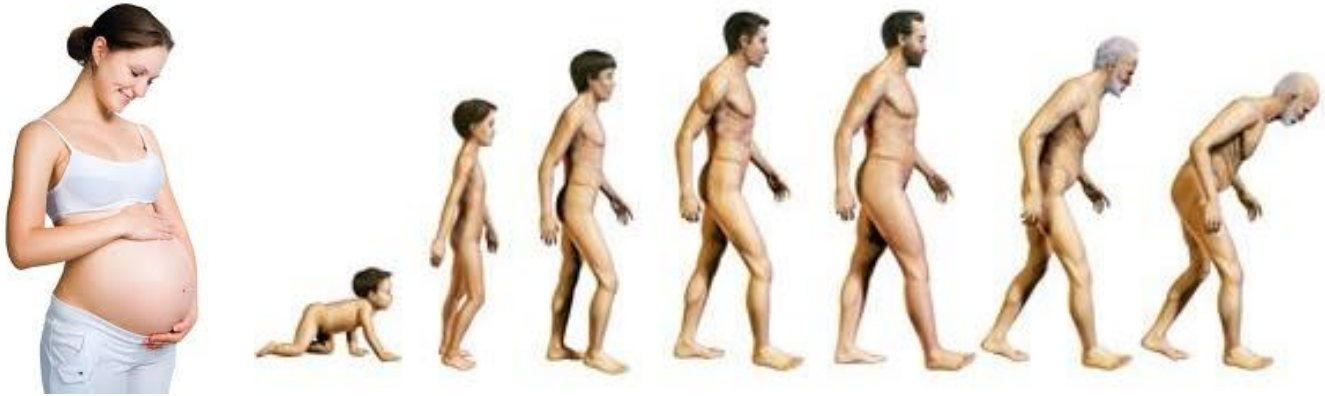
Impacts of Air Pollution across the Life Course

Low birth weight

Smaller lungs
Cognitive ability?

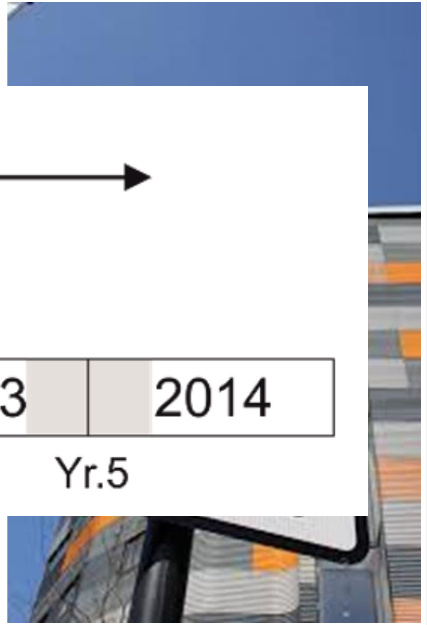
Increased risk of chronic disease
Acute respiratory exacerbations

Acute and chronic
Premature death
Dementia

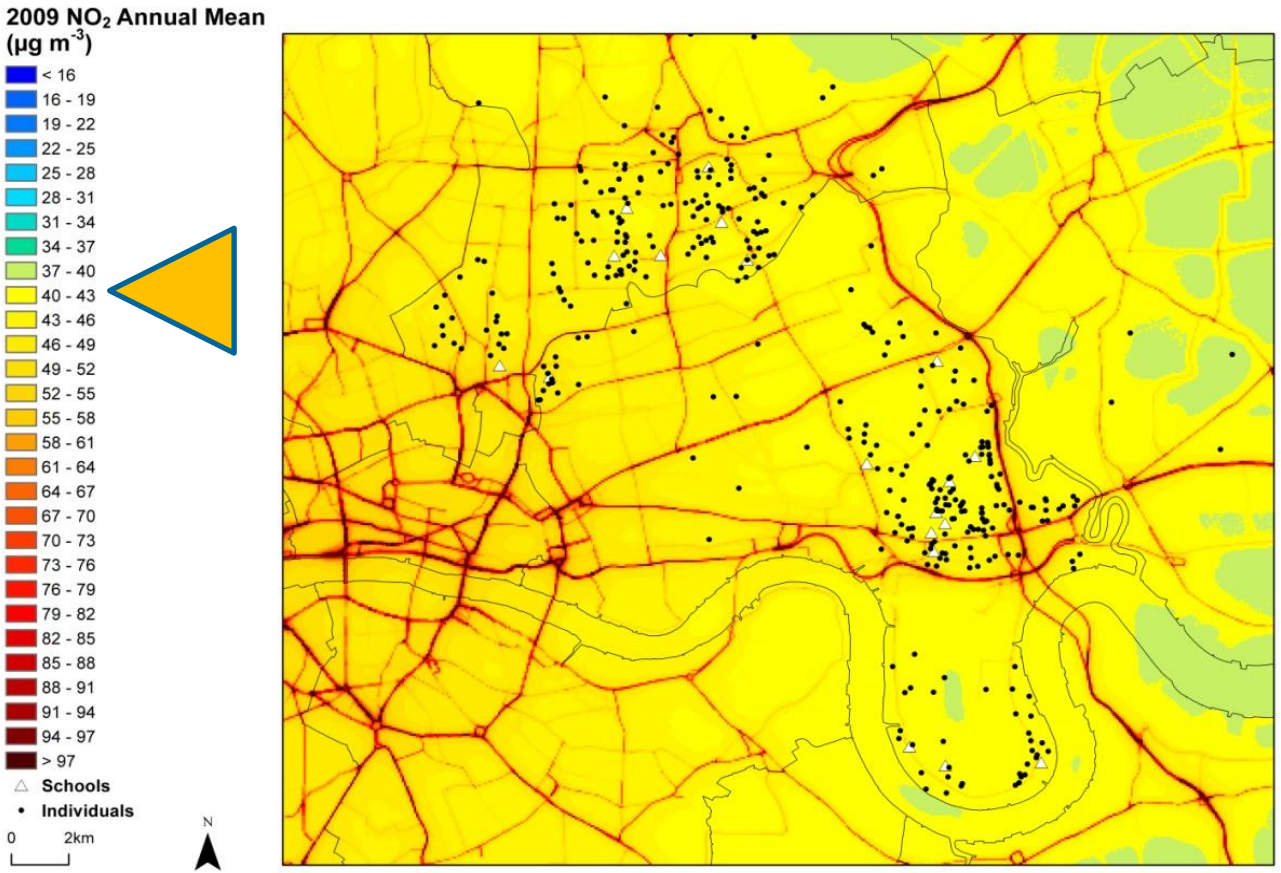


EXHALE study

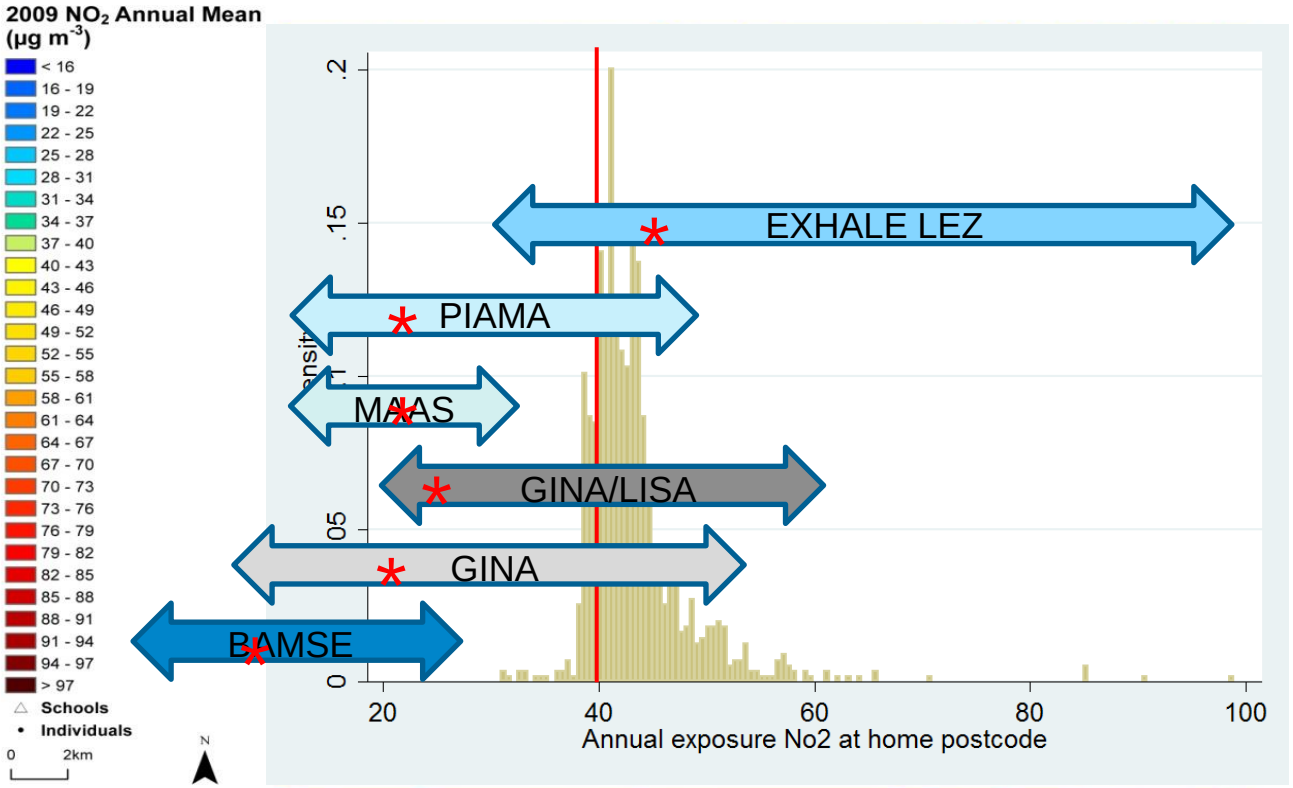
Children's respiratory health in Hackney and Tower Hamlets



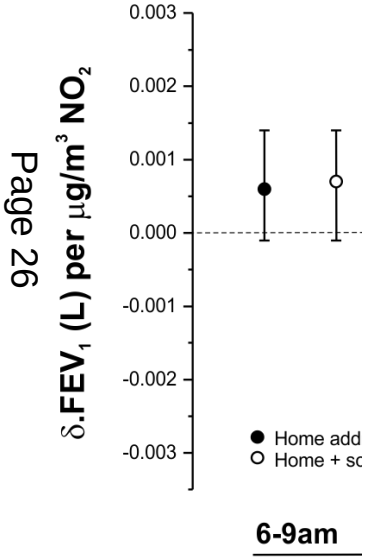
NO_2 in Tower Hamlets & Hackney

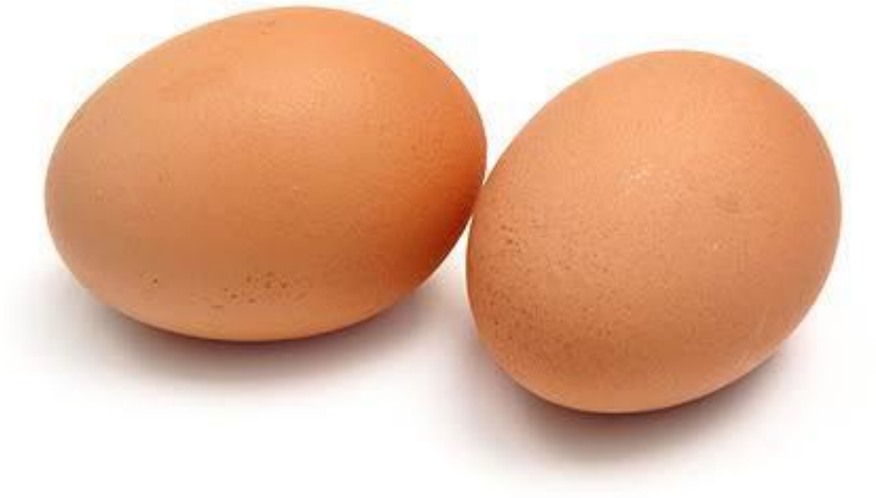


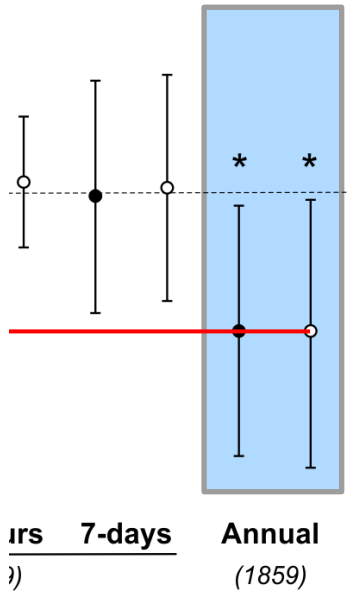
Modelled annual NO_2 concentrations



NO_2 impact on lung function







Lancet Public Health. 2019 Jan;4(1):e28-e40


DOOM
GLOOM

Improved Lung Growth as Pollution Decreases

The NEW ENGLAND JOURNAL of MEDICINE

ESTABLISHED IN 1812 MARCH 5, 2015 VOL. 372 NO. 10

Association of Improved Air Quality with Lung Development in Children

W. James Gauderman, Ph.D., Robert Urman, M.S., Edward Avol, M.S., Kiros Berhane, Ph.D., Rob McConnell, M.D., Edward Rappaport, M.S., Roger Chang, Ph.D., Fred Lurmann, M.S., and Frank Gilliland, M.D., Ph.D.

ABSTRACT

BACKGROUND

Air-pollution levels have been trending downward progressively over the past several decades in southern California, as a result of the implementation of air quality–control policies. We assessed whether long-term reductions in pollution were associated with improvements in respiratory health among children.

METHODS

As part of the Children's Health Study, we measured lung function annually in 2120 children from three separate cohorts corresponding to three separate calendar periods: 1994–1998, 1997–2001, and 2007–2011. Mean ages of the children within each cohort were 11 years at the beginning of the period and 15 years at the end. Linear-regression models were used to examine the relationship between declining pollution levels over time and lung-function development from 11 to 15 years of age, measured as the increases in forced expiratory volume in 1 second (FEV_1) and forced vital capacity (FVC) during that period (referred to as 4-year growth in FEV_1 and FVC).

RESULTS

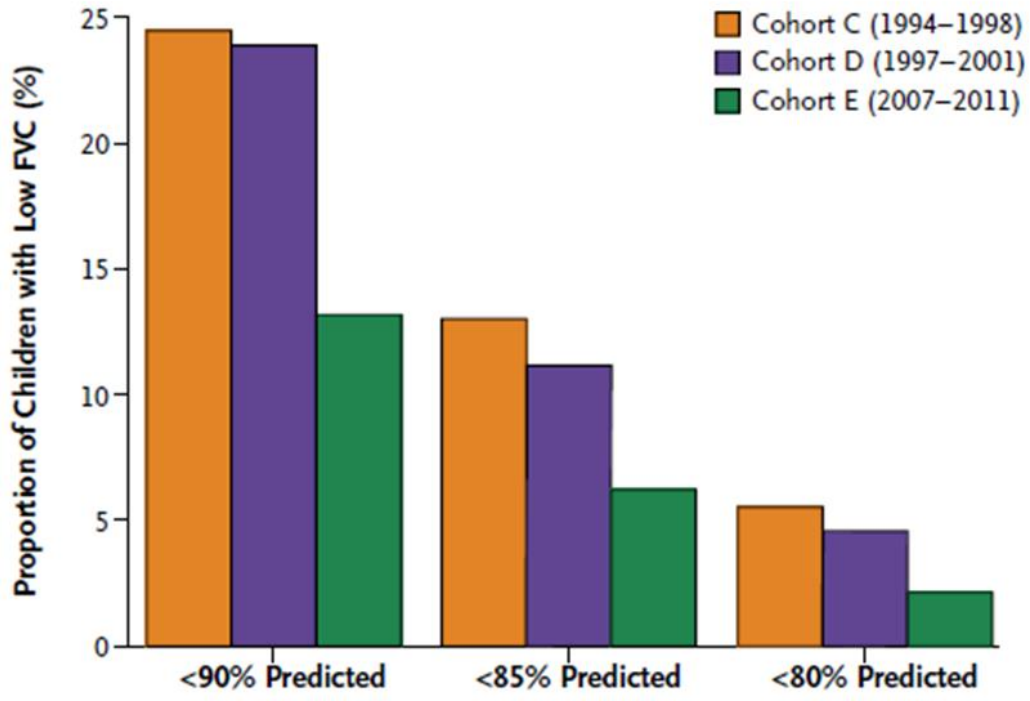
Over the 13 years spanned by the three cohorts, improvements in 4-year growth of both FEV_1 and FVC were associated with declining levels of nitrogen dioxide ($P<0.001$ for FEV_1 and FVC) and of particulate matter with an aerodynamic diameter of less than 2.5 μm ($P=0.008$ for FEV_1 and $P<0.001$ for FVC) and less than 10 μm ($P<0.001$ for FEV_1 and FVC). These associations persisted after adjustment for several potential confounders. Significant improvements in lung-function development were observed in both boys and girls and in children with asthma and children without asthma. The proportions of children with clinically low FEV_1 (defined as <80% of the predicted value) at 15 years of age declined significantly, from 7.9% to 6.3% to 3.6% across the three periods, as the air quality improved ($P=0.001$).

CONCLUSIONS

We found that long-term improvements in air quality were associated with statistically and clinically significant positive effects on lung-function growth in children. (Funded by the Health Effects Institute and others.)

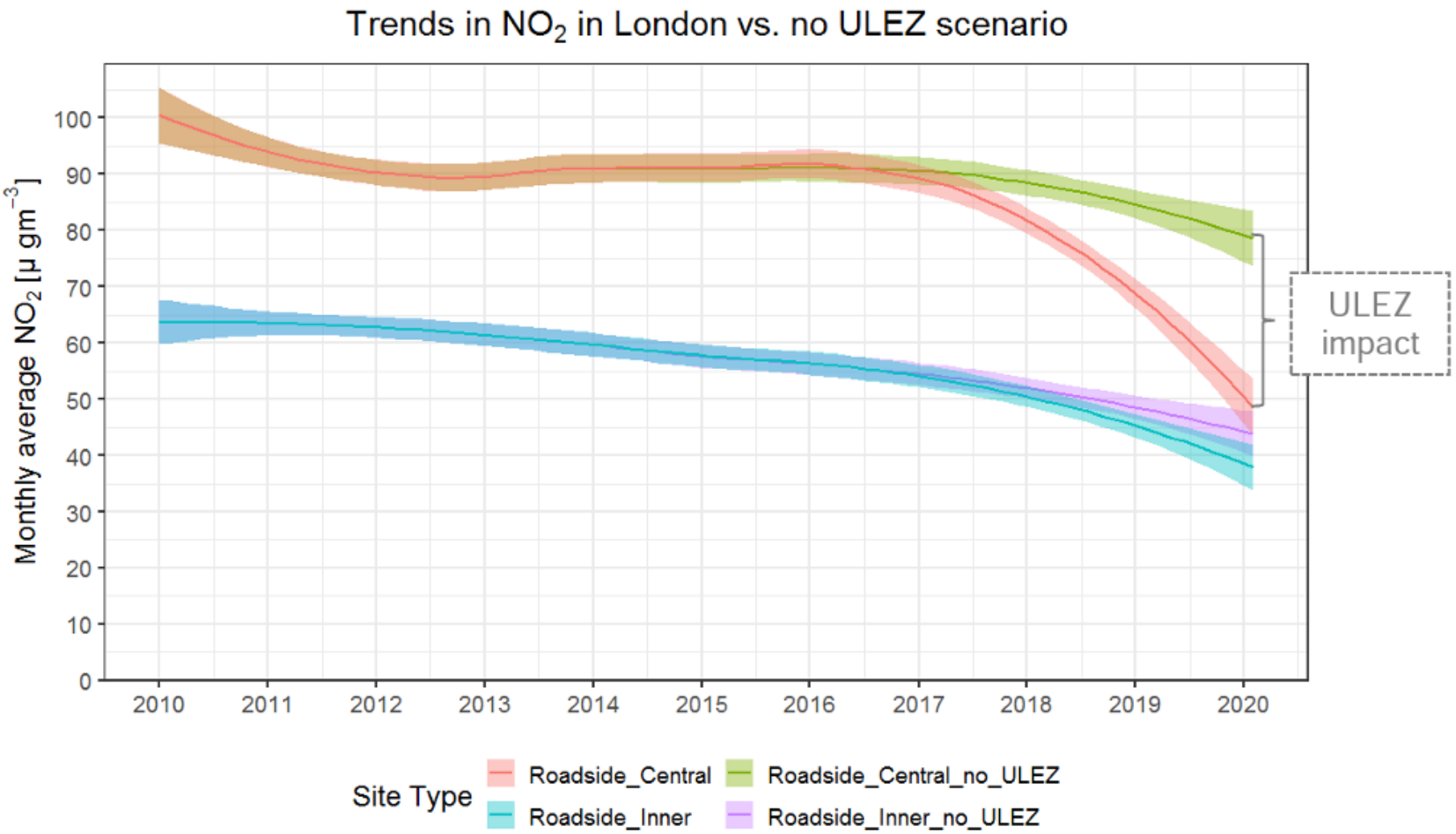
From the Department of Preventive Medicine, University of Southern California, Los Angeles (W.J.G., R.U., E.A., K.B., R.M., E.R., R.C., F.G.) and Sonoma Technologies, Petaluma (F.L.) — both in California. Address reprint requests to Dr. Gauderman at the Department of Preventive Medicine, University of Southern California, 2001 Soto St., 202-K, Los Angeles, CA 90032, or at jimg@usc.edu.

N Engl J Med 2015;372:905-13.
DOI: 10.1056/NEJMoa1414123



Gauderman WJ, et al. NEJM. 2015;372(10):905-913.

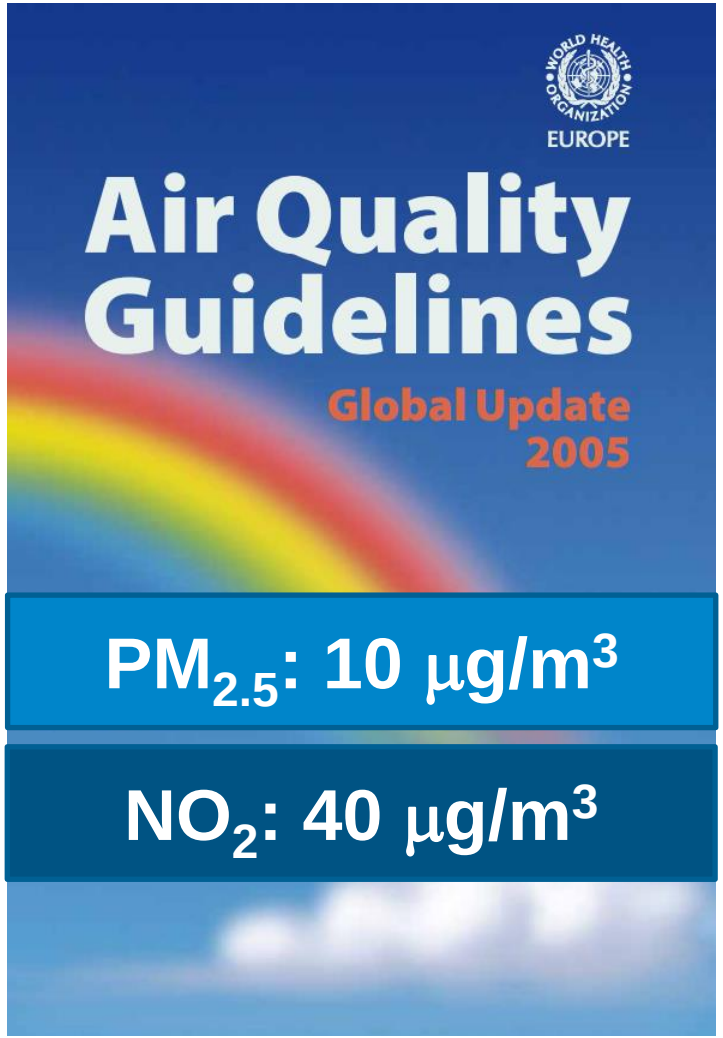

Ultra low emission
ULEZ
ZONE
At all times


Trends in NO_2 in London vs. no ULEZ scenario
Monthly average NO_2 [µ gm^{-3}]
0
10
20
30
40
50
60
70
80
90
100
2010
2011
2012
2013
2014
2015
2016
2017
2018
2019
2020
ULEZ impact
Site Type
Roadside_Central
Roadside_Central_no_ULEZ
Roadside_Inner
Roadside_Inner_no_ULEZ

CHILL school locations

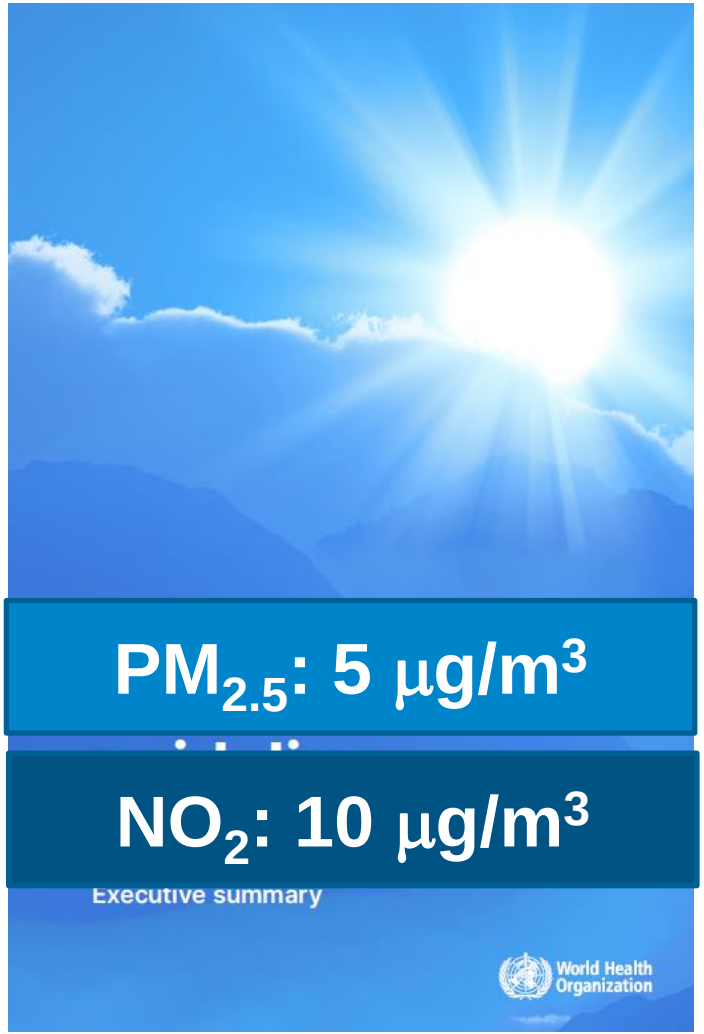
London

Luton



$PM_{2.5}$: 10 µg/m³

NO_2: 40 µg/m³

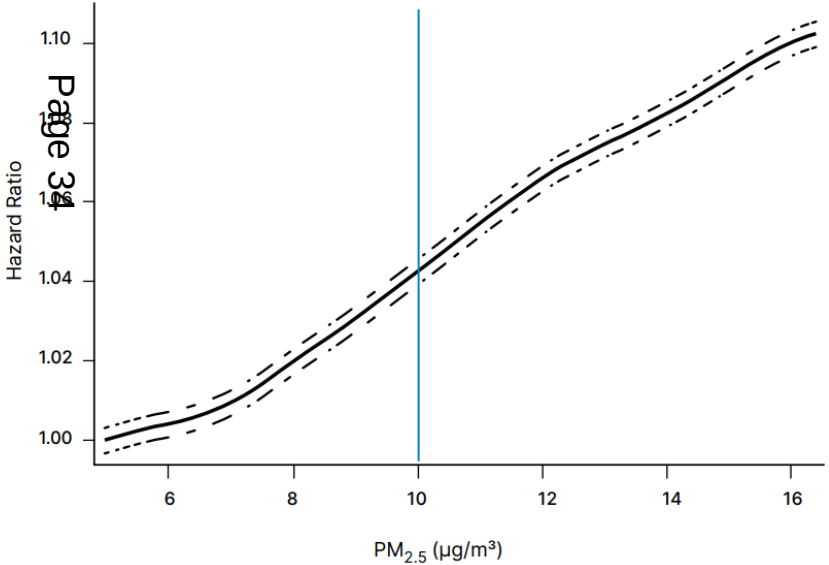


$PM_{2.5}$: 5 µg/m³

NO_2: 10 µg/m³

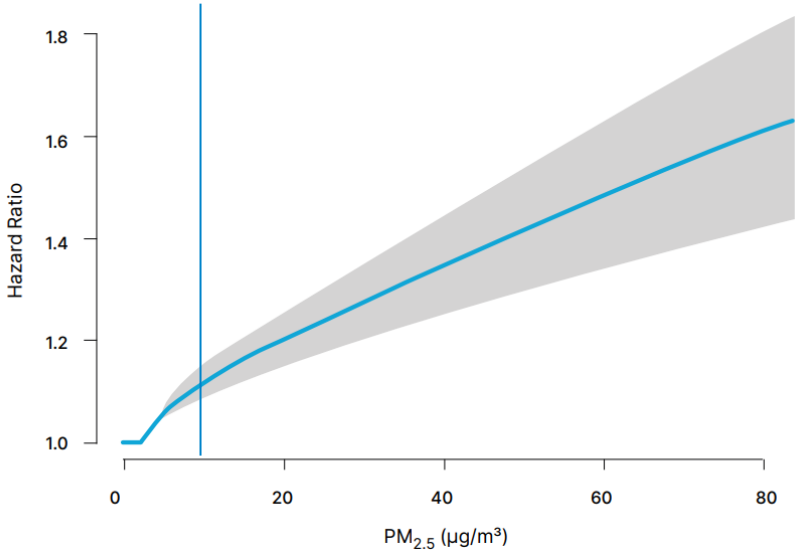
Evidence of health effects below the former WHO guideline value for $PM_{2.5}$

Relationship between long-term $PM_{2.5}$ exposures and all cause mortality in the USA Medicare pop: 60 million +



Di et al. N Engl J Med. 2017;376(26):2513-2522.

Association between long-term $PM_{2.5}$ exposure and mortality from NCDs and lower respiratory illness. Data from 41 different cohort studies



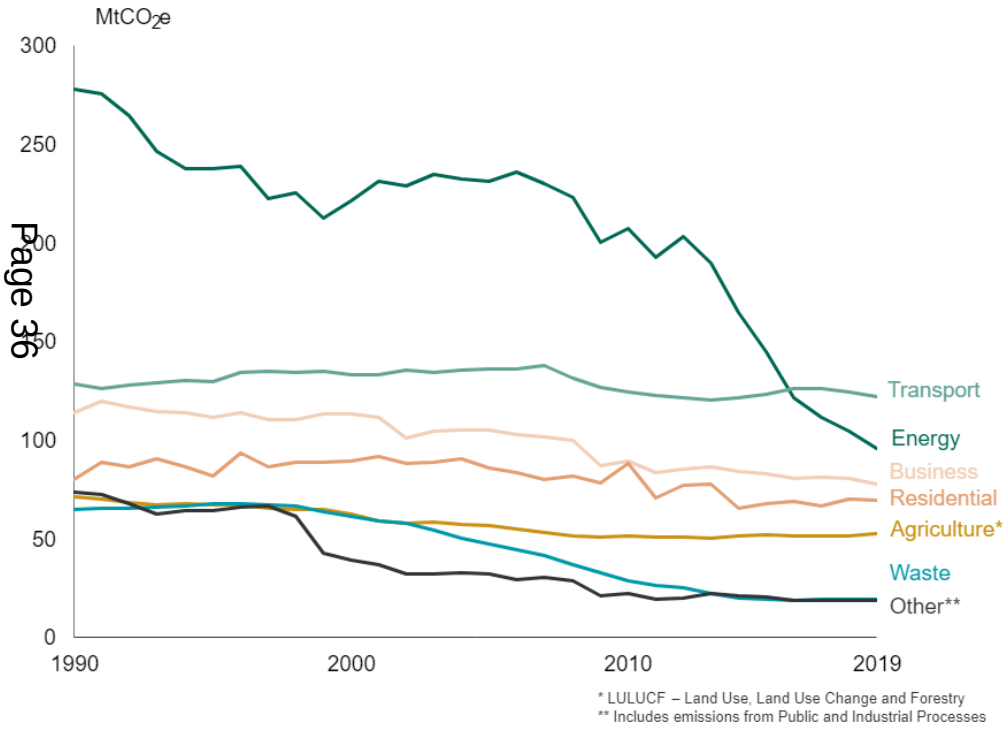
Burnett et al. Proc Natl Acad Sci U S A. 2018;115(38):9592-9597.

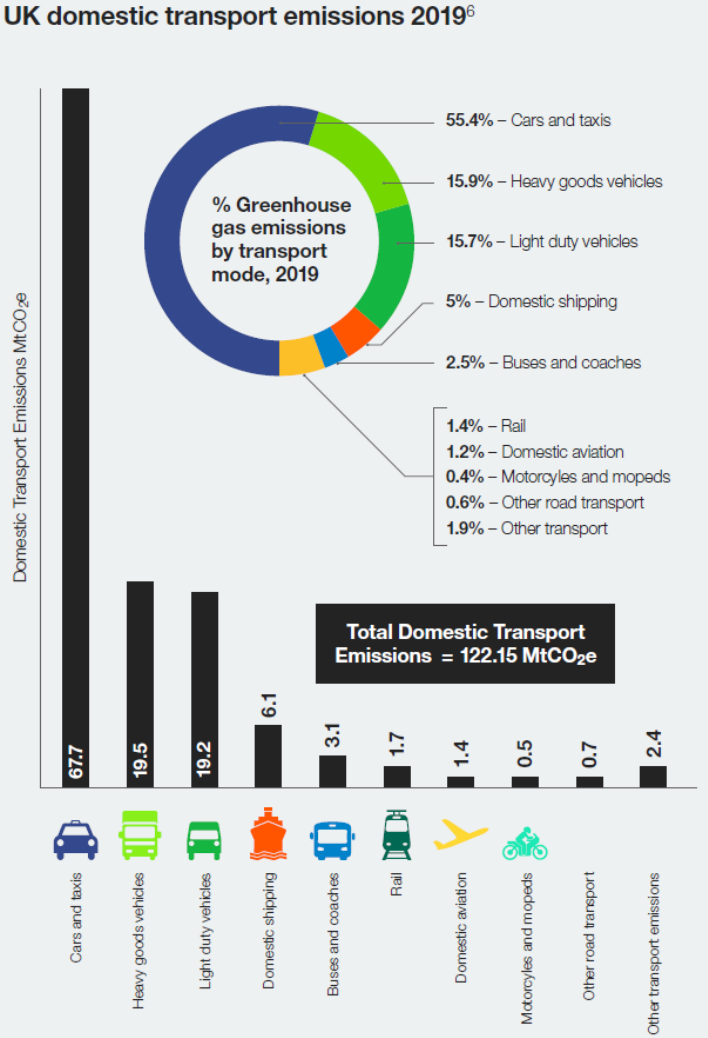
Recommended AQG – with interim targets

Pollutant	Averaging time	Interim target				AQG level
		1	2	3	4	
$PM_{2.5}$, µg/m³	Annual	35	25	15	10	5
	24-hour[a]	75	50	37.5	25	15
PM_{10}, µg/m³	Annual	70	50	30	20	15
	24-hour[a]	150	100	75	50	45
O_3, µg/m³	Peak season[b]	100	70	–	–	60
	8-hour[a]	160	120	–	–	100
NO_2, µg/m³	Annual	40	30	20	–	10
	24-hour[a]	120	50	–	–	25
SO_2, µg/m³	24-hour[a]	125	50	–	–	40
CO, mg/m³	24-hour[a]	7	–	–	–	4

[a] 99th percentile (i.e. 3–4 exceedance days per year).
[b] Average of daily maximum 8-hour mean O_3 concentration in the six consecutive months with the highest six-month running-average O_3 concentration.

Intersection with NetZero





‘Salus populi suprema est lex’. Cicero

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Health in Hackney Scrutiny Commission

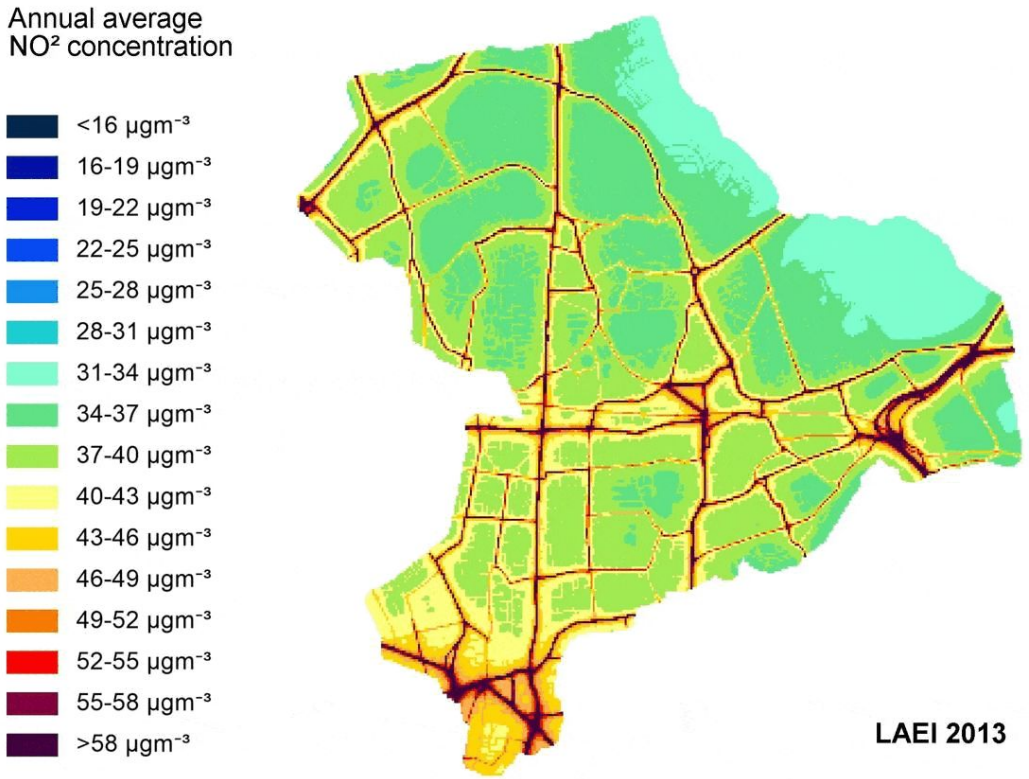
Health impacts of air pollution: evidence and responses

Contents

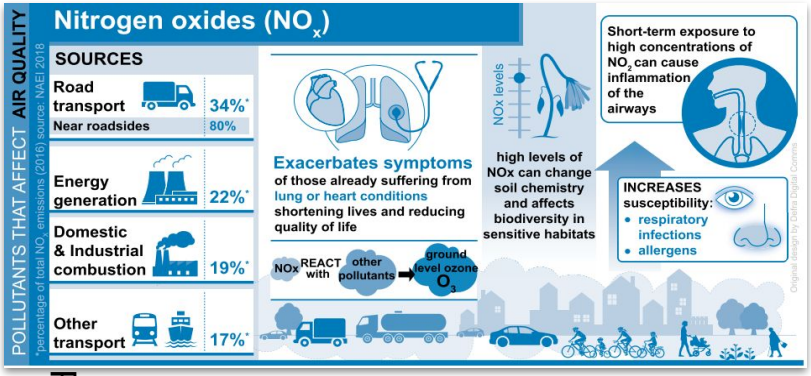
Hackney

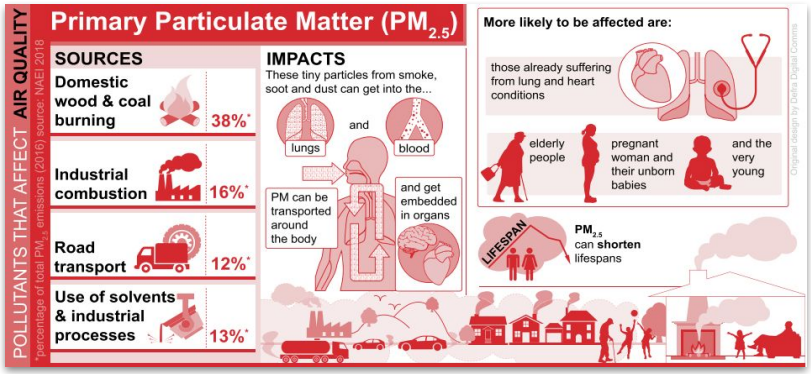
1. Introduction

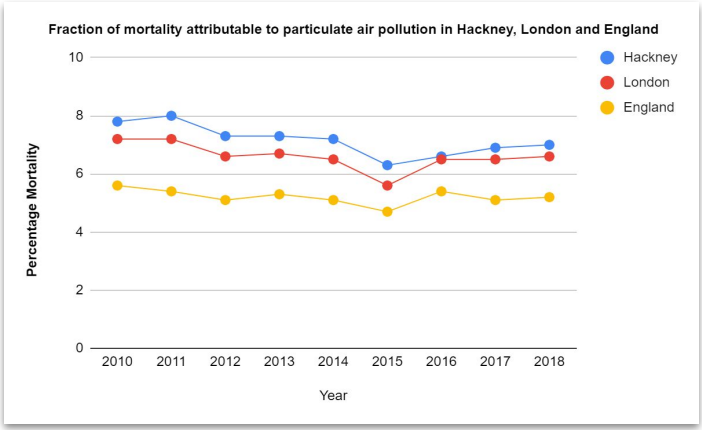
2. Air Quality in Hackney - the local picture



3. Health impacts of air pollution in Hackney







Graph 1: Fraction of mortality attributable to particulate air pollution (PHE, 2020)

	$PM_{2.5}$	NO_2
Primary Care	£4.6m	£3.8m
Secondary Care	£12.0m	£5.5m
Medication	£8.6m	£5.1m
Social Care	£5.1m	£5.3m
Combined Costs	**£30.3m**	**£19.7m**

Table 1: Estimates the costs to local health and care services of $PM_{2.5}$ and NO_2 (LBH, JSNA Draft)

4. National guidance and evidence-based recommendations for public health action on air quality

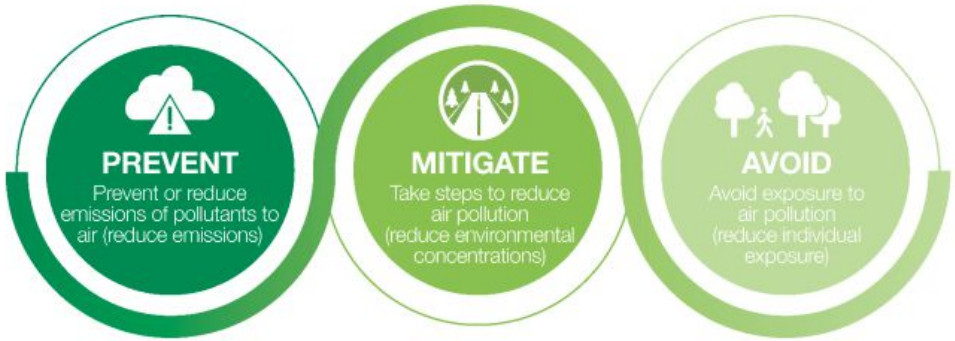
Summary of National Institute for Health and Care Excellence (NICE) Guidance NG70

- Include air pollution within local strategic plans and processes
- Consider air quality within plans for new developments or regeneration programmes
- Consider ways to reduce or mitigate road-traffic-related air pollution
- Consider the implementation of local, potentially cross-borough clean air zones, which act to promote zero or low emission travel and discourage motorised vehicular travel.
- Ensure that air quality is considered within decisions around public sector fleet procurement
- Provide information to the public and health professionals about the impacts of poor air quality on health, and how to reduce local air pollution and minimise exposure to it.
- Develop infrastructure for active travel to support and encourage cycling and other forms of active travel.

4.2 Summary of recommendations from Public Health England evidence review of interventions to improve outdoor air pollution

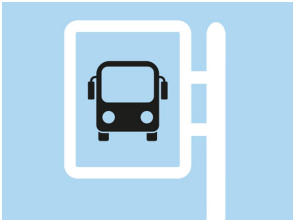
- Local authorities need to work together: joint working is needed to reduce all pollution, rather than displace it from one populated area to another
- Effective strategies require a coherent approach across partners and organisations.
- Everyone has a role to play: individuals need to change behaviours to reduce exposure to and contribution to pollution, and local authorities need to provide leadership and coordinate action.
- Implement targeted interventions to address specific local sources or issues e.g. anti-idling interventions in pollution hotspots or near vulnerable groups (including school children).
- Reduce air pollution at the source to mitigate the consequences: prevent, mitigate and avoid.

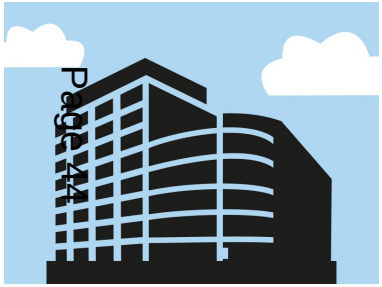
Figure 1: Air pollution intervention hierarchy

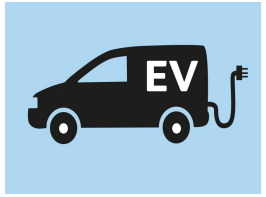


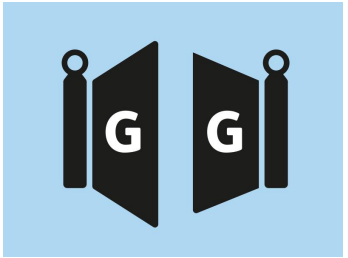
5. Local action to improve air quality

6. Hackney's Air Quality Action Plan (AQAP) 2021-2025









Hackney

7. Action on air quality in partnership with our neighbours and at London level

- Hackney regularly collaborates with our neighbours.
- Hackney has recently been awarded funding from Defra for an air quality and public health project.
- London wide initiatives.

8. Next Steps and Conclusion

- Continued delivery of the Air Quality Action Plan.
- Update of Hackney and City of London Joint Strategic Needs Assessment.
- Ensuring public health forms an integral part of air quality management in the borough.

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Hackney

Health in Hackney Scrutiny Commission

Health impacts of air pollution: evidence and responses

Date: **29th June 2022**

Authors: Stuart Dunlop, Dave Trew (Pollution Control);

Suhana Begum (Public Health), Jayne Taylor (Public Health)

1. Introduction

Air pollution is the largest environmental risk to the public's health in the UK, with estimates of between 28,000 and 36,000 deaths each year attributed to human-made air pollution. There is now a close association between exposure to air pollution and cardiovascular and respiratory diseases, including lung cancer, cognitive disorders, low birth weight and diabetes, along with emerging evidence that children in their early years are especially at risk, including asthma and poorer lung development.[1]

Outdoor air pollution is a significant contributor to ill health and early death in Hackney. Data indicates pollution levels exceed legal standards in some areas of the borough, and exposure to these levels will have a negative impact on the health of all residents and visitors. People with existing conditions, and those who are socioeconomically deprived, are particularly affected, making air pollution a contributor to health inequality. There are chronic long term effects on health and wellbeing, as well as more acute effects on sufferers of respiratory conditions.

This paper provides an overview of air quality in Hackney. It sets out the health impacts of air pollution, summarises the main public health frameworks and principles for effective action on air quality, provides an update on major actions relating to these frameworks, and describes the progress of the specific actions to reduce the health impacts of poor air quality outlined in Hackney's newly adopted Air Quality Action Plan 2021-2025 (AQAP).[2]

2. Air Quality in Hackney - the local picture

2.1 Main Sources of pollutants in Hackney

The main pollutants measured in Hackney are NO_2, which is produced in the atmosphere from a conversion of NO_x, and particulate matter (PM_{10} and $PM_{2.5}$). According to the 2019 London Atmospheric Emissions Inventory data:[3]

[1] Review of interventions to improve outdoor air quality and public health
[2] Air Quality Action Plan 2021-2025
[3] https://data.london.gov.uk/dataset/london-atmospheric-emissions-inventory--laei--2019

- NO_x: In 2019 Hackney emitted 515 tonnes/annum of NOx, this is down from 751 tonnes/annum in 2016 and 844 tonnes/annum in 2013. Road transport is the largest emission source contributing 53% of emissions, this is down from 64% in 2016 and 71% in 2013; the second-highest emission source, industrial/commercial contributes 36% of emissions which is up from 16% in 2016. For reference, industrial/commercial includes construction, heat and power generation, commercial cooking and industrial processes.

- $PM_{2.5}$: In 2019 Hackney emitted 55.9 tonnes/annum of $PM_{2.5}$ which is down from 68.9 tonnes/annum in 2016 and 73.9 tonnes/annum in 2013. Industrial/commercial within Hackney is the largest emission source of $PM_{2.5}$, this makes up 43% of total emissions, this is down from 44% in 2016; transport is the second-largest source with 31% of emissions from this source in 2019, which is down from 35% in 2016.

- PM_{10}: In 2019 Hackney emitted 117.3 tonnes/annum of $PM_{10,}$ which is down from 146.3 tonnes/annum in 2016 and 133.6 tonnes/annum in 2013. Industrial and commercial is the largest contributor of PM_{10} emissions, contributing 41%, this is down from 43% in 2016; transport is the second-largest contributor, making up 34.4% of emissions which is up from 30% in 2016.

2.2 Geographical distribution of pollutants in Hackney

With regards to which areas within Hackney have the highest levels of pollution, the following points are key, as noted in the Joint Strategic Needs Assessment (forthcoming):

- Inner City areas with high traffic density are particularly affected by air pollution. Locally, Hackney Central, Shoreditch, and the area close to the A12 in Hackney Wick have the highest rates of pollution overall.

- The highest modelled concentrations of NO_2 are primarily around major roads.

- Hackney currently has one permanent PM_{10} and $PM_{2.5}$ monitor in Old Street, Shoreditch and four PM_{10} monitors on hire for 2 years. By the end of 2023, we are planning to have an additional 2 PM_{10} monitors and 2 $PM_{2.5}$ monitors installed. The Council has also recently undertaken borough-wide modelling for concentrations for particulate matter and $NO_{2,}$ the modelled data shows that construction activity has the highest contribution to PM_{10} emissions in Hackney and therefore, has a strong influence on the distribution of PM_{10} concentrations. PM emissions are also high around major roads and in areas where solid fuel is burned.

- Estimates suggest that the number of deaths attributable to $PM_{2.5}$ across Hackney each year is evenly spread across electoral wards. This highlights the difficulty in clearly attributing the impacts of air pollution geographically, when people may have exposure where they live, work or go to school, and that they may live in different areas throughout their life.

- There is also significant variation in air pollution exposure over very small areas. Shelter from air movements caused by tall buildings in parts of London for example can create a ‘street canyon’ microclimate, concentrating pollution over time.

- Ambient air pollution has historically been the main focus of air quality strategies and measurements of pollution are typically taken outdoors, whether this be in an urban or rural environment. However, as we spend the majority of our time indoors - at home, work, school or when we socialise indoor air pollution can also largely impact our health. The sources of indoor air pollution include heating and cooking at home, damp and mould, smoke and vapour and chemicals we use for cleaning and decorating. Smoking is one of the major causes of indoor air pollution, especially in generating PM. It releases around 4000 different chemicals. Exposure to environmental tobacco smoke has been linked to greater risk of many adverse health outcomes, such as cancers and respiratory diseases. The World Health Organisation estimate that globally approximately 600,000 deaths are caused by the effects of second hand smoke (breathing in someone else’s tobacco smoke)[4]

- Wood burner use has recently increased in homes, which is contributing to poor indoor air quality despite reduction in other sources, such as traffic. It releases particulate matter PM2.5, one of two pollutants of greatest concern in London linked to adverse health outcomes. A report from the European Environment Bureau showed that even those stoves certified as 'Eco-stoves' produce 750 times more PM2.5 per gigajoule of energy than a modern HGV[5]. It is typically harder to regulate indoor air pollution as conditions in homes can vary significantly and the Council has no authority under the air quality regulations to improve indoor air quality.

  However, the Council’s Housing department undertakes inspection and home visits to identify mould and damp. The necessary repairs and improvements will then be made and advice is given to residents on reducing damp and condensation, increasing ventilation and improvements to cooking facilities.

2.3 Comparison with neighbouring areas

Air pollution tends to be higher in dense urban areas and due to Hackney’s location next to central London, levels are expected to be higher than in a more rural setting. Hackney’s neighbours that are close to Central London therefore, experience similar pollution levels. In 2016, 58% of the Hackney population was exposed to NO_2 concentrations exceeding the annual mean NO_2 national air quality objectives (NAQO) thresholds. 77% of the Tower Hamlets population and 76% of the Islington population were exposed to NO_2 concentrations exceeding the same threshold in 2016[6].

[4] Rivas et al., 2019 https://pubs.rsc.org/en/content/chapterhtml/2019/bk9781788015141-00001?isbn=978-1-78801-514-1&sercode=bk

[5] https://eeb.org/library/where-theres-fire-theres-smoke-emissions-from-domestic-heating-with-wood/

[6] Mayor of London, 2019, London Atmospheric Emissions Inventory

However, the 2019 LAEI data has shown air quality is improving across the whole of London. There was a significant drop in the % of the population being exposed. Hackney dropped from 58% in 2016 to 1.2% in 2019, Tower Hamlets dropped from 76% to 7.5% and Islington dropped from 76% to 3.1%

3. Health impacts of air pollution in Hackney

3.1 Deaths attributable to air pollution

Based on the Global Burden of Disease Study, 54 deaths among residents of Hackney in 2017 were estimated to be attributable to outdoor air pollution. According to the Greater London Air Quality for Public Health Professionals report as many as 8.7% of all deaths among people in Hackney over age 30 in 2019 can be attributed to air pollution (NO_2 and $PM_{2.5}$). Note that the figure for both Tower Hamlets and Islington was 8.9%, for the City of London it was 10.1% and for Waltham Forest, 8.0% of deaths were attributable to the same cause; reinforcing the case for joint action at the London level and among local authorities.

A lot more attention has been drawn to the health impacts of air quality after the coroners' issued a prevention of future death report (PFDR)[7] which attributed air pollution as a cause of death for the young Lewisham girl Ella Adoo-Kissi-Debrah. This was significant because it was the first time air pollution had been defined as a direct cause of death and highlighted how damaging air pollution can be. The formal government response to the PFDR detailed 6 areas for national focus including additional funding, greater public awareness, more systematic approach to asthma management and a consultation on new legal targets.[8]

3.2 Health and care costs attributable to air pollution

The estimated costs to local health and care services caused by air pollution in 2019 for Hackney were over £50 million (£30.3 million for $PM_{2.5}$ and £19.9 million for NO_2). This includes costs to primary care, secondary care, medication and social care (Public Health England, Air pollution: a tool to estimate healthcare costs). [9] Furthermore, the cost of the early preventable deaths attributed to air pollution is estimated at £2m by the UK Treasury.

[7] https://www.judiciary.uk/publications/ella-kissi-debrah/

[8] https://www.gov.uk/government/news/government-responds-to-coroner-after-ella-kissi-debrah-inquest#:~:text=The%20Government%20has%20today%20(17,public%20awareness%20about%20air%20pollution.

[9] London Borough of Hackney Draft Joint Strategic Needs Assessment

4. National guidance and evidence-based recommendations for public health action on air quality

4.1 Summary of National Institute for Health and Care Excellence (NICE) Guidance NG70[10]

- Include air pollution within local strategic plans and processes, including the Local Plan, core strategy, transport plan, and health and wellbeing strategies, with a focus on zero or low-emission travel.
- Consider air quality within plans for new developments or regeneration programmes, ensuring appropriate steps are taken to reduce the need for motorised travel and to minimise exposure to air pollution.
- Utilise Community Infrastructure Levy funding to implement air quality monitoring and measures to reduce road traffic-related emissions.
- Consider ways to reduce or mitigate road-traffic-related air pollution, including initiatives to reduce motorised vehicle trips, encourage the use of no or low emission vehicles, and review tree and vegetation management.
- Consider the implementation of local, potentially cross-borough clean air zones, which act to promote zero or low emission travel and discourage motorised vehicular travel.
- Ensure that air quality is considered within decisions around public sector fleet procurement and that the staff driving these vehicles are adequately trained in how to drive in such a way as to minimise fuel consumption and air pollution.
- Provide information to the public and health professionals about the impacts of poor air quality on health, and how to reduce local air pollution and minimise exposure to it.
- Develop infrastructure for active travel to support and encourage cycling and other forms of active travel.

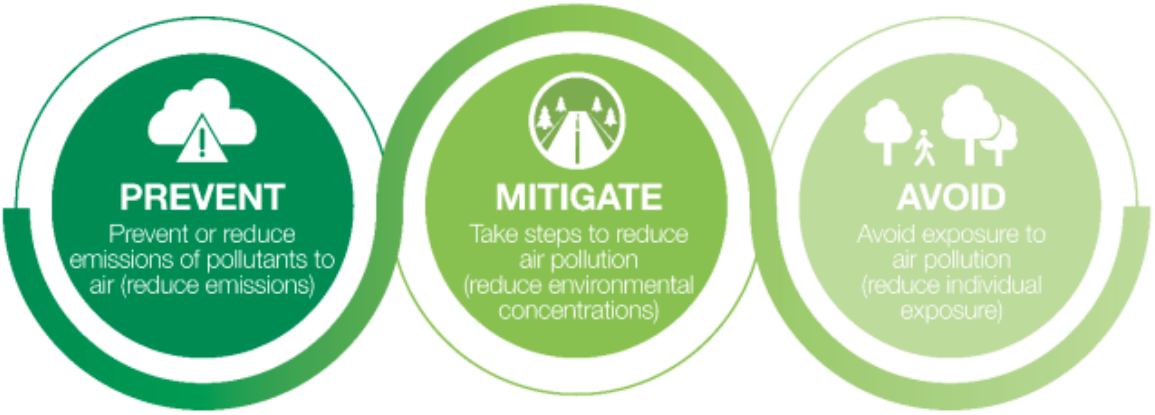
4.2 Summary of recommendations from Public Health England's evidence review of interventions to improve outdoor air pollution[11]

- Local authorities need to work together: air pollutants do not respect borders, and joint working is needed to reduce all pollution, rather than displace it from one populated area to another, e.g. clean air zones can be across the borough.

[10] NICE Guidance NG70: Air pollution - outdoor air quality and health, 2017
[11] Public Health England, 2020, Review of interventions to improve outdoor air quality and public health

- Effective strategies require a coherent approach: these should cover local authority functions such as environmental and public health, transport, spatial planning, relations between local government and local communities, as well as other public and private sector organisations.
- Everyone has a role to play: individuals need to change behaviours to reduce exposure to and contribution to pollution, and local authorities need to provide leadership and coordinate action.
- Public sector organisations should lead by example: Employers and private sector organisations should engage with initiatives.
- Reduce air pollution at the source to mitigate the consequences: the hierarchy for the most effective approaches is to prevent (reduce emissions), mitigate (reduce air pollution and environmental concentrations), then avoid (avoid and reduce individual exposure) (see figure 1 below)

Figure 1: Air pollution intervention hierarchy



- Implement targeted interventions to address specific local sources or issues e.g. anti-idling interventions in pollution hotspots or near vulnerable groups (including school children).
- Reduce emissions from existing vehicles by planning for active travel and public transport (e.g. driving restrictions, anti-idling enforcement).
- Promote uptake of active transport by default and where not possible replace vehicles with low emission vehicles and reduce demand for more polluting forms of transport (e.g. low emission zones, lorry restrictions).
- To influence behaviour and raise awareness about air pollution and health, provide information to businesses and the public on what companies and individuals can do, and explain how people can minimise their exposure to air pollution.

- Clean by design: local planning frameworks and processes should ensure any housing or other development is designed by default to reduce pollution, and should support walking, cycling and clean public transport, as well as provide charging points for future ultra-low emission vehicles.

- Focus on children: children are particularly vulnerable to the effects of air pollution. Exposure to air pollution in early life can have a long-lasting effect on lung function. Local authorities should consider interventions such as no-idling zones outside schools, making it easier to walk or cycle to school, and increasing public awareness relating to air pollution and the impacts on children.

4.3 Co-health benefits of actions to improve air quality

Action to address air quality has numerous important co-health benefits. A reduction of air pollution levels can also mean reducing premature deaths and diseases from stroke, heart disease, lung cancer, and both chronic and acute respiratory diseases, including asthma.[12]

There is also emerging evidence to show an association between certain air pollutants and a range of mental health outcomes including depression, dementia and cognitive development.[13]

Further initiatives aimed at improving air quality, such as increasing physical activity through active travel can also contribute to the health and well-being of residents.

5. Local action to improve air quality

The following are actions the Council has undertaken to improve air quality across the borough.

5.1 Reducing transport-related emissions

- Filtering traffic to eliminate through-traffic (‘rat runs’), reduce total number of vehicle journeys and improve streets for walking and cycling and contribute to improving air quality.

- Low Traffic Neighbourhoods are areas of road re-designed to limit overall vehicle transport travelling through streets and aim to reduce pollution levels, whilst also creating quieter safer roads. LTNs also have numerous public health objectives as well as improving air quality such as increasing walking and cycling rates, reducing opportunities for traffic collisions and reducing severance with positive impacts seen on community cohesion and social connections.

- Charging polluting vehicles through emissions-based parking permits and charging diesel and polluting vehicles more to discourage their use.

[12] World Health Organisation: Fact Sheet - Better Air for Better Health
[13] Air pollution, mental health, and implications for urban design

- Anti-Idling events have been held at 7 different schools across Hackney as part of a wider anti-idling campaign. The campaign has also seen 51 signs installed in an attempt to encourage behaviour change.

- The Council fleet includes 75 electric vehicles with all of Hackney's waste services and parks refuelling at Millfields Depot using biofuels. To further reduce harmful emissions there is a move towards using biofuels for other vehicles, along with adding to the fleet's 30 bicycles and cargo bikes.

- Supporting electric vehicles work has been completed on establishing over 300 electric charging points, and procurement of chargers is currently taking place with a view to introducing 3,000 charging points over the next 15 years.

- Ultra-Low Emissions Zone: Hackney lobbied TfL successfully for the Ultra-Low Emissions Zone to be extended in 2021 to the whole of Hackney and is working with them to introduce a low emissions bus zone in Hackney. These zones tackle the worst pollution hotspots by concentrating cleaner buses on the most polluted routes.

- Ultra-low emissions streets Ultra-low emissions streets remove polluting vehicles from 5 streets in Shoreditch at peak hours, developed in partnership with Islington Council and the Mayor of London.

- Zero Emissions Network (ZEN) supports businesses in the City Fringe to switch to low or zero-emissions vehicles. At present, 1600 business members and over 1100 residents are part of ZEN.

- Low emissions neighbourhood to combat air pollution in the City Fringe through introducing schemes that prioritise walking, cycling and the use of electric vehicles. The scheme is developed in partnership with Islington and Tower Hamlets Councils and funded by the Mayor of London. A further low emission neighbourhood has been launched in Stoke Newington that included the introduction of a bus gate on Church Street and associated side street closures.

- Promoting walking and cycling Streetscene delivers a number of behaviour change campaigns and free services to promote walking and cycling and reduce the number of cars on the road - including an annual Car Free Day event and free cycle lessons to everyone who lives, studies, or works in the borough. Hackney has long worked to be London's leading borough for cycling, and now has a higher proportion of journeys made by bike than any other borough. A network of 'dockless' cycle hire stations has also been developed, there are 2758 parking stands, 106 bike ports, 414 cycle hoops and there is a manifesto commitment to increase the number of bicycle parking stations across the borough.

- Sustainable Travel to School Programme: Hackney has focused on achieving a modal shift in the school community through the Sustainable Travel to School Programme. This programme includes supporting behaviour change initiatives, such

as Bikers' Breakfasts and Walk Once a Week, and delivering programmes like School Streets.

- Parklets and cycle hangers Hackney has implemented 10 parklets and installed 650 cycle hangers in parking bays to increase the uptake of cycling or walking rather than driving.

5.2 Clean by design

- The Council works with developers through the planning process to ensure that building work and new developments do not add to poor air quality in the borough and that the health of future occupiers is protected. For instance, if a development is proposed for residential use in an area exceeding national maximum air pollution thresholds, measures must be implemented to protect residents from the impacts of air pollution.

- To tackle air quality and promote walking and cycling, Hackney's Local Plan 33 states that all new developments must be car free, with parking limited to disabled spaces or essential servicing needs.

5.3 Reducing exposure to air pollution

- Hackney is planting over 30,000 extra trees, including 5,000 street trees, which will contribute to absorbing and blocking harmful pollutants.

5.4 Tackling non-transport sources of pollution (cooking, heating, construction)

- Zero Emissions Network (ZEN) has run a behaviour change campaign in Hackney[14] on domestic and commercial solid fuel burning. The aim of the campaign was to raise awareness of the contribution solid fuel-burning has to levels of particulate air pollution and make people aware of the ways they can eliminate or reduce their emissions from solid fuel burning.

- As part of a Pan London Project funded by the Mayor of London, all Non-Road Mobile Machinery (NRMM) used on development sites within Hackney, must meet the relevant emission standards of the Low Emission Zone. Regular site inspections are also made by Pan London Project officers to sites in Hackney to monitor compliance with the standards. Working to these emission standards minimises particulate emissions from NRMM on construction sites.

Further details and links are available on Hackney's Air Quality webpage. [15]

6.0 Hackney's Air Quality Action Plan (AQAP) 2021-2025

[14] Hackney Council. Tackling Poor Air Quality: Solid Fuel Burning
[15] Air Quality in Hackney

To provide a wider context for action to improve air quality that may improve public health, Hackney's recently updated AQAP has established a set of themes and priorities that have been designed to reduce the health harms of air pollution and align closely with all the Greater London Authority's recommendations.[16] Hackney also aims to go further by working towards meeting the more stringent World Health Organisation's Guideline Values as outlined in section 6.3 of this report.

An update on the progress with delivering the specific actions to reduce the health impacts of air quality listed in the Air Quality Action Plan is prepared each year and made publicly available. A range of actions has been, and are being, taken by a wide variety of service areas, including Land Water Air Team, Streetscene, Planning, Fleet, Parks, Parking and Public Health.

6.1 Themes

Monitoring and other core statutory duties*:* evaluating the air quality monitoring throughout Hackney to keep track of compliance with our core statutory objectives.

Emissions from development and buildings*:* emissions from construction alone account for approximately 37% of the PM_{10} emissions across Hackney, and therefore work in this area is important in reducing particulate concentrations. This will focus on air quality mitigation through the planning system and correlates with the Council's sustainability objectives.

Public health and awareness-raising: increasing awareness can drive behavioural change to lower emissions as well as reduce exposure to air pollution. For example, a shift in attitude with respect to solid fuel burning through increasing awareness of the impact this causes can help facilitate overall behaviour change.

Delivery servicing and freight: ensuring delivery servicing and freight vehicles are re-evaluated as these are usually heavy-duty diesel-fueled vehicles with high primary NO_2 emissions. Assessment of the impacts is especially important as our shopping habits change, particularly in response to the Covid pandemic

Borough fleet*:* Hackney's fleet includes a mixture of light and heavy-duty diesel-fuelled vehicles, now alongside 66 electric vehicles. Building on our 2018 Green Fleet of the Year award, we will continue to make improvements in our own fleet, thereby leading by example.

Localised solutions: these seek to improve the environment of neighbourhoods through a combination of measures such as Low Traffic Neighbourhoods, traffic filtering, parking schemes and biodiversity projects.

Cleaner transport*:* road transport is the main source of air pollution in London and Hackney. We will continue to incentivise and facilitate a change to walking, cycling, public transport and ultra-low emission vehicles (such as electric) as far as possible.

[16] LLAQM Borough Air Quality Action Matrix

***Schools and communities**:* implementing initiatives that target the most susceptible groups in Hackney in order to ensure those most at risk are not disproportionately affected by the impacts of poor air quality.

Lobbying: Hackney will continue to lobby and influence regional and national organisations and stakeholders on policies and issues beyond Hackney's influence to introduce progressive measures aimed at improving air quality.

6.2 Our 10 key priorities

1. Adopt updated WHO guidelines for PM_{10} and $PM_{2.5}$ with a compliance deadline by 2030.
2. Ensure standards for Non-Road Mobile Machinery (NRMM) are met through the use of planning conditions and by carrying out compliance monitoring checks.
3. Minimise emissions from construction through the development of Hackney's own Supplementary Planning Document (SPD) and code of construction for air quality which goes above and beyond the GLA Supplementary Planning Guidance (SPG).
4. Run air quality campaigns to raise awareness and encourage behaviour change.
5. Assess the potential impact of installing Ultra-Low Emission Vehicle (ULEV) infrastructure (electric vehicle charging points, rapid electric vehicle charging points).
6. Increase uptake of electric vehicles and ensure electric vehicle charging infrastructure is commensurate with growth in the borough's Fleet.
7. Ensure that Transport and Air Quality policies and projects are integrated and assess the air quality benefits of the actions in Hackney's Transport Plans and Strategies.
8. Provide new cycling and walking infrastructure (including cycle parking) and assess air quality impacts of new infrastructure.
9. Deliver updated Parking and Enforcement Plan.
10. Lobby Central Government to control and reduce emissions that are outside of Hackney's authority.

6.3 Actions specific to reducing the health impacts of air quality (AQAP - Progress)

As we have become more aware of how exposure to high levels of air pollution can cause a variety of adverse health outcomes, it was considered essential to include public health as a theme in the updated AQAP. As the AQAP was published in July 2021 there is still much

work to be done; however, the following provides a progress update on specific actions that relate to public health and improving air quality.

Action 1. Adopt updated WHO guidelines for PM10 and PM2.5 with a compliance deadline of 2030:

- Adoption of the World Health Organisation's more stringent air quality guidelines.

- In August 2021 the updated AQAP was formally published, with one of the top priorities being commitment to adopting the more stringent WHO guidelines for NO_2 and PM. At the time of publication, the WHO's recommended annual mean targets for PM10 and PM2.5 were 20 ug/m3 and 10 ug/m3 respectively. These are the levels that Hackney has committed to achieving with a compliance deadline of 2030. However, in September 2021, the WHO tightened its quality guidelines and adopted new annual mean guideline thresholds of 15 ug/m3 for PM10 and 5ug/m3 for PM2.5. Whilst these guidelines are ambitious, Hackney is still committed to achieving the WHO levels and supports the WHO interim target of compliance with an annual mean of 10ug/m3 for PM2.5 by 2030.

Action 18. Raise awareness of air quality and encourage behaviour change through campaigns and working with local communities:

- Public consultation took place for Hackney's 2020-2025 Air Quality Action Plan. During the consultation over 670 responses were received and the AQAP was amended to take account of the feedback received.

- An Air Quality Awareness Survey is being developed but will be carried out among targeted groups during the summer of 2022.

- Events were held at 7 different schools as part of the pan-London campaign to discourage engine idling.

- Clean Air Day was promoted on social media. This included messages on Twitter providing advice on ways to minimise air pollution from transport as well as celebrating the planting of more than 2500 street trees since 2018.

- Car-Free Day in September 2021 was promoted with the launch of a publicly available cargo bike-sharing scheme, the first of its kind in the country.

Action 19. Develop a Joint Strategic Needs Assessment (JSNA) that will focus on air quality and public health:

- A JSNA currently exists in draft form. This will be revised and updated by the Intelligence Team in Public Health before its publication in late 2022.

Action 20. Develop and promote the existing high air pollution alert system:

- LB Hackney is a member of the AirTEXT consortium. Details about registering to receive free pollution alerts are included on the Council website. At the end of 2021, there were 377 active subscribers receiving airTEXT alerts for Hackney by email, text and voicemail. This was an increase of 60 since the end of 2020.

- Where the Mayor of London issues pollution alerts, awareness of them is promoted through Hackney's own social media channels.

Action 21. Continue to collaborate in the cross-borough project encouraging canal boat owners to switch from wood-burning stoves and diesel engines to electric or more sustainable fuel:

- Hackney has teamed up with Tower Hamlets and Newham to undertake a joint communication campaign, which includes linking to information on Hackney's website. Additional communication was carried out in conjunction with Canal and River Trust. Officers have contacted marinas in the borough as a way to spread information on solid fuel burning and also engaged with local groups when complaints have been received.

As children and the elderly are particularly susceptible to poor air quality, the AQAP also contains actions that focus on improving air quality to benefit public health in Schools and Communities:

Action 40. Reduce air pollution near schools and protect children through the delivery of the School Streets Programme:

- The objective is to reduce /eliminate traffic related to the school run, improve air quality and also reduce parking and congestion in school-related streets as well as promote healthy and sustainable travel to school by children and improve road safety.

- There are now 41 permanent school streets across Hackney

Action 41. Reduce air pollution at schools and protect children by delivering more green screens:

- In primary schools where pollution is higher and it is suitable to do so, install green screens to act as a barrier and reduce exposure to transport emissions.

- Green screens have been installed at St Mary's Church of England Primary School and Grasmere Primary School with further green screens planned at other schools.

Action 44: Review pollutant concentrations at all healthcare centres, hospitals, care homes and schools and where relevant implement an audit and improvement scheme:

- The target date for this action is 2025. Diffusion tubes have been placed at Hackney health centres and Hospitals.

- Borough-wide modelling of NO2 and PM was carried out to determine concentrations at healthcare centres and hospitals for the year 2018. This will act as a benchmark for future years.

7. Action on air quality in partnership with our neighbours and at London level

The London Boroughs of Islington and Tower Hamlets and the City of London are members of cross-borough initiatives such as Zero Emissions Network (ZEN).

- Examples of the work that Islington Council[17] is undertaking: School Streets, schools audits, and air quality awareness days including Car Free Day and Clean Air Day.

- Tower Hamlets Council[18] projects include the Breathe Clean behaviour change campaign, the Clean Van Commitment, which supports drivers to pledge to move to zero-emission vans by 2028, and the Mayor of Tower Hamlets Air Quality Grants for third party organisations to carry out projects combating air pollution.

- City of London and Hackney share a Public Health department and we have previously partnered with the City to deliver a webinar highlighting the association between air pollution and public health.

Hackney has also been successful in securing funding from Defra to provide advice to people on reducing their exposure to air pollution. This is a joint project with Newham, City and Tower Hamlets.

On a regional level, Hackney is a member of the AirText consortium which focuses on how we need to be promoting the pollution alert service, particularly through health professionals.

The Greater London Authority (GLA) and Transport for London (TfL) are working on multiple London wide initiatives to reduce air pollution, in conjunction with boroughs including Hackney and our neighbours. Major schemes and projects to improve air quality are outlined below.

The Ultra Low Emission Zone (ULEZ) was launched in 2018. To help improve air quality, the ULEZ operates 24 hours a day, 7 days a week, every day of the year, except Christmas Day,

[17] Islington Council. Air Quality. What We Are Doing: https://www.islington.gov.uk/energy-and-pollution/pollution/air-quality/what-we-are-doing
[18] Tower Hamlets. Air Quality: https://www.towerhamlets.gov.uk/lgnl/environment_and_waste/environmental_health/pollution/air_quality/air_quality.aspx

within the same area of central London as the Congestion Charge. Most vehicles, including cars and vans, need to meet the ULEZ emissions standards or their drivers must pay a daily charge to drive within the zone. From 25th October 2021, the ULEZ has been extended up to the north and south Circular Roads[19].

The Mayor's School Audit Program: Supported by the Mayor's Air Quality Fund, 50 schools across London, including William Patten and De Beauvoir Primary school in Hackney, were audited in relation to air quality in 2018. Audits included identifying local emission sources outside and within the school premises. Based upon these findings, mitigation measures such as moving school entrances from busy roads and reducing emissions through local road layouts were proposed for the school to implement. Following on from the study, the GLA released school auditing guidance for Local Authorities to undertake auditing at any school within their borough[20]. Hackney will be developing its own Schools Auditing Programme in the coming months.

The London Air Quality Network (LAQN)[21] is a collection of urban air pollution monitoring stations and is a further London wide initiative. The network is managed by Imperial College London's Environmental Research Groups and is one of the largest air quality monitoring networks in the world. The network provides independent monitoring and scientific measurements that can be accessed freely by the public, policy users and scientists.

The Greater London Authority is also currently consulting on a Green New Deal. [22] This has been developed as a response to the pandemic and aims to tackle the climate, ecological emergencies and improve air quality by doubling the size of London's green economy by 2040 to accelerate job creation for all.

8. Next steps

Hackney will continue to ensure public health forms an integral part of air quality management in the borough and deliver on the AQAP actions. Officers are also updating the Joint Strategic Needs Assessment which will have a chapter specifically devoted to the environment and air quality.

There are several additional action plans that are being prepared as a result of the Council declaring a climate emergency in June 2019, these include the Green Infrastructure Plan, Local Nature Recovery Plan and Net Zero Energy Strategy. Climate Action Plans are also in development and will consist of 7 different strategies aimed at reducing our carbon footprint.

[19] Transport for London (TfL). Ultra Low Emission Zone. When and Where: https://tfl.gov.uk/modes/driving/ultra-low-emission-zone/ulez-where-and-when#on-this-page-1
[20] Mayor of London. London Assembly. The Mayor's School Air Quality Audit Programme: https://www.london.gov.uk/what-we-do/environment/pollution-and-air-quality/mayors-school-air-quality-audit-programme
[21] The London Air Quality Network
[22] A Green New Deal

Further to this, having been successful in securing over £300,000 in funding from Defra's Air Quality Grant Programme, Hackney is leading a team of boroughs in developing a web tool aimed at increasing the public's understanding of the impact air quality has on public health.

9. Conclusion

An average of 1,110 people die every year in Hackney and the City, with 35% of these deaths being preventable. The greatest numbers of deaths are caused by cardiovascular disease (301 per year) and cancer (326 per year), followed by respiratory disease (135 deaths per year) (Hackney mortality JSNA, 2018). Given the strong association between air pollution and cardiovascular and respiratory disease, improving air quality is vital for public health.

As noted in Public Health England's evidence review (2019), although there are opportunities for individuals to reduce their personal exposure (or that of their children) to air pollution, these are limited. Likewise, whilst there are opportunities for local authorities to reduce the way air pollution concentrates in certain places, these are also limited. The interventions that will have the greatest impact on reducing harm to people's health are, therefore, those which reduce emissions of air pollution at the source and these should be the main focus of action.

Consequently, Hackney's approach of joining forces with other local authorities to create clean air zones, lobbying to expand and strengthen TfL-led schemes, and ensuring that all possible local actions are taken to reduce emissions (including by the Council fleet and local businesses) and ensure that new development is 'clean by design' are powerful tools to protect public health. The continued effort to focus on vulnerable groups such as the elderly, those with pre-existing conditions and children is also vital to limit exposure to air pollution and the associated health harms.

The potential of wider action to benefit Hackney residents is illustrated by a recently published study by Lumen consultancy commissioned by the GLA. According to this study, the Mayor's air quality policies, including the ULEZ, ULEZ expansion and standards in the London Environment Strategy, will prevent 7,531 cases of new air pollution-related diseases and 23,278 fewer hospital admissions in Hackney by 2050. This will result in a saving of £95.1 million to the NHS and social care system in Hackney by 2050.

The National Institute for Clinical Excellence guidance and the Public Health England evidence review recommendations provide valuable reference points for appreciating the quality and comprehensiveness of the air quality response so far in Hackney and identifying future opportunities to be considered in developing further work in this field.

Appendix

Policy Context

The Clean Air Act[23] was introduced in 1956, however, local government was not given responsibility for managing local air quality until the 1990's when the Environment Act 1995[24] was passed. A requirement of the Act was for the government to create a UK Air Quality Strategy which was published in 1997. The Government has now published the third iteration of this strategy; Clean Air Strategy 2019[25].

Part IV of the Environment Act requires all local governments to review air quality in their constituencies. Where national air quality objectives (NAQO) and limit values are not being met, an Air Quality Management Area (AQMA) must be designated. The legally binding limit values are derived from the EU Ambient Air Quality Directive 2008 and have been transposed into legislation as the Air Quality Standard Regulations 2010.

Once an AQMA is designated it is the responsibility of the local authority to develop an Air Quality Action Plan (AQAP) which must be reviewed and updated every five years. Hackney Council declared an AQMA in 2006 for the exceedance of both the short term and long term NAQOs for NO_2 and PM_{10}.

In light of the evidence of the impacts of climate change and air pollution, the Government is developing new legislation and guidance. The Environment Bill[26] was introduced to Parliament on 15th October 2019 with the aim to tackle the biggest environmental issues. The Environment Bill makes a commitment to set a legally binding target for $PM_{2.5}$. At present whilst the Environment Act 1995 and Clean Air Act 1993 provide mechanisms for local authorities to address local air quality, the duties to act and the powers to enable action were often misaligned. The Bill, therefore, aims to update the Local Air Quality Management Framework (LAQM), focusing responsibility for air quality improvements on local government and relevant public bodies. There are also provisions for the amendments to the Clean Air Act 1993, making enforcement of smoke control zones simpler, possibly through a decriminalised regime with a simplified structure for issuing penalty notices. The Bill is seeking to update legislation to give councils the power of entry, and there will also be additional enforcement powers for domestic burning. It will extend these powers to allow enforcement on moored vessels.

Hackney Council welcomes the opportunity to update and strengthen guidance in relation to air quality improvements. However, the Bill does not take a firm stance on addressing the health issues caused, which could be undertaken by particulate matter by adopting the World Health Organisation targets for $PM_{2.5}$ by 2030. Whilst the Bill focuses on making air quality improvements local governments' responsibility, it does not detail the additional

[23] Clean Air Act (1956): http://www.legislation.gov.uk/ukpga/Eliz2/4-5/52/enacted
[24] Environment Act (1995): http://www.legislation.gov.uk/ukpga/1995/25/contents
[25] Clean Air Strategy (2019): https://www.gov.uk/government/publications/clean-air-strategy-2019
[26] Environment Bill (2019 - 21) - Government Bill: https://services.parliament.uk/bills/2019-21/environment.html

requirements i.e. the resourcing and funding local government would need to take on this responsibility.

The Private Members Emissions Reduction Bill held its first reading on the 13th of January 2020. The aim of the Bill is to allow Councils to achieve reductions in emissions from specified point source plants such as NRMM and diesel generators. This would be done through the Bill outlining specifications for new point source plants and giving the local authority the ability to issue penalty notices if specifications are not met[27].

The Mayor of London has committed to the following proposal within his Environment Strategy 2019:

"Objective 4.3: Establish and achieve new, tighter air quality targets for a cleaner London by transitioning to a zero emission London by transitioning to a zero emission London by 2050, meeting World Health Organisation health based guidelines for air quality."

"Proposal 4.3.1a: The Mayor will set new concentration targets for PM2.5, with the aim of meeting World Health Organisation guidelines by 2030."

Hackney Council has made a clear commitment to improve the quality of air across the borough, detailed in the Air Quality Action Plan. Further, the Mayor of Hackney's Manifesto commitment 126 commits to: *"work towards cleaning up the air by reducing harmful emissions such as nitrogen dioxide and particulate matter".*

[27] Emissions Reduction Bill (Local Authorities in London) Bill (HL) (2019 - 21) - Private Members Bill: https://services.parliament.uk/bills/2019-21/emissionsreductionlocalauthoritiesinlondon.html

REBUILDING
A GREENER
HACKNEY

Air Quality Action Plan

2021–2025

Hackney

Foreword

I am very pleased to introduce a new Air Quality Action Plan for the London Borough of Hackney which sets out measures that we will take to improve air quality over the next 5 years.

Hackney is a great place to live, work and visit. We have excellent facilities, good transport links, some of the best parks in the UK and a thriving, diverse community. However, Hackney also faces some significant challenges. While levels of car ownership in Hackney are very low and the use of sustainable transport modes by borough residents is high, Hackney's urban location means that it can still regularly suffer from poor air quality.

Through our previous action plan, we were able to make significant progress with delivering measures to improve air quality. This included leading by example in reducing emissions from our own fleet as well as working with partners such as in the creation of the City Fringe Low Emission Neighbourhood.

We now aim to build on previous successes and deliver cleaner air for everyone who lives, works, studies or visits the borough. We know that exposure to air pollution can have consequences for health and we recognise that this is a public health emergency. Despite our achievements to date, we still have work to do and are, therefore, setting ambitious targets for ourselves by committing to go above and beyond what is required.

This action plan aims to address the challenges we face head-on. Hackney Council is committed to playing its part in delivering the air quality improvements necessary through a combination of listening, lobbying and delivering.

People want a good quality of life and being able to breathe clean air must form a part of that ambition. We recognise that people also want the security of employment and be able to travel safely and conveniently. These aims are not incompatible.

Therefore, Hackney will work with residents and communities to deliver an action plan that meets their needs. We also need to cooperate with external partners and lobby for changes that are outside of our direct control. It is important that everyone recognises they can play a part in improving air quality and we will support people to live their lives in a more healthy and sustainable manner. In this way, we can all enjoy a cleaner, greener and healthier environment.

Councillor Mete Coban
Cabinet Member for Energy, Waste, Transport and Public Realm

Responsibilities & Commitment

This Air Quality Action Plan (AQAP) was prepared by the Land Water Air team of Hackney Council with the support of the teams on the Steering Group. These include: Public Health, Environmental Services, Street Scene, Parking, Fleet Management, Parks Service, Hackney Homes, Planning, Communications and Sustainable Procurement.

This AQAP will be subject to an annual review, with appraisal of progress and reporting to the Environmental Sustainability Board. Progress each year will also be reported in the Annual Status Reports produced by Hackney Council, as part of our statutory London Local Air Quality Management duties.

If you have any comments relating to this AQAP please send them to:

Address: Land Water Air Team, Hackney Service Centre, 1 Hillman Street, London, E8 1DY

Telephone: 020 8356 3000
Email: landwaterair@hackney.gov.uk

This AQAP has been approved by:

Councillor Mete Coban,
Cabinet Member for Energy, Waste, Transport and Public Realm

Dr Sandra Husbands
Director of Public Health, City of London & London Borough of Hackney

Andrew Cunningham
Head of Streetscene, London Borough of Hackney

Summary

Hackney's Air Quality Action Plan (AQAP) has been produced as part of the Council's duty to London Local Air Quality Management (LLAQM) and has regard to the Greater London Authority's (GLA) guidance on air quality. The plan outlines the actions we will take to improve air quality in Hackney 2021–2025.

Hackney's 2021–2025 plan will not only build upon the achievements of past actions, but it establishes ambitious new targets that fit into the Borough's new corporate sustainability agenda. The agenda has been formulated as a response to Hackney declaring a Climate Emergency In June 2019 and takes the approach of managing the environment holistically.

This means that air quality issues will not only be addressed in this plan but also in the Council's updated Public Health Joint Strategic Needs Assessment, Net Zero Energy Strategy, Emergency Transport Plan, Parking Enforcement Plan, Green Infrastructure Strategy and The Local Nature Recovery Plan. This new integrated approach is vital as we now know air pollution is associated with a number of adverse health impacts and it is increasingly recognised as a major contributor to diseases that degrade cardiovascular and respiratory systems and, in some cases, can lead to mortality.

According to the Public Health Outcomes Framework (Public Health England), as many as 7% of all deaths among people in Hackney over the age of 30 in 2018 can be attributed to particulate matter ($PM_{2.5}$). This is compared to the London average of 6.6% and 5.2% in England.

Further, in 2019 the estimated costs to local health and care services caused by air pollution in over 18s for Hackney is over £50 million. These figures do not account for the impact the Coronavirus (Covid-19) pandemic has had on our community and, due to the virus being respiratory in nature, it is now more prudent than ever to manage the link between air quality and public health.

ZERO EMISSIONS NETWORK

Collaborating with the Zero Emissions Network (ZEN), which offers sustainable transport initiatives to businesses and residents including cargo bike trials, bike maintenance workshops and scooter switches. By 2020, 1,430 business members and over 700 residents had already signed up to be a part of ZEN

Operating one of the most sustainable vehicle fleets in London with 59 electric vehicles (EV) by 2020, representing 19% of Hackney's light vehicle fleet and 12.3% of our total fleet

Establishing one of the most comprehensive air quality monitoring networks in the country with a mixture of diffusion tubes monitoring nitrogen dioxide (NO_2), real time monitors and reference monitors

The lockdown has shown that with a reduction in the source of air pollution, such as less vehicles on the road and fewer emissions from construction activities, there can be multiple cross-cutting benefits to society. Along with the health benefits of less exposure to air pollution for the most susceptible groups, there are also wider benefits for society such as safer, cleaner streets, an increase in community interaction and greater equality.

That is why Hackney is taking a radical approach to tackling air quality and rebuilding a greener Hackney post-lockdown. The Covid-19 pandemic highlighted the means by which a virus can spread readily through a population. As a result, provisions were put in place to limit the spread through maintaining distance and limiting travel.

> The virus has had significant impacts on our communities and the way in which we live, but it has also helped to identify ways in which we can change to make our future cleaner, greener and healthier.

We need to learn from these lessons and work with communities to help facilitate a transition to a better environment. This is likely to mean changes to the way in which we work and shop, improving the public realm to support walking and cycling and working with partners to ensure public transport adapts to meet passengers' needs.

It is likely to take time to implement the infrastructure to allow change and for people to adapt. Therefore, although this Action Plan sets out the actions that Hackney intends to take in order to improve air quality, it is meant to be a dynamic document that is based on us listening and working with others. In order to achieve the many societal benefits that a reduction in air pollution brings, this plan outlines a coherent framework for addressing air pollution. This is based upon nine key themes all working towards realising the vision of clean air for all in Hackney.

This action plan replaces the previous plan which ran from 2015–2019. Hackney has been successful in tackling air pollution in recent years and notable achievements since the publication of our last plan include:

Lobbying national and regional government, as well as responding to consultations, in particular recent consultations on airport expansions, to ensure that air quality issues are addressed.

Pioneering the School Streets programme, thus far launched at 40 primary schools in Hackney. Moreover, developed a School Streets toolkit to support councils nationwide to implement their own School Streets.

Launching the Low Emissions Neighbourhood (LEN) in the City fringe in 2017. This programme, in collaboration with Islington and Tower Hamlets, only allows Ultra Low Emission Vehicles (ULEV) in the scheme area at certain periods throughout the day

Themes & priorities

Having regard for not only the environmental implications of poor air quality, but the very real public health impacts on our society, our action plan has been developed to align closely with all the Greater London Authority's recommendations. We also aim to go further by working towards the World Health Organisation's Guideline Values.

In the action plan, we have developed nine broad themes that will help to improve the air quality in Hackney:

PUBLIC HEALTH AND AWARENESS RAISING

Increasing awareness can drive behavioural change to lower emissions as well as reducing exposure to air pollution. For example, a shift in attitude with respect to solid fuel burning through increasing awareness of the impact this causes, can help facilitate overall behaviour change

LOCALISED SOLUTIONS

These seek to improve the environment of neighbourhoods through a combination of measures such as Low Traffic Neighbourhoods, traffic filtering, parking schemes and biodiversity projects

CLEANER TRANSPORT

Road transport is the main source of air pollution in London and Hackney. We will continue to incentivise and facilitate a change to walking, cycling, public transport and ultra-low emission vehicles (such as electric) as far as possible

SCHOOLS AND COMMUNITIES

Implementing initiatives that target the most susceptible groups in Hackney in order to ensure those most at risk are not disproportionately affected by the impacts of poor air quality

BOROUGH FLEET

Hackney's fleet includes a mixture of light and heavy-duty diesel-fuelled vehicles, now alongside 66 electric vehicles. Building on our 2018 Green Fleet of the Year award, we will continue to make improvements in our own fleet, thereby leading by example

LOBBYING

Hackney will continue to lobby and influence regional and national organisations and stakeholders on policies and issues beyond Hackney's influence to introduce progressive measures aimed at improving air quality.

MONITORING AND OTHER CORE STATUTORY DUTIES

Evaluating the air quality monitoring throughout Hackney to keep track of compliance with our core statutory objectives

EMISSIONS FROM DEVELOPMENT AND BUILDINGS

Emissions from construction alone accounts for approximately 37% of the PM_{10} emissions across Hackney, and therefore work in this area is important in reducing particulate concentrations. This will focus on air quality mitigation through the planning system and correlates with the Council's sustainability objectives

DELIVERY SERVICING AND FREIGHT

Ensuring delivery servicing and freight vehicles are re-evaluated as these are usually heavy-duty diesel-fuelled vehicles with high primary NO2 emissions. Assessment of the impacts is especially important as our shopping habits change, particularly in response to the Covid pandemic

Our 10 key priorities are:

1. Adopt WHO guidelines for PM_{10} and $PM_{2.5}$ with a compliance deadline by 2030.
2. Ensure standards for Non-Road Mobile Machinery (NRMM) are met through the use of planning conditions and by carrying out compliance monitoring checks.
3. Minimise emissions from construction through the development of Hackney's own Supplementary Planning Document (SPD) and code of construction for air quality which goes above and beyond the GLA Supplementary Planning Guidance (SPG);
4. Run air quality campaigns to raise awareness and encourage behaviour change.
5. Assess potential impact of installing Ultra-Low Emission Vehicle (ULEV) infrastructure (electric vehicle charging points, rapid electric vehicle charging points).
6. Increase uptake of electric vehicles and ensure electric vehicle charging infrastructure is commensurate with growth in the Borough's Fleet.
7. Ensure that Transport and Air Quality policies and projects are integrated and assess the air quality benefits of the actions in Hackney's Transport Plans and Strategies.
8. Provide new cycling and walking infrastructure (including cycle parking) and assess air quality impacts of new infrastructure.
9. Deliver updated Parking and Enforcement Plan.
10. Lobby Central Government to control and reduce emissions that are outside of Hackney's authority.

This action plan sets out how we will effectively deliver against the above broad themes and key priorities, thereby improving air quality issues that are within our control and through leading by example.

The Action Plan is intended to set out a framework under which a range of measures that can help improve air quality will be delivered. Therefore, the Action Plan is written so that, as our understanding improves and technological advances are made, these can be introduced under the broader framework. In this way, the Action Plan is a dynamic document and Hackney will continue to work with stakeholders and local communities to ensure that it reflects their priorities.

It is important to recognise that these are local drivers aimed at tackling air pollution and that air pollution by its very nature is transboundary. For those areas that are outside of our control, we will continue to work with our neighbours, as well as regional and national governments to lobby and influence for impactful change for a positive outcome.

> By reducing air pollution, we will improve the health and well-being of residents and visitors, whilst also simultaneously benefiting the economy and improving our environment.

In delivering this action plan Hackney Council will work with internal and external stakeholders. This work has already begun, including a stakeholder workshop which identified the priority work areas, and we wish to thank all stakeholders for the delivery of actions in the last plan, and for their help in developing this plan. We are also very much looking forward to working with new partners to deliver on actions within this plan.

Contents

Figures, Tables, Graphs and Charts

Figures:

Tables:

Graphs:

Charts:

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
NAQO	National Air Quality Objectives
NO_2	Nitrogen Dioxide
NRMM	Non-Road Mobile Machinery
PM_{10}	Particulate matter less than 10 micron in diameter
$PM_{2.5}$	Particulate matter less than 2.5 micron in diameter
TEB	Transport Emissions Benchmark
TfL	Transport for London

1.0 Introduction

There is a clear commitment to address poor air quality in Hackney. This action plan builds on the previous action plan[1] and outlines the actions that Hackney will deliver between 2021-2025 in order to reduce concentrations of pollution, and exposure to pollution, thereby positively impacting on the health and quality of life for residents, businesses and visitors to the borough.

This plan has been developed in recognition of the legal requirement on the Council to work towards air quality objectives under Part IV of the Environment Act 1995 and relevant regulations made under Part IV. It also meets the requirements of the London Local Air Quality Management (LLAQM) statutory process, which is overseen by the Mayor of London. As directed under the Act, if an air quality objective is being exceeded, or is predicted to exceed within a local authority area, then an AQMA has to be put in place. In 2006 an AQMA was declared in Hackney covering the whole of the Borough as it was not achieving the annual mean NO_2 NAQO nor the 24hr mean PM_{10} NAQO.

Hackney is home to an estimated 275,930 people. The population is likely to grow to 310,000 by 2028 and to 355,000 by 2050 making Hackney the third most densely populated Borough in London. However, although Hackney is experiencing rapid population growth and a booming economy, it is also one of the greenest Boroughs in the city with 58 parks and green spaces totalling 282 hectares. Population increases and growth areas within Hackney can present issues for local air quality. This is particularly the case with nitrogen oxides and particulate matter from transport, heating (both domestic and commercial properties), and from construction activities. Therefore, action must be taken to ensure that the concentrations of air pollutants are, as a minimum, kept within safe limits, and further reduced to ensure clean air for all.

Having reviewed Hackney's 2015-2019 action plan, undertaken stakeholder engagement exercises and accounted for the increasing evidence as to the impact of poor air quality on people's health, the vision and goals of Hackney's AQAP 2021-25 are as follows:

Our vision:

- Hackney is a place for all to breathe clean air, supporting better health and enhancing the enjoyment of life, and as a borough we will continue to lead by example ensuring improved air quality for all.

Our goals:

- We will adopt the WHO Air Quality Guidelines for PM_{10} and $PM_{2.5}$;
- We will comply with the National Air Quality Objectives and WHO Guidelines for NO_2, PM_{10} and $PM_{2.5}$ and do everything within our control to achieve compliance with these concentrations by 2030;
  * Annual Means NO_2 40 µg/m-³; PM_{10} 20 µg/m-³; $PM_{2.5}$ 10 µg/m-³
- We will adopt a data-led approach to implement targeted measures to improve air quality and protect public health in parts of the Borough where air quality objectives are not being met.

1 https://hackney.gov.uk/air-quality-action-plan

In order to achieve the above goals, actions will be delivered across the nine themes of:

1. Monitoring and other core statutory duties
2. Emissions from development and buildings
3. Public health and awareness raising
4. Delivery servicing and freight
5. Borough fleet
6. Localised solutions
7. Cleaner transport
8. Schools and communities
9. Lobbying

Corporate strategies that support the aims and actions of this AQAP are, but not limited to:

- Transport Strategy 2015 - 2025
- Hackney Local Implementation Plan (2019 -2022)
- Parking and Enforcement Plan (in development)
- Green Infrastructure Strategy (in development)
- Local Nature Recovery Plan (in development)
- Net Zero Energy Strategy (in development)
- Local Plan 33
- Joint Strategic Needs Assessment
- Sustainable Procurement Strategy 2018-2022

1.1 Health Impact of Poor Air Quality in Hackney

Air pollution is the largest environmental risk to the public's health in the UK, with estimates of between 28,000 and 36,000 deaths each year attributed to human-made air pollution. Along with the association with cardiovascular and respiratory disease there is emerging evidence that other organs may also be affected by air pollution, including possible effects on dementia, low birth weight and diabetes. Further, there is evidence to suggest that children in their early years are especially at risk, including increased risks of getting asthma and poorer lung development[2].

Air pollution is a major contributor to ill health and early death in Hackney and across London. In certain locations current air pollution levels exceed legal standards and have a negative impact on the health of all residents and visitors. People with existing conditions, and those who are considered socioeconomically deprived[3], are particularly affected, making air pollution a key contributor to health inequality. There are chronic long-term effects on health and well-being, as well as more acute effects on sufferers of respiratory conditions. Evidence to show how our psychological well-being is impacted by air pollution is now emerging and exposure to pollutants is also associated with depression, anxiety and dementia[4]. Whilst the impact to health from air pollution depends on multiple factors such as exposure time, age and gender;

2 https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/795185/Review_of_interventions_to_improve_air_quality.pdf

3 Williams ML, Beevers S, Kitwiroon N, et al. (2018). Public health air pollution impacts of pathway options to meet the 2050 UK Climate Change Act target: a modelling study. Southampton (UK): NIHR Journals Library; (Public Health Research, No. 6.7.) Chapter 8, Impact of air pollution scenarios on inequalities. Available from: https://www.ncbi.nlm.nih.gov/books/NBK507623

4 Ali, N. A., & Khoja, A. (2019). Growing Evidence for the Impact of Air Pollution on Depression. The Ochsner journal, 19(1), 4. doi:10.31486/toj.19.0011

children, pregnant women, the elderly and those with certain pre-existing medical conditions such as chronic obstructive pulmonary disease (COPD) are considered at most risk.

However, if anyone is exposed to pollution for long periods of time there is an increased chance that health will deteriorate. Figure 1 below outlines the source and health impacts of NO_2 and particulate matter, focusing on $PM_{2.5}$ which has the greater potential to cause damage to health due to the smaller micron particle size.

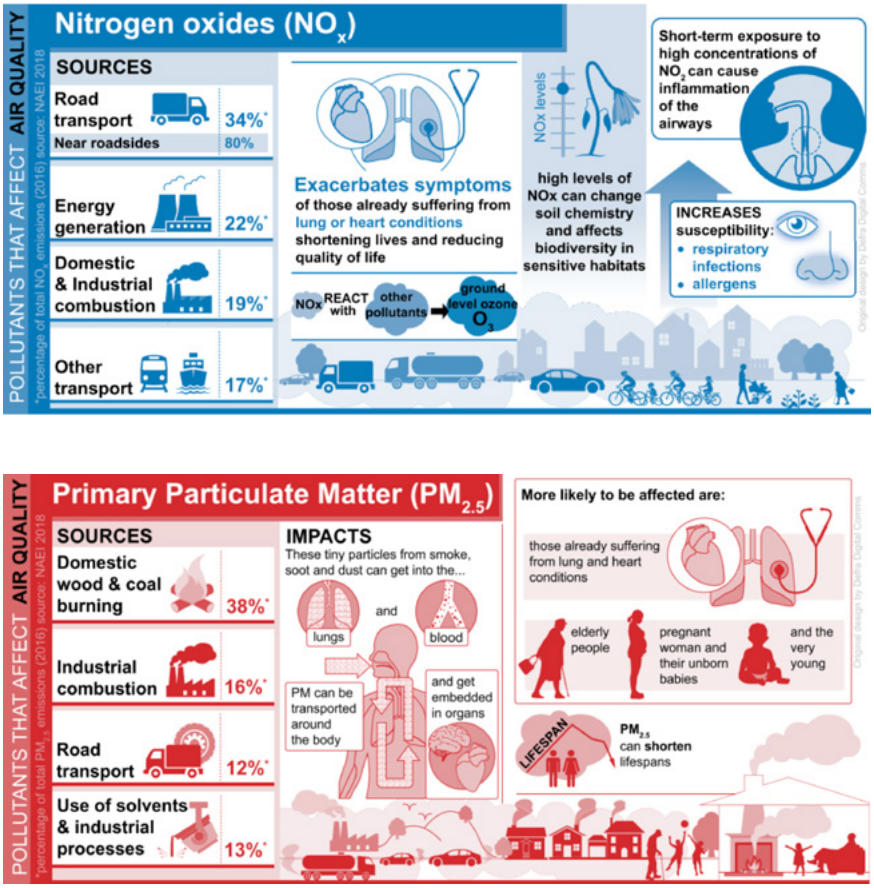


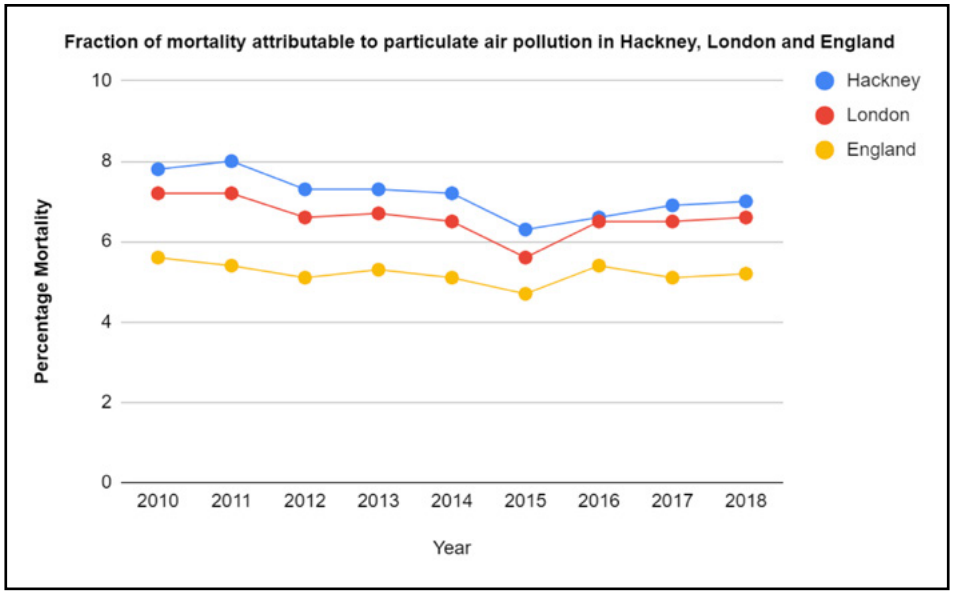
Figure 1: Air pollutants, source and potential health impacts (Clean Air Strategy 2019)[5]

$PM_{2.5}$ is a particular health risk with WHO guidelines stating there is no safe exposure limit. Due to the small diameter of these particles, they can penetrate the lung barrier and enter the bloodstream. With chronic exposure, the risk of developing cardiovascular and respiratory diseases increases along with the likelihood of strokes, heart attacks and lung cancer. Moreover, there is a strong correlation between exposure to high concentrations of small particles and increased mortality, both daily and over time[6]. Based on the Global Burden of Disease Survey, which is the most comprehensive effort to date to measure epidemiological levels and trends worldwide, 54 deaths among residents of Hackney (2017) were attributable to air pollution. Moreover, calculations from the same study suggest that males are more likely than females to suffer from premature mortality in Hackney as a result of air pollution.

5 Department for Environment, Food and Rural Affairs. (2019). Clean Air Strategy 2019, https://www.gov.uk/government/publications/clean-air-strategy-2019

6 World Health Organisation (2018) Ambient (outdoor) air pollution, Available at: https://www.who.int/en/news-room/fact-sheets/detail/ambient-(outdoor)-air-quality-and-health

Furthermore, according to the Public Health Outcomes Framework (Public Health England), as many as 7% of all deaths among people in Hackney over the age of 30 in 2018 can be attributed to particulate air pollution ($PM_{2.5}$).



Graph 1: Fraction of mortality attributable to particulate air pollution (PHE, 2020)

This compares to 6.6% in London as a whole and 5.2% of deaths in England (2018)[7]. Our neighbouring boroughs, Tower Hamlets and Islington, also had 7% of deaths attributable to the same cause, which reinforces the case for joint action at the London level and among local authorities.

As well as the detrimental impact on health, especially for those considered more vulnerable in our society, there is an economic cost to poor air quality. The estimated costs to local health and care services caused by air pollution in 2019 for Hackney were over £50 million (£30.3 million for $PM_{2.5}$ and £19.9 million for NO_2) and are set out in Table 1. This includes costs to primary care, secondary care, medication and social care[8].

	$PM_{2.5}$	NO_2
Primary Care	£4.6m	£3.8m
Secondary Care	£12.0m	£5.5m
Medication	£8.6m	£5.1m
Social Care	£5.1m	£5.3m
Combined Costs	**£30.3m**	**£19.7m**

Table 1: Estimates the costs to local health and care services of $PM_{2.5}$ and NO_2

7 Public Health England 2020, Public Health Outcomes Framework, Fraction of mortality attributable to particulate air pollution, Data-set, viewed June 2020, https://fingertips.phe.org.uk

8 London Borough of Hackney Draft Joint Strategic Needs Assessment

1.2 WHO Guidelines

World Health Organisation (WHO) Air Quality Guidelines (AQG) are set out in Table 2 below, which also includes the UK National Air Quality Objectives. The AQG details the threshold limits for key air pollutants that pose health risks and are intended as a reference for setting air pollution targets at regional and national levels to improve air quality. The WHO has provided AQG since 1987 with the most recent revisions in 2005. The AQG are selected based upon a synthesis of information from research on the health effects of each pollutant.

Pollutant	UK National Air Quality Objectives (µg/m-³)	Averaging Period	Due Date	WHO Air Quality Guidelines (µg/m-³)	Averaging Period
Nitrogen dioxide - NO_2	40 µg m^{-3}	Annual mean	31 Dec 2005	40	1 year (annual mean)
	200 µg m^{-3} not to be exceeded more than 18 times a year	1-hour mean	31 Dec 2005	200	1 year (annual mean)
Particles - PM_{10}	40 µg m^{-3}	Annual mean	31 Dec 2004	20	1 year (annual mean)
	50 µg m^{-3} not to be exceeded more than 35 times a year	24-hour mean	31 Dec 2004	50	24 hour (99th percentile)
Particles - PM2.5	25 µg m^{-3}	Annual mean	2020	10	1 year (annual mean)
	Target of 15% reduction in concentration at urban background locations	3-year mean	Between 2010 and 2020	25	24 hour (99th percentile)

Table 2: WHO Air Quality Guidelines and National Air Quality Objectives

With independent studies now suggesting there is no safe exposure limits to air pollution[9] and the correlation between higher Covid-19 mortality rates and poor air quality[10], the NAQO for $PM_{2.5}$ doesn't go far enough to protect the health of anyone who lives, visits or works in Hackney. Therefore, we commit to adopting the more stringent WHO guidelines for PM_{10} and $PM_{2.5}$.

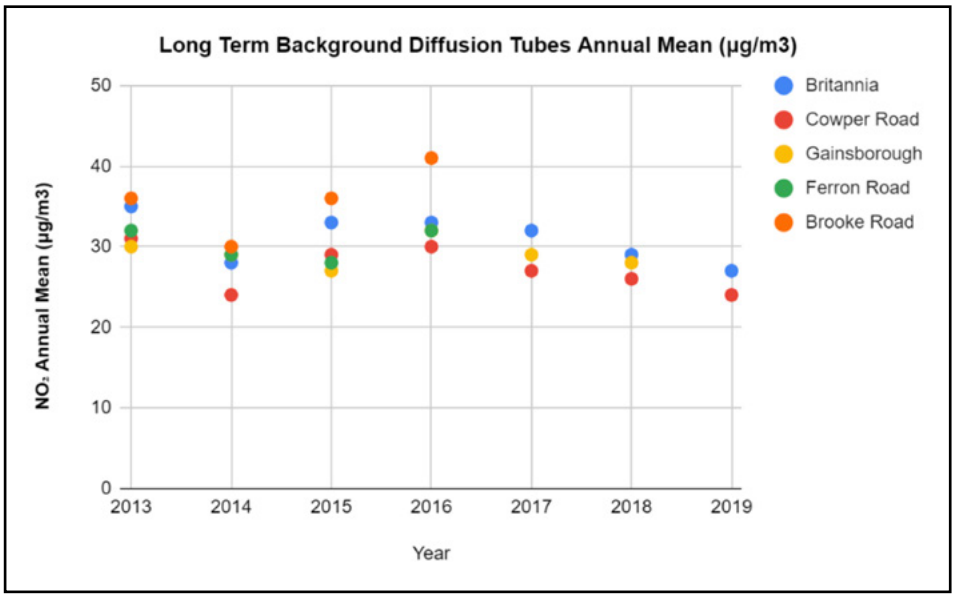
9 Zhao, B., Johnson, F., Salimi, F., Kurabayashi, M. and Negishi, K., (2020). Short-term exposure to ambient fine particulate matter and out-of-hospital cardiac arrest: a nationwide case-crossover study in Japan. The Lancet, 4(1).

10 Coker, E.S., Cavalli, L., Fabrizi, E. et al. (2020). The Effects of Air Pollution on COVID-19 Related Mortality in Northern Italy. Environ Resource Econ 76, 611–634 https://doi.org/10.1007/s10640-020-00486-1

2.0 Summary of Air Quality in Hackney

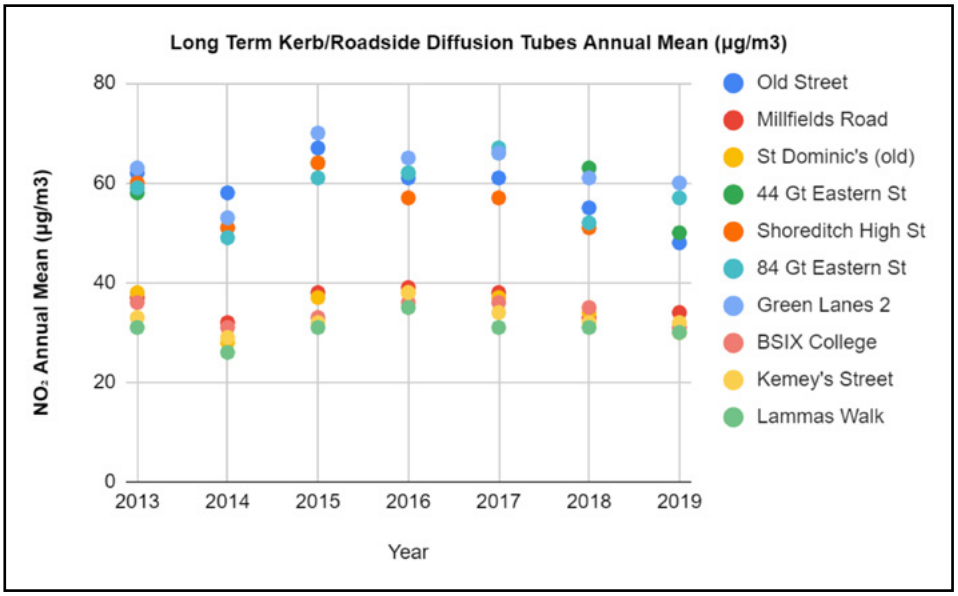
In Hackney we have a network of automatic monitors and diffusion tubes (passive monitoring) recording pollution concentrations throughout the borough. The network includes two automatic monitors measuring NO_2 and particulate matter (PM_{10} and $PM_{2.5}$), one kerbside location at Old Street and one at an urban background location in Hackney Marshes. In addition, we have 5 AQ Mesh Pods, 2 Osiris particulate matter monitors and over 200 diffusion tubes monitoring NO_2 at sensitive receptor locations across the borough, such as outside schools. All data is recorded in our annual London Local Air Quality Management (LLAQM) Annual Status Reports, which are published on the Council's website.[11]

Long term diffusion tubes have been located at five sites since 2013. These have shown that at urban background locations there is a slow reduction in NO_2 concentrations and in 2019 concentrations were below the annual mean NO_2 NAQO, shown in Graph 2. Long term diffusion tubes at kerbside and roadside locations have also shown a slight reduction. However, many locations still show that the annual mean NO_2 air quality objectives are not being met (Graph 3).



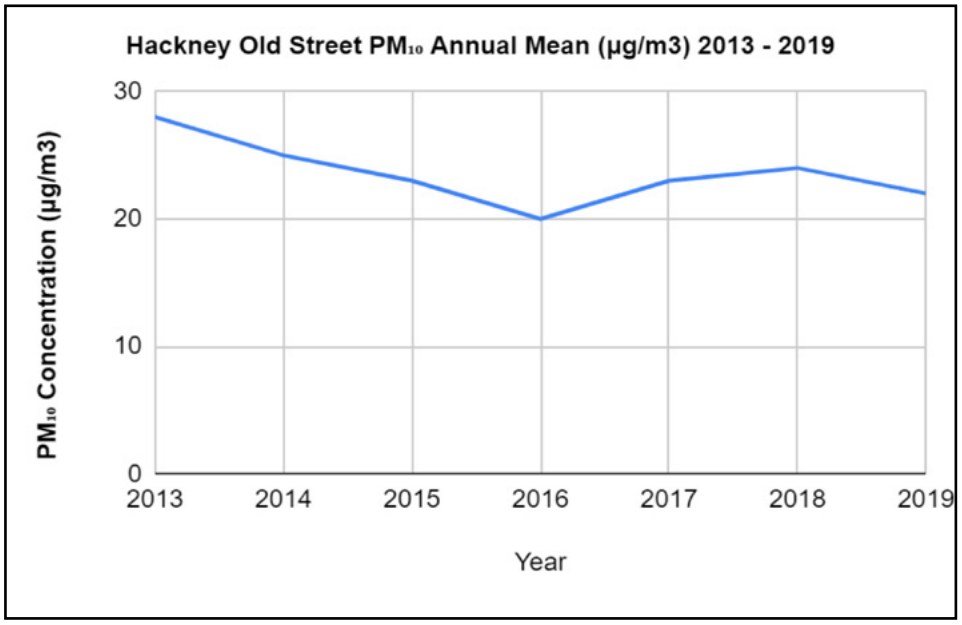
Graph 2: Long Term Background Diffusion Tube Annual Mean (µg/m-³) 2013 - 2019

11 www.hackney.gov.uk/air-what-we-are-doing

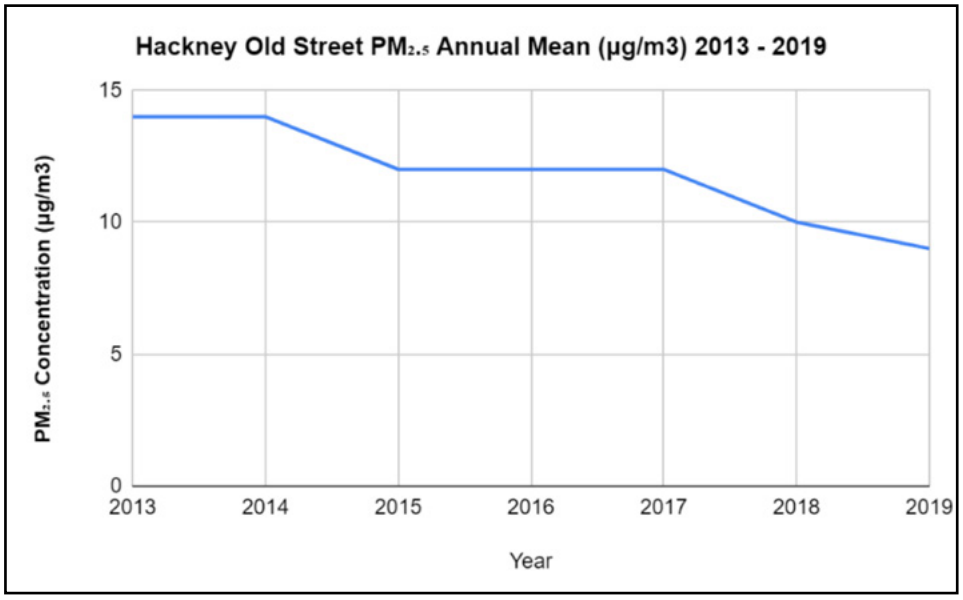


Graph 3: Long Term Kerb/Roadside Diffusion Tube Annual Mean (µg/m-³) 2013 – 2019

Monitoring of particulate matter (PM_{10} and $PM_{2.5}$) at Old Street shows that air quality objectives are being met, shown in Graph 4 and 5 respectively.



Graph 4: PM_{10} Annual Mean Concentrations at Old Street, Hackney (µg/m-³) 2013 – 2019



Graph 5: $PM_{2.5}$ Annual Mean Concentrations at Old Street, Hackney (µg/m-³) 2013 – 2019

However, modelled concentrations shown by the London Atmospheric Emissions Inventory (LAEI) 2016 show that $PM_{2.5}$ (Figure 2), PM_{10} (Figure 3) may be exceeding the annual mean NAQO along major roads which experience regular high volumes of traffic in the borough, particularly the A12. Additional modelling undertaken as part of the LAEI shows that the daily mean PM_{10} NAQO could be breached at kerbside locations of busy roads, particularly the A12 (Figure 4). Figure 5 shows predicted 2016 annual mean NO_2 concentrations are highest and are exceeding the annual mean NAQO along major roads within Hackney, including the A12 and A10. Concentrations are also shown to exceed the annual mean NAQO in the south and south western parts of the Borough away from the major roads.

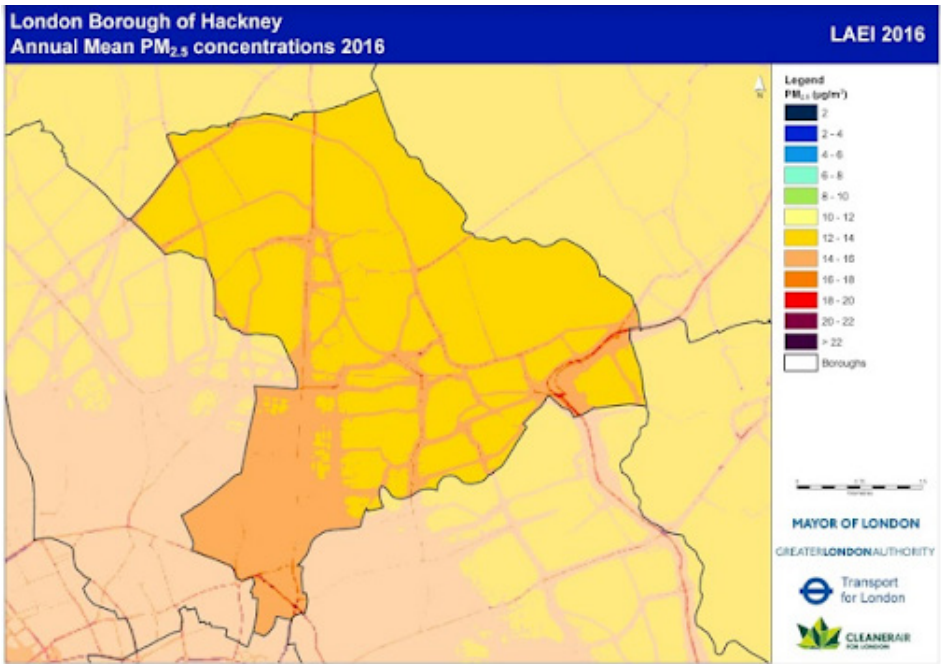


Figure 2: Mapped Annual Mean $PM_{2.5}$ Concentrations (µg/m-³), Hackney (LAEI, 2016)

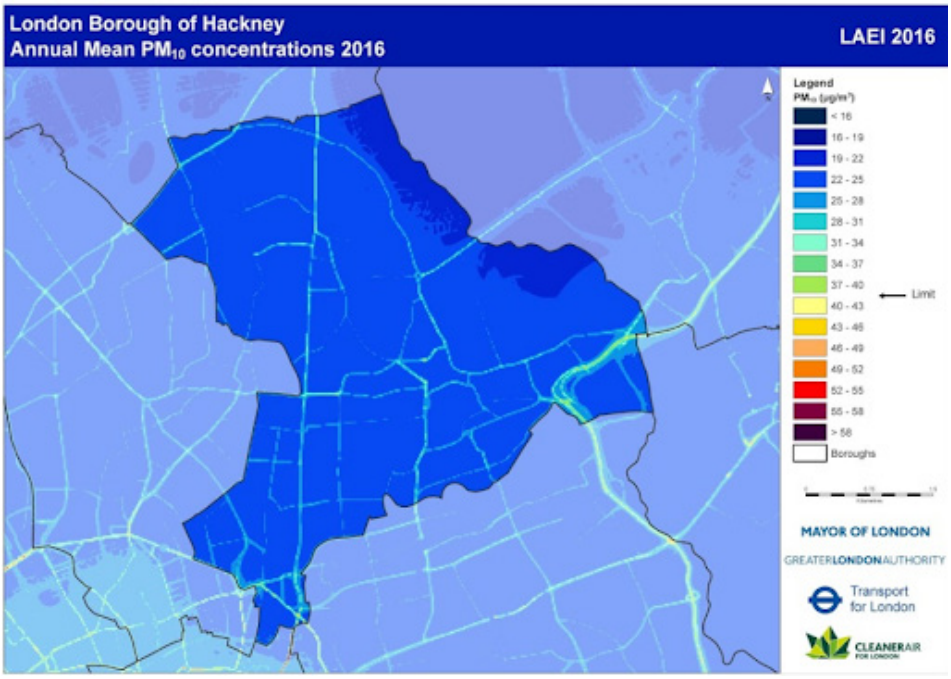


Figure 3: Mapped Annual Mean PM_{10} Concentrations (µg/m-³), Hackney (LAEI, 2016)

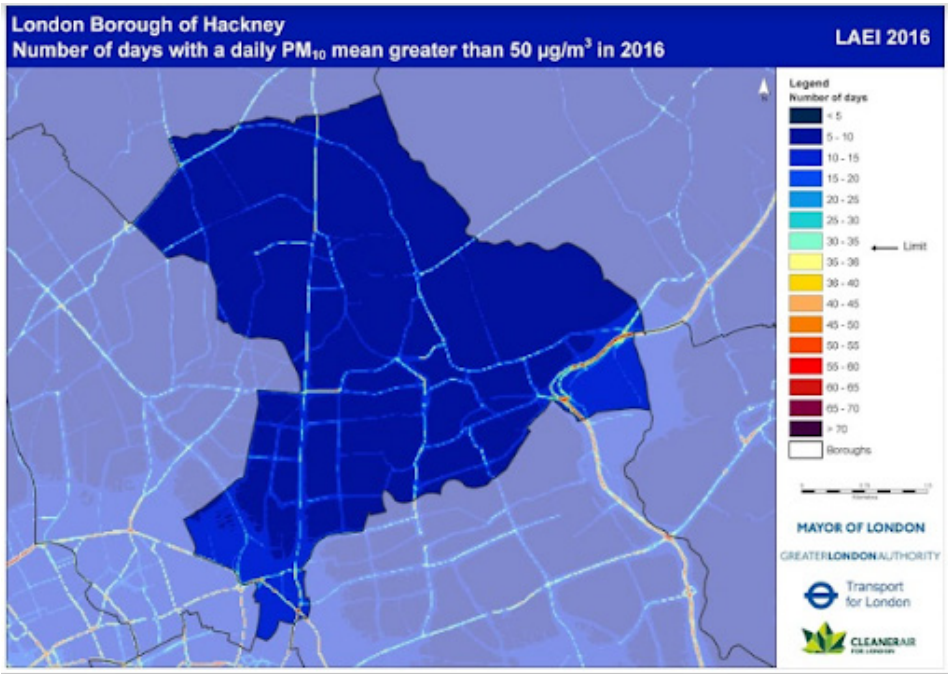


Figure 4: Mapped Number of days PM_{10} concentrations (µg/m-³) exceeded 50µg/m-³ (LAEI, 2016)

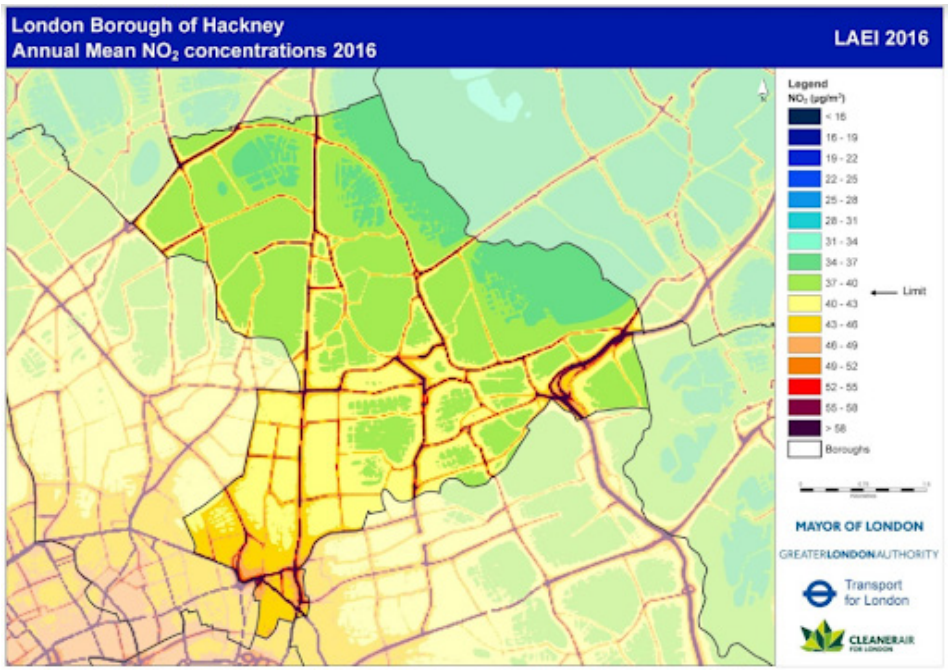


Figure 5: Mapped NO_2 Annual Mean Concentrations (µg/m-³), Hackney (LAEI, 2016)

Air pollution levels within Hackney are highest around main roads with hotspots mainly in the vicinity of the A10 which runs north to south of the borough, in close proximity to the A12 in the east of the borough at Hackney Wick, and in the very south of the borough within Shoreditch. We recognise that there may have been changes since this time and, while the LAEI is updated periodically, we intend to gather more recent modelled estimates specifically for the borough of Hackney in order to inform our decision-making processes.

2.1 Air Quality Management and Focus Areas

All of Hackney has been an AQMA since 2006 as it hasn't achieved the annual mean NO_2 NAQO and the 24hr mean PM_{10} NAQO. Our monitoring results show that the Borough still exceeds the NO2 annual mean objective and as our commitment is to adopt the WHO guidelines for PM_{10} and $PM_{2.5}$ by 2030 we do not intend to remove the AQMA declaration for either pollutant.

A focus area is a location which is in exceedance of the annual mean NO_2 objective and are areas that have high human exposure. Focus areas have been defined by the GLA to inform local air quality management and assist in the development of air quality interventions and planning processes. There are 187 focus areas in London and eight are located within Hackney (Figure 6).

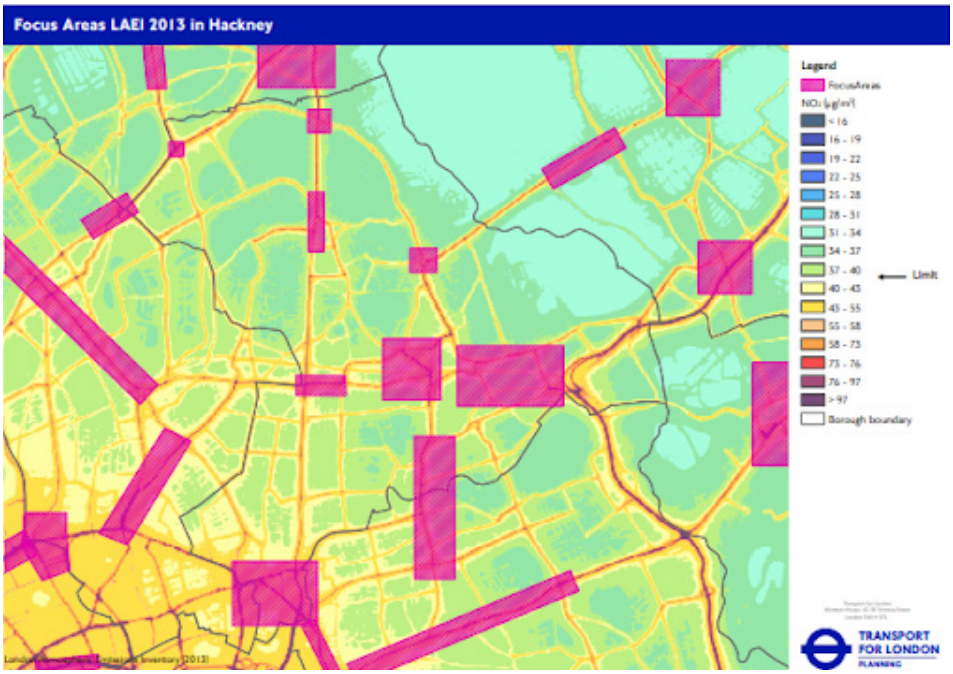


Figure 6: Focus Areas within The London Borough of Hackney (LAEI, 2013)

- **South** - Old Street, City Road, Greater Eastern Street and Shoreditch High Street;
- **Clapton** - Junction between Clapton Road and Lea Bridge Road;
- **Hackney Central** - Area including Amhurst Road, Dalston Lane and Mare Street;
- **Dalston** - Junction between Balls Pond Road and Kingsland Road;
- **Stoke Newington** - Area including Stoke Newington High Street, Stamford Hill and Rectory Road;
- **Stamford Hill** - Area including Amhurst Park and Stamford Hill Road;
- **Manor House** - Junction between Green Lanes and Seven Sisters Road;
- **Hackney Wick** - Area including Homerton High Street, Wick Road, Cassland Road and Victoria Park Road.

We recognise that these are key areas which must be targeted when implementing air quality mitigation and intervention measures. However, we also take into consideration exceedances in monitoring and modelling data, particularly at sensitive locations including schools and residential areas which do not necessarily fall into these focus areas. Therefore, we use multiple sources of information including focus areas from the GLA when determining the implementation of actions to tackle air pollution across the borough.

2.2 Sources of Pollution in Hackney

As is the case with the rest of the UK, NO_2 and particulate matter (PM_{10} and $PM_{2.5}$) are the main pollutants of concern within Hackney and originate from numerous sources which vary depending on the pollutant. As air pollution is a local and transboundary issue, pollution sources come from within the Borough as well as outside the Borough, in some instances beyond London and the UK. The following charts give sources of pollution in Hackney and specifically breakdown transport sources to give additional understanding of which vehicles are the most polluting.

In Hackney the largest emission source of nitrogen oxides (NO_x) is road transport contributing to 64%. Chart 1 shows the breakdown of road transport sources based on 2016 LAEI data, with TfL buses and diesel cars making up 27% and 22% of emissions, respectively. Since this time, all TfL buses have been upgraded so that they all meet Euro VI emissions standards. As a result, the proportion of transport NO_x emissions from London's buses is now estimated to be around 4%. This shows that emissions from road transport can be reduced significantly with the right action and investment. The second highest emission source of NO_x within Hackney is industrial/commercial heat and power, contributing to 16% of emissions.

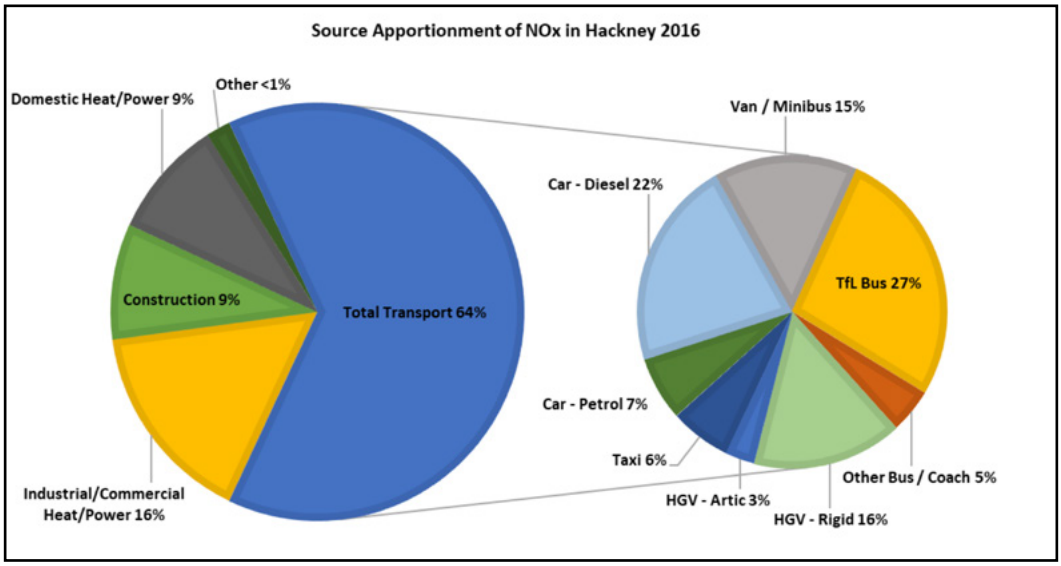


Chart 1: NO_x Emission Source Contribution (LAEI, 2016)

Chart 2 shows that for PM_{10}, construction is the largest contributor, at 37% and road transport is the second largest contributor, making up 25% of emissions. Within this diesel and petrol cars are both shown to contribute 6% of PM_{10}.

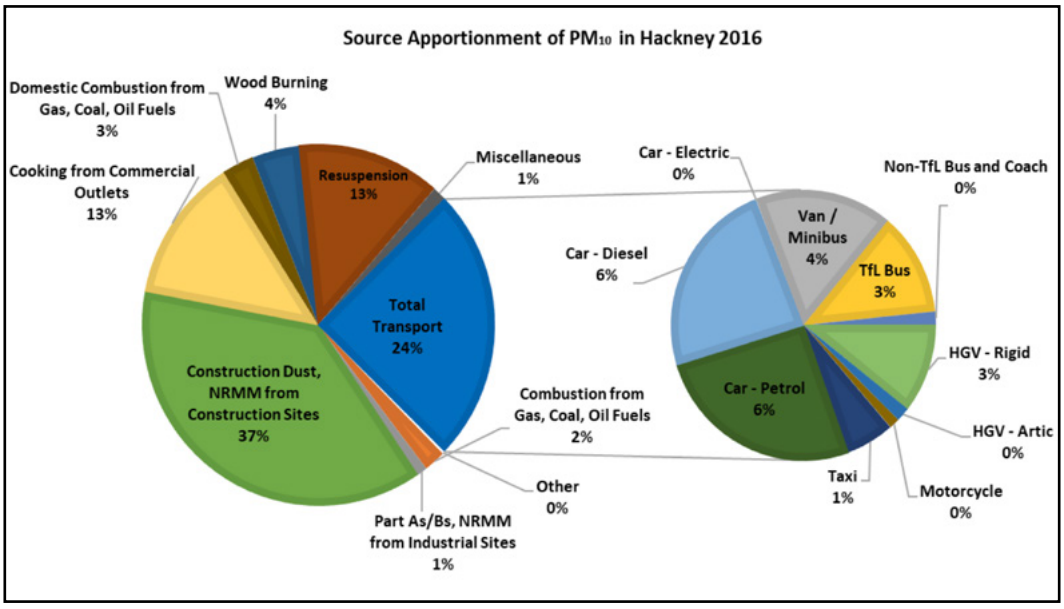


Chart 2: PM_{10} Emission Contribution (LAEI,2016)

Road transport is also the highest emission source of $PM_{2.5}$ within Hackney, making up 29% of emissions. Diesel and petrol cars make up the largest proportion of these transport emissions with 8% and 6% emissions, respectively. Commercial cooking and construction activities within Hackney are also high emitters of $PM_{2.5}$, contributing to 28% and 17% of the total emissions (Chart 3). This shows that $PM_{2.5}$ has multiple high emitters in comparison to NO_2, where road transport is the dominant source.

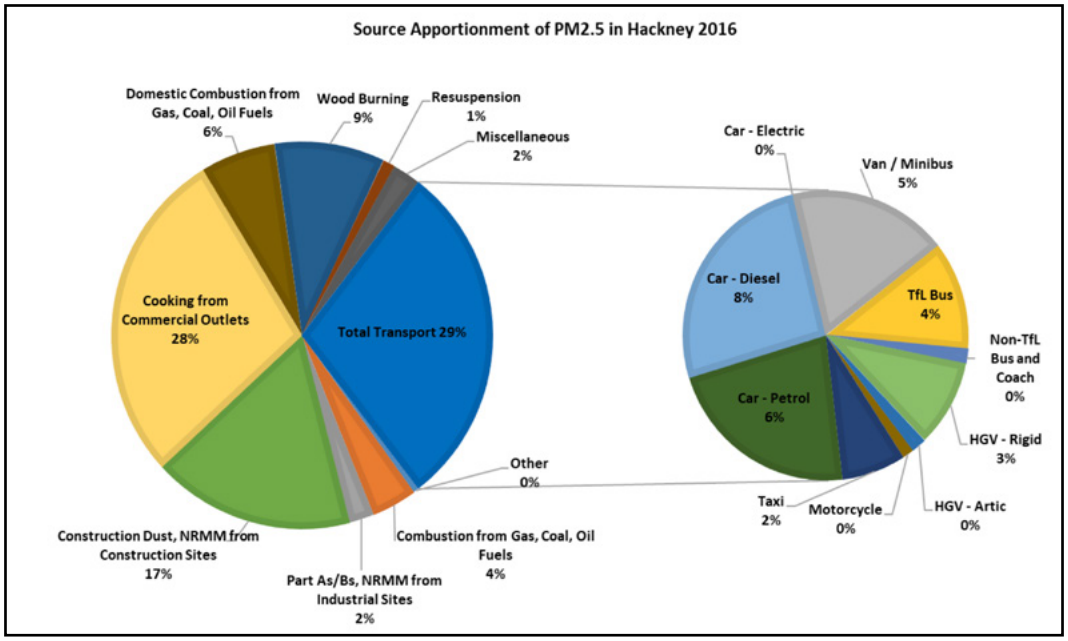


Chart 3: $PM_{2.5}$ Emission Contribution in Hackney (LAEI, 2016)

2.3 Future Air Quality in Hackney

Due to improvements in vehicle emission standards, the uptake of electric vehicles (EV) through schemes such as the Ultra-Low Emission Zone (ULEZ), which the Council lobbied successfully to be extended to the entire borough from October 2021, and an increase of electric heating, NO_x concentrations within Hackney and across London are expected to decline. Chart 4 shows the LAEI emission predictions for NO_x in tonnes/year (t/year) in Hackney, there is estimated to be a steady reduction in NO_x from approximately 1159.4 t/year in 2008 to an estimated 484.5 t/year by the end of 2020 and an estimated 396 tonnes/year in 2030.

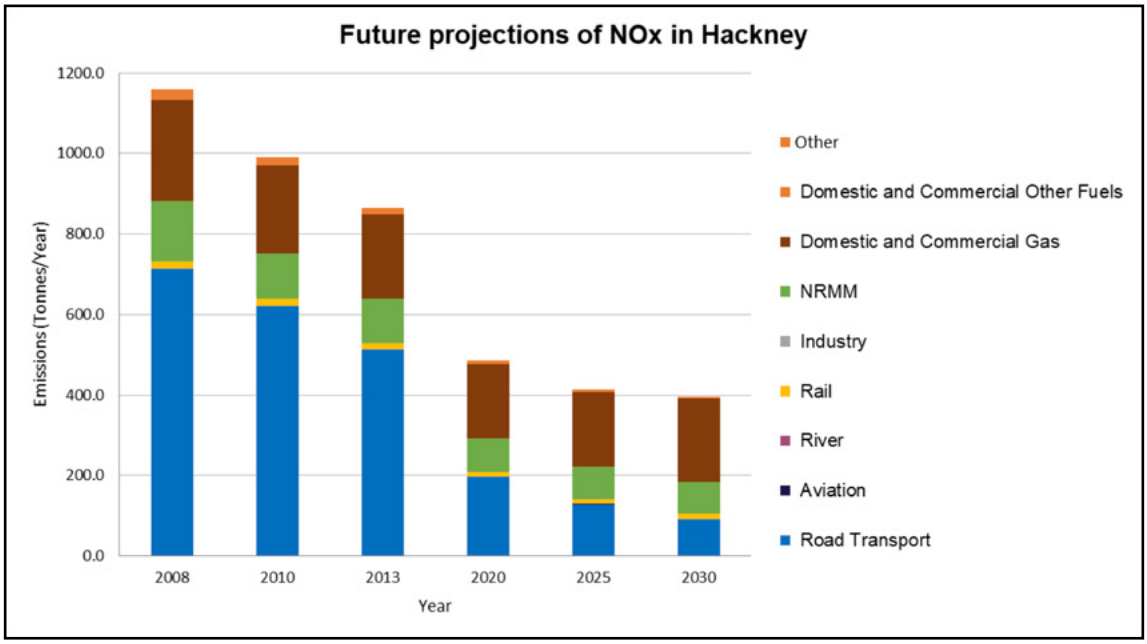


Chart 4: Future projections of NO_x (LAEI, 2013)

However, particulate matter concentrations ($PM_{2.5}$ and PM_{10}) are not expected to fall as much due to concentrations influenced from long range sources such as biomass emissions from Continental Europe and emissions from EVs. It should be noted that in Chart 5 and 6 *Industry* refers to the total emissions from Part A and Part B industrial processes combined;
Non-Road Mobile Machinery (NRMM) refers to the total emissions from construction and industrial off road machines combined, and; *Other* refers to a number of small sources including: agriculture, outdoor fires, garden emissions, forests, waste and waste transfer sites combined.

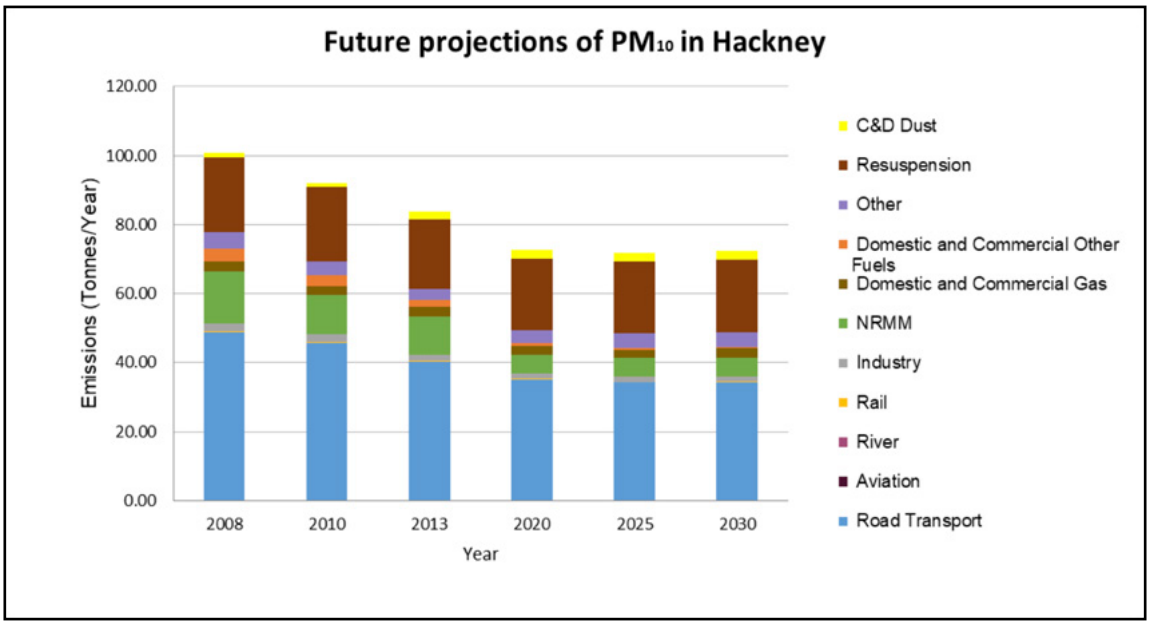


Chart 5: Future projections of PM_{10} (LAEI, 2013)

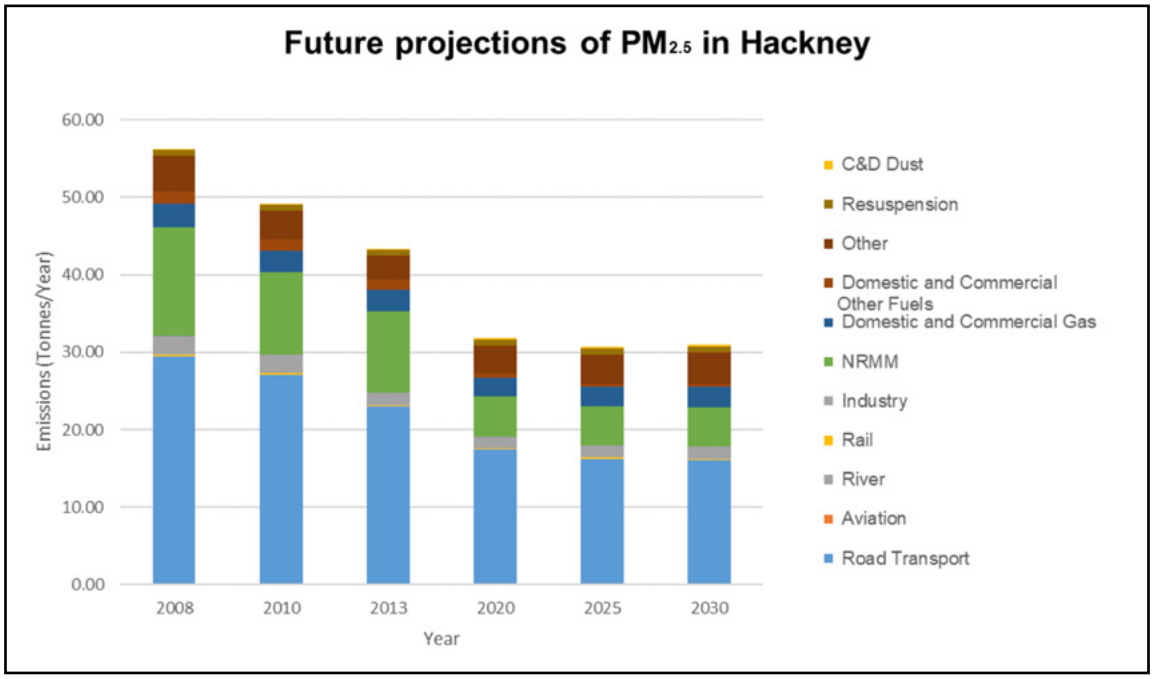


Chart 6: Future projections of $PM_{2.5}$ (LAEI, 2013)

PM_{10} projected emissions are shown to reduce in chart 5 with approximately 100.1 t/year in 2008, an estimated 72.8 t/year by the end 2020 and an estimated 72.5 t/year in 2030. The reduction in projected $PM_{2.5}$ emissions is shown in chart 6 with approximately 56.2 t/year in 2008, an estimated 31.9 t/year by the end of 2020 and an estimated 30 t/year in 2030.

The predicted trajectory of NO_2, $PM_{2.5}$ and PM_{10} show reductions in concentrations. NO_2 is predicted to have the largest decline in concentrations due to schemes including the ULEZ. Although these schemes are predicted to reduce particulate matter concentrations to some extent, these projections show the challenges still faced in tackling particulate matter concentrations, which our action plan proposes to address. This highlights the long term challenges on tackling pollutant concentrations, especially particulate matter. This suggests long term proposed national policies are expected to have little impact which is why we need to do more at a local level and lobby the Government to introduce stricter measures on a national level.

3.0 Hackney's Air Quality Priorities

The following sections detail Hackney's Air Quality Action Plan commitments, whilst highlighting some key successes and our headline actions based on our nine themes.

3.1 Monitoring and Other Core Statutory Duties

Our commitment

We will continue to monitor air quality in Hackney which will enable us to propose measures to reduce or mitigate against the impacts of poor air quality in the Borough. We will further ensure that our statutory obligations are met with regards to the requirements as set out in the LLAQM framework.

Why this is important

All local authorities have responsibilities under Part IV of the 1995 Environment Act, which requires us to review air quality in our constituencies. Where air quality objectives and limit values are not being met, an Air Quality Management Area (AQMA) must be designated. The legally binding limit values are derived from the EU Ambient Air Quality Directive 2008 and have been transposed into legislation as the Air Quality Standard Regulations 2010. We need to monitor air quality so that we can assess whether we're achieving the objectives, and where we're not, implement measures to improve the air quality, thereby creating healthier air in which we all can breathe.

What we have done

We have one of the most extensive diffusion tube monitoring networks in the country totalling over 200 tubes. Each month these diffusion tubes are changed, allowing us to monitor levels of NO_2 across the Borough. Along with the diffusion tubes our network includes two automatic monitors, one kerbside at Old Street and one urban background currently located in Hackney Marshes. Further to this, there are 5 AQ Mesh Pods installed to support transport related work and 2 Osiris particulate matter monitors.

The data from these monitors has been used to advise on project and policy work as exemplified by the London Fields barbeque ban. The Osiris monitors were used to assess the levels of particulate matter in London Fields and the surrounding locations. When the data showed a clear association of high particulate matter levels on days when barbequing was prevalent, we were able to use this to ban barbequing in this area and subsequently protect the health of visitors and local residents.

The results from all of our monitoring are reported back to the GLA and Defra on an annual basis, and published on our website.[12]

We will

- Adopt WHO guidelines for PM_{10} and $PM_{2.5}$ with a compliance deadline by 2030;
- Maintain air quality monitoring network (PM and NO_2), review as required and provide output data in line with TG (16) timescales and guidance;
- Publish a webmap showing monitoring results;
- Undertake dispersion modelling for the Borough;
- Report health-based air quality statistics at a ward level on the Hackney website;
- Facilitate cross borough partnership to review through traffic impacts in Hackney;
- Achieve gold standard in GLAs Cleaner Air Borough (CAB) programme.

3.2 Emissions from Development and Buildings

Our commitment

We will ensure that non-transport related emissions are controlled by reducing emissions from our own buildings and housing stock, by controlling emissions from construction sites and by promoting the impact of other sources of emissions and the action that individuals can take to reduce these, improving air quality for all.

12 https://hackney.gov.uk/air-what-we-are-doing

Why this is important

Substantial emissions are released from non-transport related sources in Hackney. This includes developments, construction and demolition, buildings and their heating sources, non-road mobile machinery (NRMM), solid fuel burning and commercial cooking. All these combined contribute to 246 tonnes per annum of NO_x emissions, 117.3 tonnes per annum of PM_{10} emissions and 51 tonnes per annum of $PM_{2.5}$ [13] resulting in poor air quality, and actions are required to reduce these emissions.

What we have done

Targeting non-transport emissions is important, and a number of actions have been undertaken in this area. Evidence shows that one modern wood burning stove can emit the same amount of particulate matter as 18 diesel cars. Furthermore, wood burning accounts for up to 31% of the urban derived $PM_{2.5}$ in London.[14] To combat this, the ZEN launched a behaviour change campaign raising awareness of the impacts of domestic and commercial solid fuel burning in Hackney. Householders and businesses were informed of the contribution solid fuel burning has to levels of particulate air pollution and encouraged actions as to how households and businesses can eliminate or reduce their emissions from solid fuel burning.

We are a partner borough of the Mayor of London's NRMM Project and all use of NRMM in Hackney must meet emission standards set by this project. The project is monitored through regular site inspections and if standards are not met, then work on the site is halted. Working to these emission standards minimises particulate emissions from NRMM on construction sites.

We work with developers through the planning process to ensure that construction work and new developments do not add to poor air quality in the Borough and that the health of future occupiers is protected. This includes, but isn't limited to; certain developments requiring an air quality assessment before planning permission is granted; for residential developments measures must be implemented to protect residents from the impacts of air pollution, and; all new developments installing boilers have to comply with the GLA emissions limits or they must install Ultra-Low NO_x boilers.

In addition, to tackle air quality and promote walking and cycling, Hackney's Local Plan 33[15] states that all new developments must as a minimum not exceed Air Quality Neutral standards and where possible meet Air Quality Positive standards, and must not contribute to a worsening of air quality at the construction and operation stage over the lifetime of a development. Moreover, all new major developments must be car free, with parking limited to disabled spaces or essential servicing needs.

We have controlled the release of emissions from our housing stock by upgrading and replacing on average 1,500 heating facilities each year and we'll continue to insulate our buildings through the recent launch of Hackney Light and Power.[16] We have established a system to monitor and control emissions released from prescribed processes, such as petrol stations and dry cleaners. For every commercial activity in the Borough that has potential to release emissions to the air, we ensure they adhere to the Environmental Permitting (England and Wales) Regulations 2016.[17]

13 Greater London Authority and TFL Air Quality, LAEI 2016 – Borough Air Quality Data for LLAQM [Online]. Available: https://data.london.gov.uk/dataset/laei-2016---borough-air-quality-data-for-llaqm [Accessed June 2020]
14 Department for Environment, Food and Rural Affairs (2019) Clean Air Strategy 2019.
15 https://hackney.gov.uk/lp33
16 https://hackney.gov.uk/hackney-light-and-power
17 https://hackney.gov.uk/environmental-permits

3.3 Public Health and Awareness Raising

Our commitment

We will undertake surveys so we can assess what level of the public is aware of and understands the health impacts of air pollution, and we will run public health campaigns showing the consequences of motor traffic, air pollution and lack of active health leading to poor health and obesity.

Why this is important

Given the strong association between air pollution, Covid-19 and cardiovascular and respiratory illness, the quality of Hackney's response to improving air quality is vital for public health. We have a responsibility to ensure the health and wellbeing of our residents and visitors and the unequivocal link between air pollution and the degradation of public health poses a challenge to this.

As such we will bolster efforts to increase people's knowledge about the air pollution issue, encourage people to alter habits to expose themselves to less pollution or cause less pollution and build an appreciation of the importance and benefits of community-wide solutions to improving air quality. This is so we may increase resident and business receptivity to changes that we know are necessary to cut pollution.

What we have done

Our previous action plan highlighted the need to address several key areas relating to public health. Included within this was working with our schools to raise awareness of air pollution and reduce exposure at and around schools (see section 2.8).

We have undertaken cycling campaigns as well as ensuring due consideration is given to air quality in Hackney's Public Health policy documents. This includes updates to Hackney's Joint Strategic Needs Assessment and Health and Wellbeing Profile, along with delivering information to the public and the most vulnerable communities. This has been achieved through the promotion of airTEXT, which has been active since the publication of the Council's previous plan and can be easily accessed on Hackney's website[18].

Moreover, Public Health and Streetscene have supported research on walking in Hackney and implemented a joint social marketing campaign in 2016-17 to increase walking and reduce car driving, especially among less physically active residents. The campaign reached over 200,000 mobile devices, 405 households in person, and participants recorded over 15,000 hours of walking.

We will

- Run air quality campaigns to raise awareness and encourage behaviour change;
- Develop a Joint Strategic Needs Assessment (JSNA) that will focus on air quality and public health;
- Develop and promote the existing high air pollution alert system;
- Continue to collaborate in the cross-borough project encouraging canal boat owners to switch from wood burning stoves and diesel engines to electric or more sustainable fuels.

18 https://www.hackneyicare.org.uk/kb5/hackney/asch/service.page?id=mSRc2SfPrZU

3.4 Delivery Servicing and Freight

Our commitment

We will ensure that emissions from delivery services and freight transport are controlled and reduced in Hackney. This includes a reduction of emissions from our own fleet, plus a reduction in emissions from large goods vehicles (LGVs) and heavy goods vehicles (HGVs) used for construction and delivery of goods and services.

Why this is important

Tackling emissions from freight is a key part of the Mayor's Transport Strategy and must be addressed; LAEI data in Hackney shows that LGVs and HGVs account for 21.6% of NOx emissions, 12.3% of PM_{10} and 11.4% of $PM_{2.5}$ emissions[19]. Moreover, through reducing and consolidating the number of delivery and servicing goods vehicles congestion will be lowered and our streets will be safer.

What we have done

In an effort to control emissions from freight movements in the Borough we have introduced elements of the Construction Logistics and Community Safety Standard (CLOCS) for the Council and developers. This is controlled through the planning process and provides ways in which vehicle trips in vulnerable locations can be minimised, for example ensuring that a school is not impacted by a construction traffic route.

To minimise emissions from our own fleet, we have registered and been accredited the Bronze Standard with the Fleet Operator Recognition Scheme (FORS) for our waste services.

Further to this, 'reduced transport' now forms part of the new Sustainable Procurement Policy that was adopted in late 2018. The policy promotes the purchase of goods which have not been transported over long distances and where possible will work with local suppliers to reduce overall emissions within the supply chain. In addition, the policy outlines that when procuring for our own fleet we will choose products that cause lower levels of pollution, either through their manufacture, usage or disposal.

To further reduce the impact from freight deliveries we have worked on the reduction of and retiming of deliveries of goods and services in areas of Shoreditch and the Narrow Way in Hackney Central, with deliveries banned in this area between 10am and 6pm.

We will

- Deliver the Freight Action Plan as part of the Hackney Transport Strategy (2015-2025);
- Adopt the Construction Logistics and Community Safety Standard (CLOCS) for the council and developers;
- Develop area-wide Construction and Logistics Plan and review of local CLPs;
- Work with consumers and delivery companies to help reduce local emissions through the Zero Emissions Network.

19 Greater London Authority and TFL Air Quality, LAEI 2016 – Borough Air Quality Data for LLAQM [Online]. Available: https://data.london.gov.uk/dataset/laei-2016---borough-air-quality-data-for-llaqm [Accessed June 2020]

3.5 Borough Fleet

Our commitment

We will continue adding to the number of Ultra Low Emission and electric vehicles (EVs) in our fleet to reduce air pollution and ensure we have one, if not the most, environmentally friendly fleets in the country.

Why this is important

By addressing the composition of our fleet, the Council is able to reduce pollution directly at source. Our fleet now includes a range of EVs and cargo bikes and is one of the greenest in London. To ensure that we continue to lead by example, further opportunities have been identified to progress in this area.

What we have done

In 2018 we won the 'What Van? Green Fleet of the Year' award due to the sustainable development of our fleet management programme, with our fleet now contributing to an estimated yearly reduction in emission of 0.5 tonnes of NO_x and 40kg of particulate matter.

This was achieved through a programme of procuring 59 EVs and installation of 47 electric charging points across 13 Borough depots. Moreover, the majority of our non-electric fleet vehicles are Euro 6 emissions compliant with stop start technology equipped in LCVs and auto-shutdown fitted in HGVs to prevent idling[20].

We have used hydrotreated vegetable oil (HVO) as an alternative fuel source with a large majority of the fleet running on HVO. To quantify emissions reduction, we worked in collaboration with TFL and developed test cycles for larger commercial Council vehicles using 100% HVO and emissions tested HVO fuel demonstrating that it emits 30%-60% less NO_x than a vehicle run on standard diesel.

To further encourage more modes of sustainable transport for staff, we have implemented a Staff Travel Hierarchy to promote cycling and walking as a means of business travel. To facilitate this, we have introduced a pool bike fleet, including a cargo bike, to add to the Fleet's 30 bicycles. With this shift in travel mode we are further reducing emissions from Borough vehicles and leading from the front.

We will

- Increase uptake of electric vehicles and ensure electric vehicle charging infrastructure is commensurate with growth in the Borough's Fleet;
- Re-establish use of Hydrotreated Vegetable Oil (HVO) as an alternative fuel source through establishing a new bulk contract;
- Increase the existing number of bicycles, electric bikes and cargo bikes in the Council fleet to ensure there are enough sustainable forms of transport for staff to use;
- Collaboration with other public sectors to assess emissions in Hackney and identify funding for zero emission vehicle trials.

20 https://hackney.gov.uk/fleet-project

3.6 Localised Solutions

Our commitment

Improving local air quality in Hackney is a priority, and we will continue to implement local solutions so that our residents and those who visit and work in Hackney have cleaner air to breathe.

Why this is important

One of the fundamental methods of mitigating poor air quality is by altering our local environment. These solutions seek to improve our surroundings for people and the environment through a combination of measures such as traffic calming, parklets, biodiversity projects and green infrastructure installations.

What we have done

Hackney's Low Emissions Neighbourhood (LEN) has been introduced through collaborative work with the ZEN programme to combat air pollution in the City Fringe.[21] LEN has introduced schemes that prioritise walking, cycling and the use of EVs. The scheme has been developed in partnership with neighbouring Boroughs Islington and Tower Hamlets and funded by the Mayor of London. Further initiatives within this programme include:

- **Public Realm Improvements:** Alterations have been made to Bowling Green Walk, Rivington Street/Charlotte Road and Garden Walk, all in Shoreditch. These alterations reduce pollution through reduction of cars and increase cycling and walking permeability through physical alterations such as removal of railings and provision of additional lighting.
- **Cycle Parking at Leonard Circus:** The addition of 10 new bike parking spaces on the East side of Leonard Circus have been installed.
- **Shoreditch Parklet:** Removal of car parking spaces and the creation of a new parklet area in Shoreditch that provides cycle parking spaces, planted vegetation and space for relaxation.
- **Vegetation and Planting:** Planted trees and added plant boxes to Rivington Street, Charlotte Road and Pitfield Street.
- **Ultra-Low Emissions Streets:** Pioneered the first ever ultra-low emissions streets that remove all but the greenest vehicles from Hackney's streets. Vehicles travelling through five streets during peak hours in Shoreditch now have to either be zero tail pipe emissions such as NO_x or emit 0-75g or less of CO_2 per km driven.
- **Gateway Plan:** Introduced electronic gateways that signify when you are entering an area of lower pollution. The gateways consist of greening, lighting and wayfinding and are spread across the LEN area at strategic points.
- **Sustainable Transport:** Promoted alternative sustainable transport solutions such as offering businesses trials for cargo bikes, electric vans, electric cars and electric scooters plus free bike servicing.

To support policies such as the Mayor of London's Ultra Low Emissions Delivery Plan and the Office for Low Emission Vehicles (OLEV) Go Ultra Low scheme, we have installed 116 publicly accessible electric vehicle charging points at 91 locations across Hackney. We have also been the first borough to install publicly accessible on-street rapid charging points, including rapid charging points for taxis.

21 https://zeroemissionsnetwork.com/len

Over 120 traffic filters have been introduced in Hackney to reduce the volume of traffic rat-running through residential streets. This forms a key part of Hackney's Transport Strategy 2015-25 and eliminates through traffic thereby improving air quality whilst also prioritising cycling and walking. Where short-term traffic displacement is encountered, we will put mitigation measures in place so that nobody in Hackney is detrimentally impacted by the Borough's decision to focus on the longer-term goal of overall traffic and subsequent air pollution reduction.

Improvements have been made to numerous streets throughout the Borough to promote the uptake of active methods of travel, such as cycling and walking, while discouraging vehicular traffic. There have been changes to pavement spaces; planting significantly more trees and traffic calming measures have been put into place to slow traffic with the majority of the borough now at a 20mph limit. Moreover, multiple changes to cycle routes such as the cycle superhighway have enabled safe passage through the Borough, which has ensured Hackney remains London's capital of cycling.

Further to this, parking spaces in Hackney have been transformed into community parklets and spaces for cycle hangers. These initiatives have reduced the dominance of cars whilst also cutting air pollution and making our communities a more pleasant place in which to live.

We will

- Assess the air quality benefits of the actions in Rebuilding a Greener Hackney: Emergency Transport Plan, the Transport Strategy 2015 - 2025 and the Local Implementation Plan 2019 – 2022;
- Deliver Britain's first 21st Century Street in Colvestone Crescent, Dalston;
- Hackney Parks Team to implement initiatives to improve air quality.

3.7 Cleaner Transport

Our commitment

To create a borough that provides an environment that reduces reliance on cars and stimulates the shift to more sustainable modes of transport.

Why this is important

Heavy dependency on the use of cars, in particular petrol and diesel, not only causes traffic congestion, but also increases emissions and physical inactivity. Hackney already has one of the lowest rates of car ownership in the country and has the highest rates of public transport use in London. Ensuring that initiatives are introduced that support the use of sustainable transport modes and cleaner vehicles will help to meet the transport needs of Hackney residents and lead to reduced emissions throughout the Borough which benefits everyone. To achieve this, modal shifts will still need to take place so that more people walk and cycle and there needs to be a significant shift in mentality surrounding the use of diesel and petrol vehicles.

What we have done

Promoting walking and cycling is key to reducing emissions. Various approaches have been taken to enhance walking and cycling levels and to reduce and limit the use of cars, in particular petrol and diesel vehicles.

To facilitate this change, we have worked in collaboration with the Zero Emissions Network (ZEN), which has thus far delivered significant air pollution reducing initiatives many of which

have encouraged businesses in the City Fringe to switch to low or zero emissions vehicles.[22] The network now has approximately 1,430 business members delivering over 870 measures to reduce pollution and has recruited over 900 residents delivering 470 measures contributing to pollution reduction. Initiatives include EV trials and grants for cargo bikes, and a range of behaviour change and awareness raising campaigns.

We have championed World Car Free Day for several years and delivered our largest event in 2019 on Church Street, Stoke Newington.[23] This event gives local residents and businesses a snapshot of what their community would be like if vehicles were not permitted to travel in their streets, by transforming busy polluting roads into a safe and clean space for all to enjoy.

We have controlled and reduced emissions through Parking by implementing emissions-based parking across the majority of Hackney. The scheme is now also active on estates and adds a surcharge for diesel vehicles and aims to discourage residents from buying the most polluting vehicles.

We have established a comprehensive anti-idling campaign to tackle engine idling within the Borough, through a behaviour change campaign. This highlights the harmful impact of idling engines, as well as the economic benefits of turning off engines when vehicles are at a standstill. For those not complying with turning engines off, enforcement action will be taken in Hackney's 'town centre' areas.

To reduce the need for privately owned vehicles, we have established car clubs that use full EVs and ULEVs to provide a safer, cleaner and greener way of using a car when needed.[24]

There are now over 1,500 vehicles that can be hired, with every resident being in proximity to a designated bay.

Hackney has already been declared London's Borough of Cycling through having the highest rates of cycling in London. Hackney's Transport Strategies and supporting Cycle Plan delivers a platform for growth in this area, delineating how there can be a modal shift in transport from pollution creating vehicles to cycling. Highlights of this include:

- Free cycle training to residents, workers and students in the Borough plus regular servicing days to maintain bikes;
- Bike sharing schemes including the Santander operated scheme where bikes are docked in the south of the Borough. Dockless biking is now available with 70 new dockless bike bays throughout Hackney;
- Cargo bikes for businesses through the ZEN programme;
- Cycle Superhighway 1 runs directly through the Borough and allows for direct access to Liverpool Street Station;
- Over 2,500 publicly accessible on-street cycle parking spaces, including secure lockers and hangers;
- Regular cycle awareness days including the world record breaking Bike Around the Borough which promotes cycling to and for students.

Hackney is London's leading active travel borough with the highest walking levels in London;

22 https://zeroemissionsnetwork.com/
23 https://hackney.gov.uk/car-free-day
24 https://hackney.gov.uk/carclub

44.2% of people choose to travel this way. To ensure this level is increased there have been numerous public realm and placemaking schemes aimed at improving walking conditions through the Borough, including Hackney Central Narrow Way.

We will

- Provide new cycling and walking infrastructure and assess air quality impacts of new infrastructure;
- Increase provision of street space at busy bus stops to allow more room for boarding;
- Increase on-street and off-street cycle parking;
- Work with Transport for London on improvements to the provision of public transport;
- Roll out Hackney's anti-idling campaign to discourage vehicle users from idling their engines;
- Support communities wishing to hold Car Free Days;
- Deliver updated Parking and Enforcement Plan;
- Assess potential impact of installing Ultra-Low Emission Vehicle (ULEV) infrastructure (electric vehicle charging points, rapid electric vehicle charging points);
- Develop and assess potential impact of Hackney's Motorcycle Action Plan.

3.8 Schools and Communities

Our commitment

We will go above and beyond to ensure that susceptible groups i.e. those in schools, care homes and medical facilities, will not suffer as a result of poor air quality.

Why this is important

Targeting the most vulnerable receptors in Hackney is required in order to ensure those most at risk are given the required attention. The most susceptible groups are identified as those who are also disproportionately affected by poor air quality, such as the elderly, pregnant women and those with pre-existing health conditions. We also believe there should be a heavy focus on schools so that children's lung and brain growth aren't hindered by the impact of air pollution whilst at school.

What we have done

In order to design strategies that protect sensitive groups, we need to understand what the air quality concentrations are at these locations, and we have re-evaluated our air quality monitoring network to primarily focus on the area's most in need of monitoring, including schools and also care homes and medical centres targeted. This enables us to identify if mitigation measures need to be implemented.

To reduce exposure to air pollution and help children actively walk or cycle to school, the Council introduced the School Streets programme in 2018 as part of the Local Implementation Plan 2019-2022. So far this has transformed 40 schools into safe and pollution free zones where only pedestrians or cyclists can travel at opening and closing times. Further, Hackney published a toolkit, and then distributed it to every council in the country, so they too can replicate the success of this programme.[25]

25 https://hackney.gov.uk/school-streets

Installing green screens at schools has been a method through which the exposure to harmful pollutants can be reduced. So far 3 green screens have been installed that lead to a reduction in exposure through blocking and absorbing harmful pollutants. Further to this, a Green Screen guide has been produced to assist with the installation of green screens at other schools.

134 Hackney schools participate in TfL's Sustainable Travel, Active, Responsible and Safe (STARS) programme. The initiative rewards schools that encourage students, parents and teachers to adopt more environmentally friendly ways of travelling to school. This includes cycling, walking and the use of public transport, all methods that contribute towards lower pollution concentrations.

In conjunction with the GLA we completed a desktop audit of all primary schools in the Borough to assess if they exceeded any of the national air quality objectives. Resulting from this, two schools received funding to implement a number of measures to improve active travel and to reduce exposure to emissions.

Reducing concentration and exposure at medical centres and care homes across the Borough is vitally important. To address this, the Council embarked on the "Low Emission Neighbourhood for Business" project in partnership with Homerton Hospital. Funding was secured through the Mayor of London's Local Enterprise Action Partnership. The project aimed to encourage Homerton Hospital staff to use more sustainable transport modes for commuter and business trips and to support patients' visitors to access the site using more sustainable modes of travel. Outputs included replacing four petrol vehicles with electric, increased secure staff cycle parking, installation of a network of EV charging points and the development of a Staff Travel Policy.

We will

- Reduce air pollution near schools and protect children through the delivery of the School Streets Programme;
- Reduce air pollution at schools and protect children by delivering more green screens;
- Reduce air pollution near schools and protect children through increasing uptake of the STARS programme;
- Facilitate and lead schools auditing and improvement programme for all schools in Hackney;
- Review pollutant concentrations at all healthcare centres, hospitals, care homes and schools and where relevant implement an audit and improvement scheme.

3.9 Lobbying

Our commitment

We will continue our successful track record of working with and lobbying regional and central government on policies and issues beyond the Council's control.

Why this is important

This plan has targeted actions we have and will undertake at a local level to ensure that air quality improves for people who live, work and visit Hackney. However, whilst a number of levers are in our control such as reducing emission from our fleet and parking enforcement, there are a large number of air quality policy areas outside our influence. These include ensuring Euro vehicle standards are adopted post-Brexit and national scrappage schemes. We know that air pollution knows no boundaries, and we will continue lobbying for change to ensure cleaner air for all.

Lobbying is vital because we will only achieve our goals of WHO Air Quality Guidelines with a cross-societal effort incorporating businesses, the public and other public sector institutions, alongside central and local government.

What we have done

Hackney has a history of successfully lobbying regional and national Government, including being a lead Borough in lobbying Transport for London (TfL) to extend the Ultra-Low Emission Zone from central London to the north and south circular roads. This will be introduced in October 2021 and all vehicles within this boundary, including all Hackney, will be subject to the ULEZ standards.[26] We have also responded to Government consultations calling for an end to airport expansions.

We will

- Lobby Central Government to control and reduce emissions that are out of Hackney's authority;
- Lobby TfL to expand Ultra Low Emission Zone (ULEZ) post 2021 and introduce more fully electric bus routes through Hackney;
- Work with others to reduce pollution that is out of our control.

4.0 Development and Implementation of Hackney's AQAP

4.1 Consultation and Stakeholder Engagement

Over the years we have worked with other local authorities, agencies, businesses and the local community to improve local air quality, and this has been the driving force in developing and updating the action plan.

Schedule 11 of the Environment Act 1995 requires that local authorities consult with a number of specific organisations and groups when preparing their AQAP. For Hackney, relevant consultees include the Secretary of State, the Environment Agency, the Highways Authority, the Mayor of London, neighbouring local authorities, other public authorities and bodies representing local business interests and other organisations. Given the strategic importance of the AQAP, Hackney will further consult with the wider public and business community. Table 3 details those we will consult.

26 https://tfl.gov.uk/modes/driving/ultra-low-emission-zone/ulez-where-and-when

Yes/No	Consultee
Yes	Secretary of State
Yes	The Environment Agency
Yes	Transport for London and the Mayor of London (who will provide a joint response)
Yes	All neighbouring local authorities (Islington, Newham, Tower Hamlets, Waltham Forest, Haringey and City of London)
Yes	Other public authorities as appropriate (The Environment Agency, Homerton Hospital)
Yes	Bodies representing local business interests and other organisations as appropriate
Yes	Members of the public

Table 3: Consultation groups

4.2 Steering Group

The Steering Group has been integral to the development of the AQAP and is made up of officers from internal departments including Public Health, Environmental Services, Streetscene, Parking, Fleet Management, Parks Service, Hackney Homes, Hackney Energy, Planning, Communications and Sustainable Procurement. To assist in developing the plan, there have been stakeholder engagement sessions held, where all members of the Steering Group were invited to a workshop to discuss and contribute ideas on how to progress with the plan.

Thereafter, there have been numerous individual meetings with the Steering Group members to refine and develop specific actions on how each department can contribute to controlling and reducing air pollution within the Borough. This collaborative work has been essential to the development of the plan and forms the basis of how as a Council we will tackle this issue collectively. Once the plan had been drafted each member of the Steering Group was then given the opportunity to assess the work and ensure the output for their area was realistic and achievable.

5.0 Action Plan Table

The following pages detail Hackney's Air Quality Action Plan, with actions grouped into our nine themes:

1. Monitoring and other core statutory duties
2. Emissions from development and buildings
3. Public health and awareness raising
4. Delivery servicing and freight
5. Borough fleet
6. Localised solutions
7. Cleaner transport
8. Schools and communities
9. Lobbying

5.1 Air Quality Action Plan

For each policy objective an indication of cost is given.

	Description
Indication of cost	No additional cost – may be undertaken with existing staff/financial resources
	Low cost (Officer time) – less than £10,000 to deliver
	Medium cost – between £10,000 and £50,000 to deliver
	High cost – above £50,000

Table 4: Indication of cost key

Action Plan Matrix

Table 5: Air quality action plan

Appendix A: Response to Consultation

Consultation on the draft updated Air Quality Action Plan took place between 14 December 2020 and 7 March 2021. All Statutory Consultees were consulted via a direct communication. An online consultation was made available to all members of the public and was promoted using a variety of different platforms. Owing to a national lockdown being in place, promotion in certain venues was not possible. In order to gather the views of as many people as possible, consultation took place over an extended period with direct communications being sent to a variety of groups who were continuing to provide face-to-face services throughout the lockdown period.

We received 673 responses in total and we are very grateful for all the comments received. The overall response to the content of the draft Action Plan was positive and there was net agreement with all of the themes and priorities. As well as expressing agreement / disagreement with the themes and priorities, many respondents used the opportunity to provide additional comments. These were all reviewed and taken into consideration with recurring themes being identified.

Some of the main themes to emerge were:

- Recognition of the impacts of air pollution on health so strong support for action to be taken to improve air quality;
- More information about air pollution levels was requested so that people could be aware of risks and make informed choices;
- Recognition that certain groups were more vulnerable, but particularly children so strong support to take action in and around schools;
- The impacts of motor vehicles on air pollution and, although people wanted transport emissions to be tackled, there were different views on the best approach. However, almost all felt that the Council and communities need to work together;
- Feeling that the role that public transport can play in improving air quality needed to be made stronger;
- Support for cycling infrastructure and for this being integrated into scheme designs;
- Support for education and raising awareness but people also wanted to see the Council back this up by using its powers to enforce compliance;
- The impacts that solid fuel burning can have on local air quality and a desire for more work to be done to tackle this source of emissions;
- Desire for more greening and to use trees to help reduce exposure to air pollution.

As a result, changes were made to the contents of the draft Action Plan. An additional column (Column I) has been inserted into the action matrix to help illustrate where changes were made to the consultation document and a summary of the comments which led to the change. We recognise that, for the Action Plan to be effective, it requires the support of all stakeholders and members of the community so we have sought to demonstrate how the comments received have helped to shape the document and we look forward to working together on its implementation.

Appendix B: Air Quality in London

The first legislation in the UK covering air quality was The Clean Air Act 1956, created as a response to 'The Great Smog' that was engulfing London at the time. Local government was not given responsibility for managing local air quality until the 1990s when the 1995 Environment Act was passed. A requirement of the Act was for the Government to create a UK Air Quality Strategy, which was published in 1997. We are now on the third iteration of this strategy with the latest Clean Air Strategy published in 2019. This updated strategy shows the scale of the issue and that there are many factors in tackling air quality that are only possible at national and even international level.

Despite improvements in air quality that have taken place in past decades, there are two key pollutants that remain a particular concern: NO_2, and particulate matter (PM_{10} and $PM_{2.5}$). The GLA commissioned a report that estimated over 9,000 Londoners died prematurely from long-term exposure to air pollution in 2010.[27] Air pollution limits, as set out in the 2008 Ambient Air Quality Directive, are not being met in many areas, and are worse in inner London, in particular where there are concentrations of traffic and areas of high building densities.

London NO_2

Across London's inner boroughs, the NO_2 annual mean NAQO is consistently breached. The highest concentrations are found at the kerbsides of busy roads which experience regular high volumes of traffic such as the A10. In outer London borough areas, kerbside locations also show consistent breaching of the annual mean NO_2 NAQO. However, away from major roads, at urban background locations such as some residential areas and parks, concentrations tend to be within the NO_2 annual mean NAQO. Figure 7 below shows the change in the NO_2 annual mean concentrations across London using modelled data based upon 2016 air quality monitoring data.

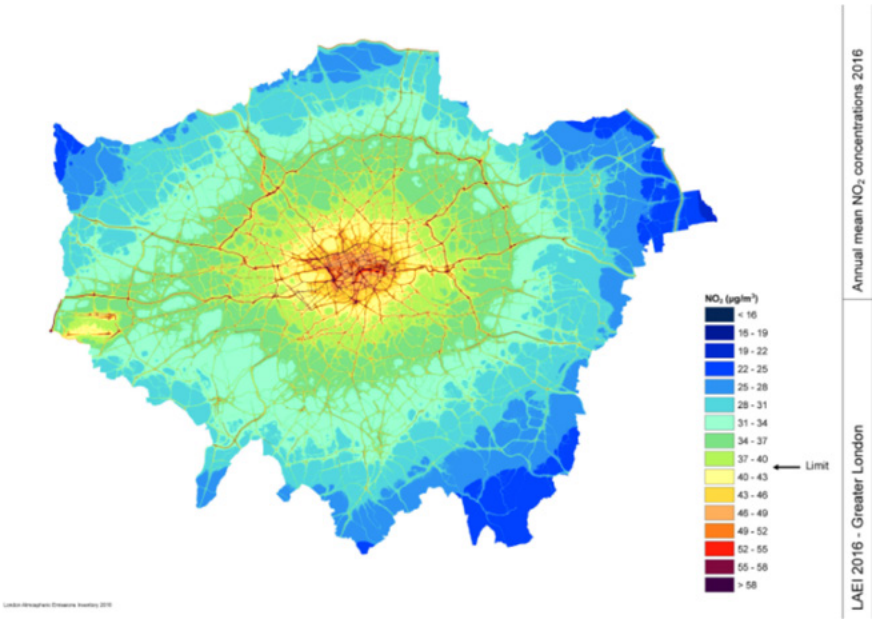


Figure 7: NO_2 annual mean modelled concentrations (LAEI, 2016)

27 https://www.kcl.ac.uk/lsm/research/divisions/aes/research/ERG/research-projects/HIAinLondonKingsReport14072015final.pdf

London PM_{10}

Figure 8 shows the PM_{10} annual mean concentrations throughout London using modelled data based upon 2016 air quality monitoring data. Across both central and outer London kerbside locations along certain busy roads, such as the A12, there is a breach of the PM_{10} annual mean NAQO. Urban background locations across London meet the PM_{10} annual mean NAQO.

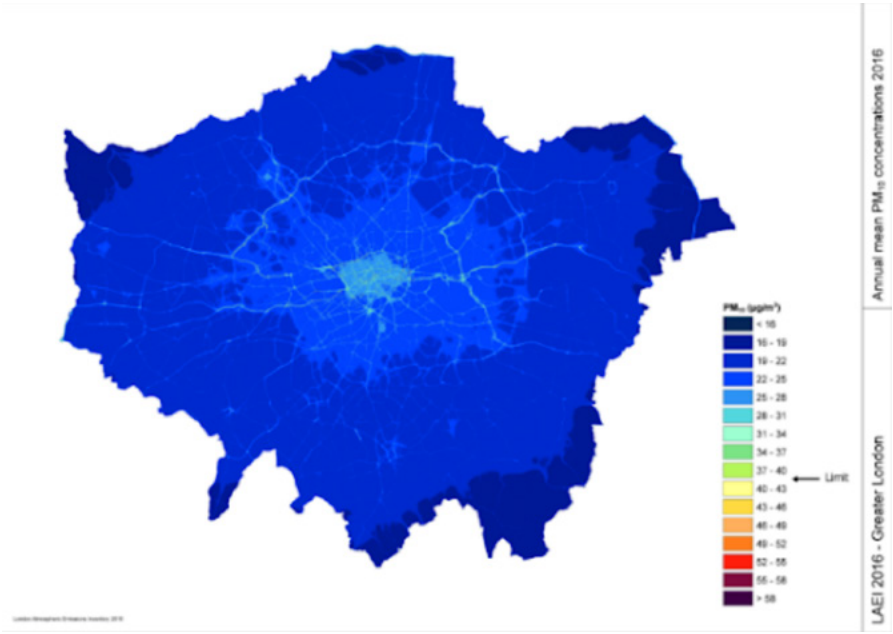


Figure 8: Annual mean concentrations PM_{10} (LAEI, 2016)

London $PM_{2.5}$

The $PM_{2.5}$ annual mean NAQO is consistently met across London as presented in Figure 9 which shows modelled $PM_{2.5}$ annual mean concentrations.

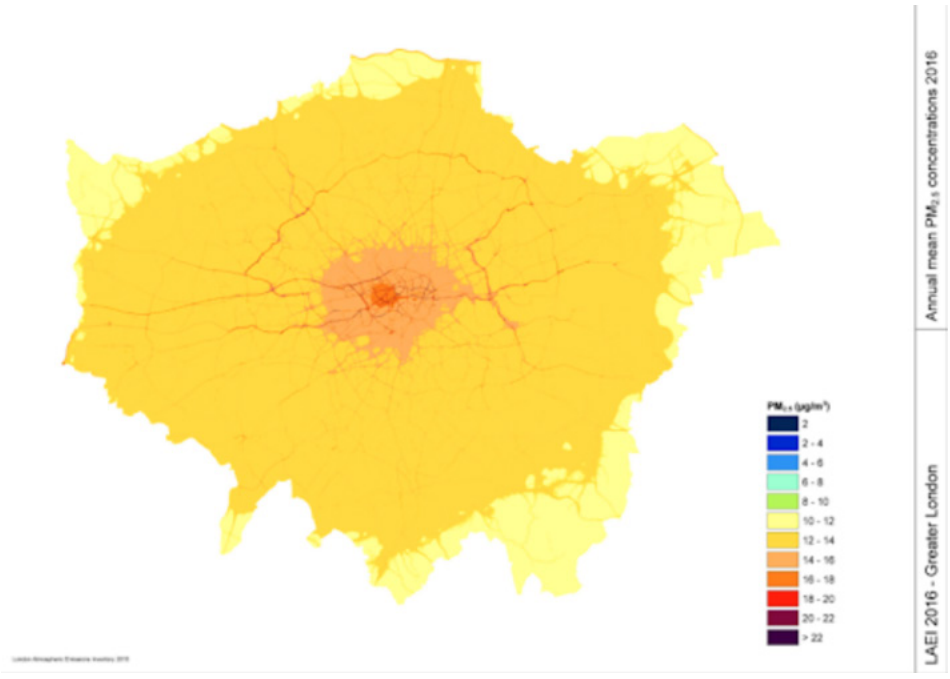


Figure 9: Annual mean $PM_{2.5}$ concentrations (LAEI, 2016)

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AIR QUALITY IN LB HACKNEY: A GUIDE FOR PUBLIC HEALTH PROFESSIONALS

Greater London Authority
February 2022

Published by
Greater London Authority
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PURPOSE OF THIS DOCUMENT

Public health professionals in local authorities have a critical role to play in driving systemic progress on air pollution. There is now an urgent need for ambitious local action to protect both human and planetary health. In the context of the pandemic and the escalating climate emergency, it is crucial that London's recovery is socially just and green. This will help to tackle these threats and prevent thousands of premature deaths caused by air pollution.

We published our last borough-specific guidance documents for local authority public health professionals in 2012. It is fair to say that a lot has changed since then.

Air pollution is a major cause of premature death and disease; and is the largest environmental risk to public health in the UK. The Greater London Authority (GLA) estimated that in 2019 there were between 3,600 and 4,100 premature deaths attributable to air pollution[1]. Both short and long-term exposure to air pollution can lead to a wide range of harmful effects which come about at every stage of life, from a foetus' first weeks in the womb all the way through to old age. The main pollutants of concern within London are nitrogen dioxide (NO_2) and particulate matter (PM). Currently, there is no clear evidence of a safe level of exposure below which there is no risk of adverse health effects. Therefore, reductions in concentrations of NO_2 and PM below air quality standards is likely to bring additional health benefits.

Air pollution affects everyone who lives and works in London. However, some – especially, children, the elderly, and people with pre-existing health conditions – are most vulnerable. People on low incomes or from ethnic minorities are also more affected by poor air quality, partly because they often live in the more polluted areas of London.

Children in London are almost four times more likely than children elsewhere in England to attend a school in a highly polluted area. In December 2020, a landmark ruling by a London Coroner concluded that Ella Adoo-Kissi-Debrah died, aged nine in 2013, from a combination of acute respiratory failure, severe asthma and air pollution exposure. It is the first time in the UK that air pollution has been listed as a medical cause on a death certificate. The Coroner's Prevention of Future Deaths report also highlighted a lack of public and professional awareness about the risks of air pollution.

Considering this it is more vital than ever for borough public health teams to work with other relevant local authority teams on air quality as air pollution does not respect borders. We recommend Joint Strategic Needs Assessments are regularly updated to include the latest information shown in this document. They should also take account of the recommendations set out in the Coroner's Prevention of Future Deaths report. Collaborative action is needed across sectors and systems to reduce air pollution, risks

[1] http://erg.ic.ac.uk/research/home/resources/ERG_ImperialCollegeLondon_HIA_AQ_LDN_11012021.pdf

and health inequalities; and to ensure air pollution is considered in every relevant policy at the local level. We must tackle different pollutants together and maximise societal gains. There are a wide range of co-benefits to improving air quality. This is not just in terms of improving health and reducing health inequalities; it will also help boost the economy, environment and climate change adaptation and mitigation.

In 2012, we provided local authorities with borough-specific guidance documents to support public health professionals who may not have previously worked in air quality. Our aim was to provide all the information needed to quickly get to grips with the issue of air quality. This updated document reflects the latest scientific evidence on both the impacts of, and solutions to, air pollution. This will enable effective local responses through setting out knowledge, recommendations, or approaches for action. It has been tailored to support and enhance collaboration and public health leadership to address air pollution. It presents the latest air quality and health data and analysis for London's 32 boroughs and the City of London in 33 bespoke reports.

We hope you will find this report useful for:

- assessing and framing air pollution risks in a health and environmental context and ensuring air pollution is prioritised appropriately
- extracting data and evidence that you can use in your Joint Strategic Needs Assessment on air quality, Health and Wellbeing Strategy and Air Quality Action Plan, including raising awareness of the health and economic costs of air pollution
- discussions with local authority colleagues around how to tackle the health impacts of air quality ensuring a joined-up approach at local and at system level, including in the context of action on climate change
- raising awareness of the contribution that action on air quality has to a range of public health outcome measures
- reaching out to colleagues in healthcare organisations, such as doctors, nurses and pharmacists around opportunities to strengthen their education, training and awareness in relation to air quality
- spreading best practice to GPs and sensitive receptors

Authors

This document was prepared by the Greater London Authority in partnership with the UK Health Security Agency (UKHSA). It includes input from the London Association of Directors of Public Health, London Councils, and public health specialists from the London boroughs of Croydon and Lewisham. It also includes input from environmental specialists in the London boroughs of Merton, Richmond upon Thames, Wandsworth, Kingston and Sutton.

To find out more, please contact: airquality@london.gov.uk

Contents

1 INTRODUCTION

1.1 Air pollution in London: Facts and figures

- In London alone, air pollution leads to thousands of premature deaths and costs the city's economy an estimated £3.7bn every year[2].
- NO_2 and $PM_{2.5}$, the two pollutants of greatest concern in London, are linked to a variety of adverse health impacts.
- Air pollution affects everyone who lives, works, or visits London but it disproportionally affects the poorest and most vulnerable communities, including children.
- In 2019, in areas where the least affluent Londoners live, the annual average concentration of NO_2 was 3.8 µg/m^3 more than the most affluent areas. That is 13 per cent higher. For $PM_{2.5}$, the most deprived areas had an annual average concentration 0.7 µg/m^3, six per cent higher than the least deprived areas.
- There is currently no safe level for $PM_{2.5}$ or NO_2. In recognition of this, the World Health Organisation (WHO) recently lowered its guideline limits for $PM_{2.5}$ to 5 µg/m^3 and NO_2 to 10 µg/m^3. The aim is to achieve the lowest concentrations possible[3].
- There have been improvements in air quality across London in recent years, especially for NO_2. In 2019, 84 per cent of major roads in London met the legal limit for NO_2[4], compared to 46 per cent in 2016 and just 37 per cent in 2013. Despite the dramatic progress to date, air pollution remains the biggest environmental risk to health.
- London has already taken bold action with the introduction of the central London Ultra Low Emission Zone (ULEZ) in 2018. This has reduced concentrations of NO_2 at roadside sites in the central zone by 44 per cent. The ULEZ was further expanded in 2021.
- Since 1 March 2021, most heavy vehicles have had to meet Euro VI emission standards of the London-wide Low Emission Zone (LEZ). This includes lorries, buses, and coaches. These standards are the same as the ULEZ, so there is only one charge for heavy vehicles in London.
- The ULEZ expansion will reduce road transport emissions of nitrogen oxides (NO_x) by 30 per cent. This will mean an expected 92 per cent of roads in London would comply with legal limits for NO_2 by the end of 2021. Combined with other measures, this puts us on track for legal compliance by 2025 at the latest. Reducing NO_2 or PM concentrations below air quality standards is likely to bring additional health benefits.
- More action is needed locally and nationally as most areas of London are exceeding WHO guideline limits for $PM_{2.5}$.

[2] https://www.london.gov.uk/sites/default/files/asthma_kings_report_april_2019_final.pdf
[3] https://www.who.int/publications/i/item/9789240034228
[4] https://data.london.gov.uk/dataset/london-atmospheric-emissions-inventory--laei--2019

1.2 The case for tackling London's air pollution crisis

There are a wide range of co-benefits to improving air quality. This is not just in terms of improving health and reducing health inequalities. It is also good for the economy, environment, and climate change adaptation and mitigation.

Air pollution affects everyone who lives and works in London; and London has some of the poorest air quality in England. The Mayor's vision is for London to have the best air quality of any major world city. His ambition is to go beyond the legal requirements to protect human health and minimise inequalities. The pandemic has highlighted stark health inequalities across the city. A report by Imperial College London offered a comprehensive overview of the most credible evidence for the links between air pollution and COVID-19. It found that there are a small number of studies supporting a relationship between long-term exposure to air pollution and higher risk of Covid-19 or its adverse consequences[5]. The report also highlighted air pollution's role in increasing vulnerability to, and severity of, a range of acute lower and upper respiratory infections.

1.3 Green Recovery from COVID-19

London is vulnerable to many of the impacts of the climate crisis, including worsening flooding and heatwaves. That is why the Mayor has been clear that London's recovery from the COVID-19 pandemic must be a green one.

The city's recovery is led by the London Recovery Board, chaired jointly by the Mayor and Chair of London Councils. It brings together leaders from across London's government, business and civil society, the health and education sectors, trade unions and the police. The aim is to oversee the long-term recovery effort. The board, which includes the NHS, has committed to taking a missions-based approach for both economic and social recovery.

One of the nine missions, the Green New Deal Mission, aims to tackle the climate and ecological emergencies and improve air quality. It will do this by doubling the size of London's green economy by 2030 to accelerate job creation for all. The Green New Deal Mission focuses on three key themes:

1) Decarbonising and transforming the built environment;
2) Greening London's transport and public realm; and
3) Mobilising new finance and support green jobs, skills and lifestyles.

Theme two has the potential to improve air quality. Project areas focus on supporting modal shift, electrifying London's vehicle fleet and infrastructure and developing zero emission zones. Prioritising sustainability, climate mitigation, and resilience is also a cross-cutting principle underpinning work across all the recovery missions.

[5] https://www.imperial.ac.uk/media/imperial-college/medicine/sph/environmental-research-group/ReportfinalAPCOVID19_v10.pdf

The first national lockdown in the pandemic (from March to June 2020) led to behavioural changes by Londoners which temporarily helped improve air quality. These included a reduction in personal vehicle use, road traffic, and an increase in active travel whilst socially distancing. Cleaner air and reduced traffic noise were widely noted and valued during this period. However, levels of road traffic and air pollution have been increasing since then. We now need coordinated action to ensure that these gains are not lost.

2 AIR POLLUTION AND ITS HEALTH IMPACTS

2.1 What is air pollution?

Air pollution is the largest environmental risk to public health in the UK[6]. Both indoor and outdoor air pollution can harm health. An air pollutant is anything in the air that could harm people's health, including small particles, liquid droplets and gases. Air pollutants are emitted from a range of man-made and natural sources; and can be classified as primary or secondary. Primary pollutants are emitted directly from a source whilst secondary pollutants form when other pollutants (primary pollutants) react in the atmosphere.

2.2 Main sources of air pollution in London

Most of the air pollution in London is produced by traffic, heating, and burning of solid fuels. Over 40% per cent of the NO_2 in London comes from road transport (LAEI, 2019). This is why the highest concentrations of NO_2 are recorded at busy roadside locations.

Around a third of the $PM_{2.5}$ emitted in London comes from road transport. A large proportion (40%) also comes from construction, wood burning, and commercial cooking (LAEI, 2019). Alongside emissions from local and regional sources, levels of PM are also influenced by emissions from mainland Europe and further afield. The sources of larger PM_{10} particles are broadly similar, and road transport accounts for around a quarter of PM_{10} in London. The 2019 London Atmospheric Emissions Inventory (LAEI) was published in December 2021 and provides an update to the previous LAEI2016 and a new baseline for 2019. Data from the LAEI is publicly available on the London Data Store and includes concentration maps, population exposure data and emissions by pollutant and source split by London Zone and by borough. Officers are encouraged to review the 2019 inventory and specific data sets for their boroughs.

2.3 Main pollutant types of concern in London

The UK Air Quality Standards Regulations (2010) sets standards for a variety of pollutants considered harmful to human health and the environment. These are detailed in Appendix 1. The pollutants of most concern in London are NO_2, $PM_{2.5}$ and ozone (O_3). NO_2 is a toxic gas produced during combustion processes, such as in the engine of a car. Some $PM_{2.5}$ occurs naturally, such as dust and sea salt, and some is man-made, such as particulates from vehicle exhausts and burning solid fuels. O_3 is a secondary man-made pollutant formed when air pollution from internal combustion engines (NOx) and power plants (Volatile Organic Compounds (VOCs)) combines chemically with oxygen. PM (see figure 1) and the gases NO_2 and O_3 are particularly damaging pollutants for human health[7]. $PM_{2.5}$ is the air pollutant thought to have the greatest impact on human health. There is no recognised safe level for health[2].

[6] https://www.gov.uk/government/publications/air-pollution-applying-all-our-health/air-pollution-applying-all-our-health

[7] https://www.blf.org.uk/support-for-you/air-pollution/what-is-it

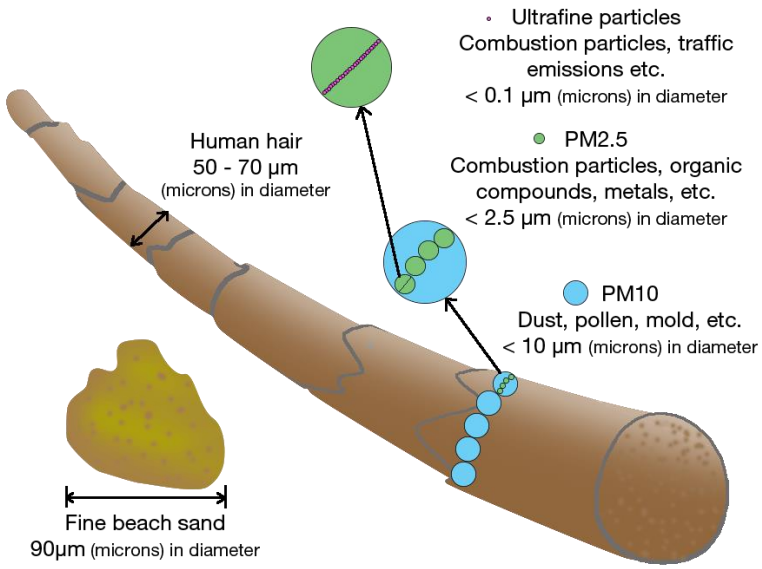

Figure 1 Types of particulate matter (UFP, $PM_{2.5}$, PM_{10}). Of these, UFP and $PM_{2.5}$ are the most harmful types for health. Image source VFA

2.4 Health effects of air pollution and associated health inequalities

The health effects of air pollution are complex, and range in severity. Air pollution can harm health at every stage of life from the first weeks in the womb all the way through to old age (figure 2).

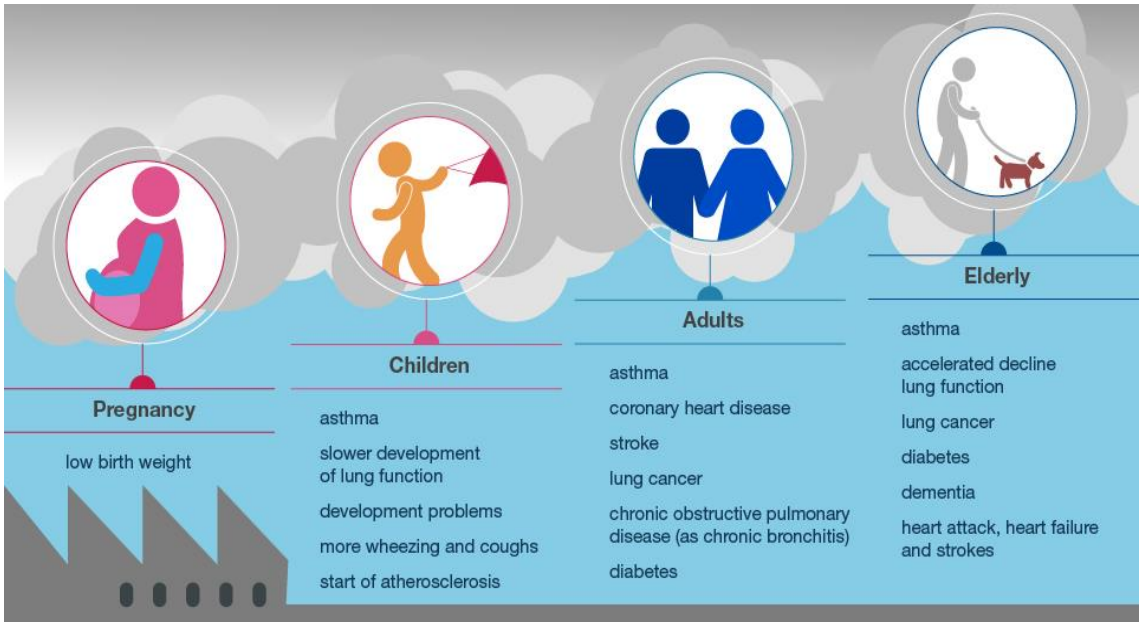

Figure 2 Impact of Air Pollution on Health throughout a lifetime. Taken from PHE Health Matters 2018

In some cases, the damage can be gradual and may not become apparent for many years. However, it can also have short-term impacts which may exacerbate symptoms, increase hospital

admissions and even death[8] (figure 3). Long-term exposure (over years or lifetime) reduces the number of years we spend in good health (healthy life expectancy). There is no level of exposure which doesn't impact on health. As such, reducing NO_2 or PM concentrations below air quality standards is likely to bring additional health benefits. This is reflected in the recently updated WHO air quality guidelines, which are significantly tighter than their previous guidelines[9].

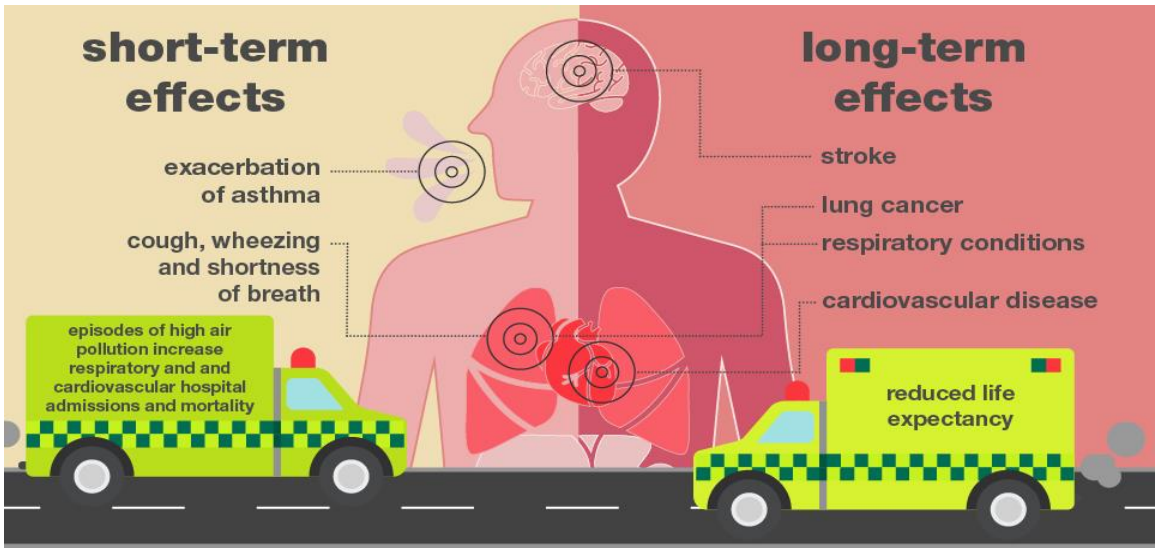

Figure 3 Health effects of air pollution, taken from PHE Health Matters, 2018.

Table 1 below summarises some of the main health impacts of NO_2, $PM_{2.5}$ and PM_{10}.

Table 1 Overview of health impacts for key pollutants of concern.

Pollutant	Key health impacts
NO_2	Effects on lung development (lung function growth), respiratory infections in early childhood and effects on lung function in adulthood.
$PM_{2.5}$[10]	Based on current evidence, $PM_{2.5}$ is thought to be the air pollutant which has the greatest impact on human health. Both short and long-term exposure to $PM_{2.5}$ increases mortality risk from lung and heart diseases and stroke as well as increasing hospital admissions.
PM_{10}[11]	Like $PM_{2.5}$ (which is a subcomponent of PM_{10}), PM_{10} harms the respiratory and cardiovascular systems, and increases the chance of premature death.

[8] Health matters: air pollution - GOV.UK (www.gov.uk)
[9] WHO Global Air Quality Guidelines (2021) https://www.who.int/news-room/q-a-detail/who-global-air-quality-guidelines
[10] A mixture of particles and/or liquid droplets in the air that have a diameter less than 2.5 micrometres across (one 400th of a millimetre).
[11] A mixture of particles and/or liquid droplets in the air that have a diameter less than 10 micrometres across.

When air pollutants enter the body, they can affect various organs and systems[12]. This includes:

- The eyes, nose and throat
- The lungs and respiratory system, including worsening asthma and chronic obstructive pulmonary disease and as a cause of lung cancer
- The heart – heart and blood vessel diseases, including strokes and hardening of the arteries (atherosclerosis), are some of the main health effects of air pollution.

There are several methods for measuring the impact of air pollution upon health. The Committee on the Medical Effects of Air Pollution (COMEAP) has released a comprehensive document[13] collating its recommendations for quantifying air pollutants' health impacts.

Long-term exposure to air pollution reduces life expectancy by increasing the incidence of lung, heart and circulatory conditions[14]. Long-term exposure to air pollution in early life can have a lasting effect on lung function, including suppressing children's lung function growth[15]. Maximising development of lung function in childhood is important as low lung function leads to less reserve if lung disease develops. This is associated with higher health risks if lung disease develops later in life.

Asthma, a long-term inflammatory condition of the conducting airways of the lungs, leads to coughing, wheezing, chest tightness and shortness of breath. Asthma symptoms in those who have the condition can be exacerbated by various stressors. These include respiratory viral infection, allergen exposure, and episodes of elevated air pollution[16].

There is increasing evidence of air pollution having a potential role in causing asthma, especially in people who live near busy roads[17]. In addition, short-term peaks in pollution levels are a trigger that can make asthma symptoms worse, increasing the risk of exacerbations[18]. This is also true for chronic obstructive pulmonary disease (COPD)[19]. Quality and Outcomes Framework data from GP

[12] https://www.gov.uk/government/publications/health-matters-air-pollution/health-matters-air-pollution

[13] https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/927754/Summary_of_COMEAP_recommendations_for_quantification.pdf

[14] Jos Lelieveld, Andrea Pozzer, Ulrich Pöschl, Mohammed Fnais, Andy Haines, Thomas Münzel, Loss of life expectancy from air pollution compared to other risk factors: a worldwide perspective, *Cardiovascular Research*, Volume 116, Issue 11, 1 September 2020, Pages 1910–1917,

[15] Schultz ES, Litonjua AA, Melén E. Effects of long-term exposure to traffic-related air pollution on lung function in children. Current allergy and asthma reports. 2017 Jun;17(6):1-3.

[16] https://www.nhlbi.nih.gov/health-topics/asthma

[17] https://www.gov.uk/government/publications/health-matters-air-pollution/health-matters-air-pollution

[18] Orellano P, Quaranta N, Reynoso J, Balbi B, Vasquez J. Effect of outdoor air pollution on asthma exacerbations in children and adults: systematic review and multilevel meta-analysis. PloS one. 2017 Mar 20;12(3):e0174050.

[19] Song Q, Christiani DC, Ren J. The global contribution of outdoor air pollution to the incidence, prevalence, mortality and hospital admission for chronic obstructive pulmonary disease: a systematic review and meta-analysis. International journal of environmental research and public health. 2014 Nov;11(11):11822-32.

registers shows approximately 508,000 people with asthma and 117,000 people with COPD live in London (2019-20 data)[20].

Emerging evidence suggests air pollution may affect the brain and is possibly linked to dementia and cognitive decline[21] and mental health impacts[22]. There is also evidence associating air pollution with impacts in pregnancy and early childhood, such as low birth weight[23].

As shown in figure 4, some groups are particularly susceptible to the harms of air pollution. These include older people, children, pregnant women and those with existing cardiovascular or lung disease[24]. People who live / work in highly polluted areas, near busy roads, or who spend long periods in traffic, are also at increased risk. This is because congestion is strongly associated with air pollution, and car occupants are typically exposed to more air pollution than cyclists or pedestrians[25].

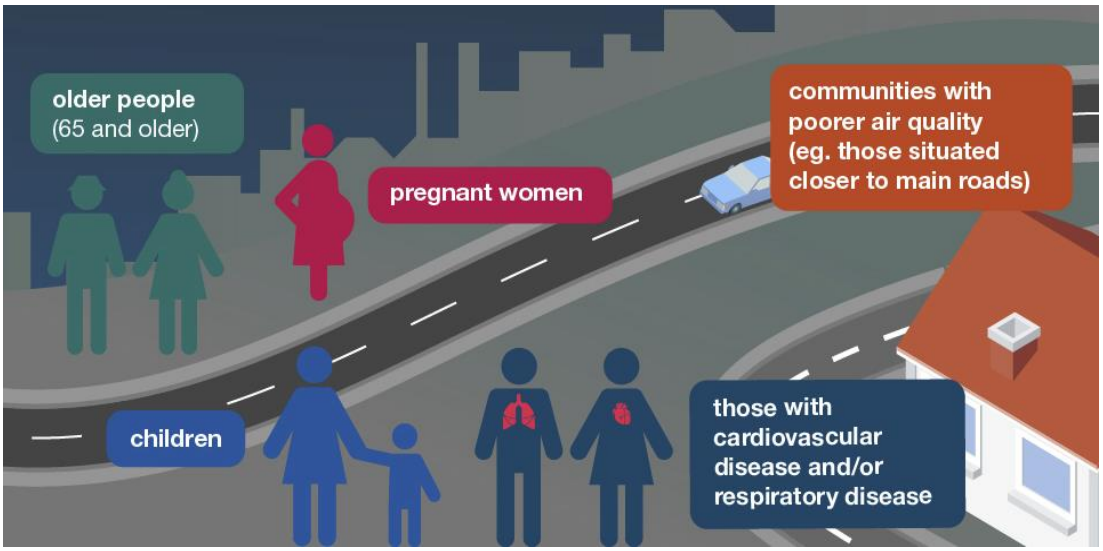

Figure 4 Air pollution affects everyone but there are inequalities in exposure and the greatest impact on the most vulnerable. Taken from PHE Health Matters 2018

20
https://app.powerbi.com/view?r=eyJrIjoiMDZiMmI2MzEtMWVjZC00YTVlLWI5NjEtMTNkODM3M2M0NDk3IiwidCI6IjUwZjYwNzFmLWJiZmUtNDAxYS04ODAzLTY3Mzc0OGU2MjllMiIsImMiOjh9

[21] Power MC, Adar SD, Yanosky JD, Weuve J. Exposure to air pollution as a potential contributor to cognitive function, cognitive decline, brain imaging, and dementia: a systematic review of epidemiologic research. Neurotoxicology. 2016 Sep 1;56:235-53.

[22] Braithwaite I, Zhang S, Kirkbride JB, Osborn DP, Hayes JF. Air pollution (particulate matter) exposure and associations with depression, anxiety, bipolar, psychosis and suicide risk: a systematic review and meta-analysis. Environmental health perspectives. 2019 Dec 18;127(12):126002.

[23] Stieb DM, Chen L, Eshoul M, Judek S. Ambient air pollution, birth weight and preterm birth: a systematic review and meta-analysis. Environmental research. 2012 Aug 1;117:100-11.

[24] https://www.gov.uk/government/publications/health-matters-air-pollution/health-matters-air-pollution

[25] http://content.tfl.gov.uk/technical-note-20-what-are-the-main-health-impacts.pdf

Ethnic minorities and deprived communities are hardest hit by air pollution in London[26]. In 2019, areas where the most deprived Londoners lived, had a higher annual average concentration of NO_2 by 3.8 µg/m^3 than the least deprived areas. For $PM_{2.5}$, areas where the most deprived Londoners live had an annual average concentration 0.7 µg/m^3 higher than the least deprived areas[27]. The Mayor is now taking measures to tackle London's air pollution. By 2030, these should reduce the gap in exposure to NO_2 between the least and most deprived by 70 per cent[28].

2.5 Indoor air pollution

Polluted air is a problem not only outside our homes and workplaces but inside them too. It is not the primary focus of this report. However, the WHO estimates that close to four million people worldwide die prematurely each year due to household (indoor) air pollution (2018 data[29]). This is a serious problem in countries where solid fuel is the main way to cook and heat homes, and where ventilation is poor.

In the UK, indoor air quality is affected by domestic gas combustion from cooking and heating. Other sources of indoor air pollution include wood-burning stoves and open fires, cleaning agents, VOCs, tobacco smoke, mould, condensation and asbestos. The National Institute for Health and Care Excellence (NICE) has recently provided guidance on improving indoor air quality[30].

In recent years, wood burner use has increased. This means its relative contribution to local $PM_{2.5}$ is increasing even more rapidly as contributions of other sources like traffic are gradually reduced. A European Environment Bureau report showed that even Euro-certified 'Eco-stoves' produce 750 times more $PM_{2.5}$ per gigajoule of energy than a modern HGV[31]. A recent study found that wood burning accounts for between 23 and 31 per cent of urban-derived $PM_{2.5}$ in London[32].

2.6 Public Health Outcomes Framework

The Public Health Outcomes Framework (PHOF) examines indicators that help to understand trends in public health. It also enables local authorities to benchmark and compare their own outcomes with other local authorities. For example, one indicator looks at the health impacts of air pollution: the fraction (%) of mortality attributable to long-term exposure to $PM_{2.5}$. This is calculated using modelled $PM_{2.5}$ levels. A graph showing breakdown by borough of the percentage of mortality attributable to long-term $PM_{2.5}$ exposure across London in 2019 is in chapter 5. The underlying data are in appendix 2 and the Public Health Outcomes framework in appendix 3.

[26] http://www.instituteofhealthequity.org/resources-reports/fair-society-healthy-lives-the-marmot-review
[27] https://www.london.gov.uk/sites/default/files/air_pollution_and_inequalities_in_london_2019_update_0.pdf
[28] https://www.london.gov.uk/sites/default/files/air_quality_in_london_2016-2020_october2020final.pdf
[29] https://www.who.int/news-room/fact-sheets/detail/household-air-pollution-and-health
[30] https://www.nice.org.uk/guidance/ng149/resources/visual-summary-pdf-7022755693
[31] https://eeb.org/library/where-theres-fire-theres-smoke-emissions-from-domestic-heating-with-wood/
[32] https://uk-air.defra.gov.uk/assets/documents/reports/cat05/1801301017_KCL_WoodBurningReport_2017_FINAL.pdf

2.7 The Cost of Air Pollution

The 2019 Clean Air Strategy[33] estimated air pollution in England could cost £5.3bn a year in terms of health and social care by 2035. This is if no action is taken and includes both $PM_{2.5}$ and NO_2. This is a cumulative cost for health conditions strongly associated with air pollution: coronary heart disease; stroke; lung cancer; and childhood asthma. When health issues with weaker evidence of association are also added, the costs could reach £18.6bn by 2035. These include chronic obstructive pulmonary disease; diabetes; low birth weight; and dementia. Air pollution can impact people of working age, which can also have economic effects, for instance, if they must take days off work. The Confederation of British Industry (CBI) estimates that improving our air quality could benefit the UK's economy by £1.6bn each year. This would be by preventing premature deaths and providing three million additional working days. It also found that cleaner air in London would benefit the city's local economy by £500m, almost one third of the national yearly benefit[34].

[33] https://www.gov.uk/government/publications/clean-air-strategy-2019
[34] https://www.cbi.org.uk/media/5539/2020-09-cbi-economics-caf-report.pdf

3 POLICY AND LEGAL FRAMEWORKS FOR IMPROVING AIR QUALITY

3.1 World Health Organisation (WHO)

Most air quality legislation in Europe and the UK is derived from health-based evidence provided by the WHO. The WHO has published various guidelines for both global air quality and European air quality based on the latest worldwide research. In September 2021, the WHO announced changes to its guideline air quality limits (previously published in 2005). The annual $PM_{2.5}$ limit has reduced from 10 µg/m^3 to 5 µg/m^3 and annual NO_2 from 40 µg/m^3 to 10 µg/m^3.

The Mayor's current ambition is to meet the 10 µg/m^3 threshold for $PM_{2.5}$ by 2030. Many of the Mayor's strategies and policies (London Plan, LLAQM Guidance, London Environment Strategy) refer to the WHO limits. This will continue to mean the WHO limits at the time of writing, which was 10 µg/m^3. Meanwhile, the Mayor continues to work for a zero-pollution city. This includes efforts to achieve the health-based guidelines that WHO originally set for 2030 mindful of the impacts on Londoners. He will also continue to lobby for a 10 µg/m^3 threshold for $PM_{2.5}$ by 2030.

3.2 EU Directive

The European Union has issued an air quality Directive (2008/50/EC – the "Air Quality Directive").[35] The directive sets standards for a range of pollutants considered harmful to human health and the environment.

The UK is no longer a European Union member. However, the Air Quality Directive is now a part of UK domestic legislation through the Air Quality Standards Regulation[36].

The directive standards include limit values, which are legally binding and must not be exceeded. These limit values include a concentration value for the pollutant, an averaging period over which it is measured and when these should be achieved. In some case, it also includes an allowable number of exceedances of the value per year. The directive also includes target values, which are set out in the same manner as limit values. However, these should be reached where possible by taking cost-effective measures.

3.3 UK Air Quality Policy

The Air Quality Standards Regulations 2010

The Air Quality Standards Regulations 2010 include criteria for determining how to assess achievement of the limit values. This includes consideration of locations and length of exposure in relation to the averaging period of the limit values. In addition, the regulations state sampling points must be sited where the highest concentrations occur, and people exposed for longer

[35] http://ec.europa.eu/environment/air/quality/legislation/existing_leg.htm
[36] www.legislation.gov.uk/uksi/2010/1001/contents/made

periods of time. These should be significant in relation to the averaging period of any limit value (that is, 15 minutes, one hour, 24 hours etc).

The limit values for the UK Air Quality Standards and the updated WHO guideline limit values are shown below in table 2. The UK Air Quality Standards limit values for NO_2 were not met in parts of Greater London in 2019. However, the number of Londoners living in areas exceeding the UK Air Quality Standards for NO_2 fell from over 2 million in 2016 to 119,000 in 2019, a reduction of 94 per cent.

In 2016, the whole of London exceeded the previous WHO guideline limit for $PM_{2.5}$ of 10 µg/m^3. The latest data from LAEI2019 shows there are now almost 1.2 million Londoners living in areas below the 10 µg/m^3 limit and there has been a 19 per cent reduction in $PM_{2.5}$ across the whole of the city since 2016. However, with the WHO guideline limit for $PM_{2.5}$ reducing to 5 µg/m^3, there is still work to be done to ensure Londoners can breathe clean air.

Table 2 Air Quality Standards Regulations and updated WHO guideline values

Pollutant	UK Air Quality Standards (EU Limit Value)	WHO guideline value (2021 update)
NO_2	40 µg/m^3 annual mean 200 µg/m^3 1-hour mean	10 µg/m^3 annual mean 15 µg/m^3 1-hour mean[37]
$PM_{2.5}$[38]	25 µg/m^3 annual mean [39]	5 µg/m^3 annual mean 15 µg/m^3 24-hour mean
PM_{10}[40]	40 µg/m^3 annual mean 50 µg/m^3 24-hour mean	15 µg/m^3 annual mean 45 µg/m^3 24-hour mean

Clean Air Strategy, 2019

The Government's Clean Air Strategy[41] provides a policy framework for air quality management and assessment in the UK. It sets out these proposals in detail and indicates how devolved administrations intend to make their share of emissions reductions. It identifies air quality

[37] 200 µg/m^3 hourly average is not to be exceeded more than 18 times a year
[38] A mixture of particles and/or liquid droplets in the air that have a diameter less than 2.5 micrometres across (one 400th of a millimetre).
[39] In 2020, the annual mean limit value was reduced to 20 µg/m^3.
[40] A mixture of particles and/or liquid droplets in the air that have a diameter less than 10 micrometres across.
[41] https://www.gov.uk/government/publications/clean-air-strategy-2019

standards and objectives for key air pollutants which are designed to protect health and the environment. The Government has since brought forward plans to end the sale of new conventional petrol and diesel cars and vans to 2030[42]. This is ten years earlier than previously proposed.

Environment Act, 2021

The Act introduces a duty on the government to bring forward at least two air quality targets by October 2022 for consultation. This will be set in secondary legislation. The first will aim to reduce the annual average level of $PM_{2.5}$ in ambient air. The second will be a long-term target (set a minimum of 15 years in the future). The Environment Act did not include legally binding $PM_{2.5}$ targets or provide cities with the powers and funding needed to meet them.

3.4 Local authority responsibilities

Under the Environment Act 1995 [43] local authorities have a statutory responsibility in Local Air Quality Management (LAQM). This is to make sure that the national air quality objectives (appendix 1) will be achieved by the relevant deadlines. If a local authority finds any places where the objectives will not be achieved, it must declare an Air Quality Management Area (AQMA) there.

Much of London has been designated AQMAs. The DEFRA website has an interactive map of all AQMAs in the country. Local authorities which have wholly or partly designated their boroughs as AQMAs must under LAQM produce an Air Quality Action Plan (AQAP)[44]. AQAPs set out how local authorities, working with other agencies, will use their powers to meet the air quality objectives.

The Mayor's London Local Air Quality Management (LLAQM) framework[45] is the statutory process for London's local authorities to review and improve local air quality. In March 2019 boroughs were consulted on a range of updates and improvements to the LLAQM. After a successful consultation, the new LLAQM was published in October 2019. The updates were done to:

- ensure boroughs are taking ambitious action, which is properly coordinated at the regional level, and which supports Mayoral objectives. This includes those set out in the London Environment Strategy.

- ensure that London boroughs continue to work towards achievement of WHO guideline values for pollutants even when legal limits are met.

[42] https://www.gov.uk/government/news/government-takes-historic-step-towards-net-zero-with-end-of-sale-of-new-petrol-and-diesel-cars-by-2030

[43] www.environment-agency.gov.uk/netregs/legislation/.../107183.aspx

[44] http://uk-air.defra.gov.uk/reports/cat09/1107211126_Mapping_Action_Plan_Guidance_Final__Report_April_2011.pdf

[45] https://www.london.gov.uk/what-we-do/environment/pollution-and-air-quality/working-london-boroughs

- update information in the guidance documents to reflect new research, policies, and priorities.

There are 187 Air Quality Focus Areas in London. These are locations that not only exceed the national air quality objective for NO_2 but also have high levels of footfall. These areas were identified in the LAEI 2010 as requiring interventions to help reduce emissions and personal exposure. This is not an exhaustive list of London's hotspot locations. However, it is where the GLA believe the problem to be most acute. We have selected Air Quality Focus Areas based on the following factors:

- Baseline air quality for NO_2 and PM_{10} by 20m grid resolution
- Locations where air pollution limit values have been exceeded
- Level of human exposure
- Local geography and topography
- Local sources of air pollution
- Traffic patterns
- Future predicted air quality trend

4. AIR QUALITY MONITORING AND ASSESSMENT OF COMPLIANCE

There are several health and environmental strategies which are relevant to air quality. Details of these can be found in appendix 4.

4.1 Air Quality Monitoring in London

London's air quality is constantly monitored by high-accuracy Automatic Reference-Level monitors at over 100 different locations. Most of these are owned and paid for by London's boroughs. These sites are mainly managed through the London Air Quality Network (LAQN) delivered by the Measurement Team at Imperial College. Ricardo Energy and Environment also run several of these sites. More information on this network is available on the Air Quality England website.

There is minimal $PM_{2.5}$ monitoring within the London network. We encourage boroughs to consider increasing $PM_{2.5}$ monitoring capacity as this pollutant has the greatest impact on human health.

Analysers on Air Quality England and the LAQN are Defra-approved and calibrated and maintained in accordance with its technical guidance on air quality monitoring. You can read more here about Defra's approval method for gas analysers and particulate instruments.

The LAQN is supplemented by low cost Breathe London monitors and diffusion tubes. Breathe London's street-by-street sensor air quality monitoring system is being used to analyse harmful pollution in toxic hotspots across the city. These include near schools, hospitals, construction sites and busy roads. These data will support policymaking and help inform and engage local communities. However, it is not a replacement for the Reference-Level monitors which are vital for assessing trends and compliance with legal air quality limits. We recently launched two new ways for people, businesses and communities to join the Breathe London Network. The Breathe London Shop is intended for those who already have funding. There is also the Breathe London Community Programme through which communities can apply for 10 fully funded nodes in this round.

We are working towards consolidating these data, so they are freely available in one location on the Breathe London website.

4.2 Communicating levels of air pollution

The Daily Air Quality Index

The Daily Air Quality Index (DAQI) offers information on levels of air pollution and provides recommended actions and health advice. The index is numbered 1-10 and divided into four bands (low 1-2, moderate 4-6, high 7-8, very high 9-10). This provides detail about air pollution levels in a simple way, like the sun index or pollen index. The DAQI and its associated messaging are currently

being reviewed. This follows the Ella Adoo-Kissi-Debrah inquest and the need to include more specific messaging for different population groups[46].

Step 1: Determine whether you (or your children) are likely to be at-risk from air pollution. Adults and children with heart or lung problems are at greater risk of symptoms. Older people are more likely to suffer from heart and lung conditions than young people. It therefore makes good sense for them to be aware of current air pollution conditions. Children with asthma may notice they need to use their reliever medication more on days when air pollution levels are higher than average.

Step 2: If you may be at-risk, and are planning strenuous activity outdoors, check the air pollution forecast.

Step 3: Use the health messages corresponding to the highest forecast level of pollution as a guide.

Mayor's air quality alerts system

The Mayor's air quality alerts system communicates to Londoners on days where air pollution is elevated. It uses stakeholder organisations' networks and messages displayed in public locations (including bus countdown signs). It issues alert communications in several formats to reach as many Londoners as possible. The system uses the same criteria as the DAQI.

During periods of moderate, high and very high air pollution the Mayor's Air Quality Alert system sends warning emails to signed-up stakeholders. This includes over 3,300 school contacts. Alerts and guidance are also available via social media and the London.gov website.

When a high and very high air pollution day is forecast, air quality alerts are displayed at many public locations across London. This includes all bus stop Countdown signs, the road network and on the London Underground. These are combined forecasts - meaning they are based on a number of public forecasts: airText, Defra (Met Office) and Imperial. Furthermore, for high and very high air pollution episodes we also alert the London Resilience Forum (which includes the NHS and UK HSA). This action enables more Londoners to be reached via their networks.

Work is underway to improve the reach of the alerts especially for vulnerable groups, including understanding how alerts can work within health care settings. Local authorities can play a key role in making this happen through their local health, education and social care networks and involvement in integrated care systems. To find out more and for support on working with local NHS networks, please email airquality@london.gov.uk.

AirTEXT

airTEXT provides information on the level of pollution in an area using 'low', 'moderate' and 'high' bandings. Whenever moderate or high levels of pollution are expected, subscribers to the airTEXT

[46] Government responds to Coroner after Ella Adoo-Kissi-Debrah inquest - GOV.UK (www.gov.uk)

service receive a text message, call or voicemail. This enables the recipient to determine what steps they should take to prepare themselves for the expected level of pollution. For example, taking a different route/mode of transport to work, keeping their medication with them or not exercising outside on certain days. Currently around 10,000 people use the airTEXT service through text, Twitter or the website.

4.3 Actions already taken to clean up London's air

The Mayor is committed to cleaning up London's air and is delivering an ambitious action plan to tackle this problem. He has introduced a range of hard-hitting measures to reduce air pollution and protect public health. These include:

Incentivising the use of cleaner vehicles. Much of the improvements in air quality seen in London since 2016 can be attributed to the Central London ULEZ (figure 5). The ULEZ operates 24/7 daily, within the same area of central London as the congestion charge. In October 2021, the ULEZ expanded up to but not including, the North and South Circular Roads. Most vehicles, including cars and vans, need to meet the ULEZ emission standards, or pay a daily charge to drive in the zone.

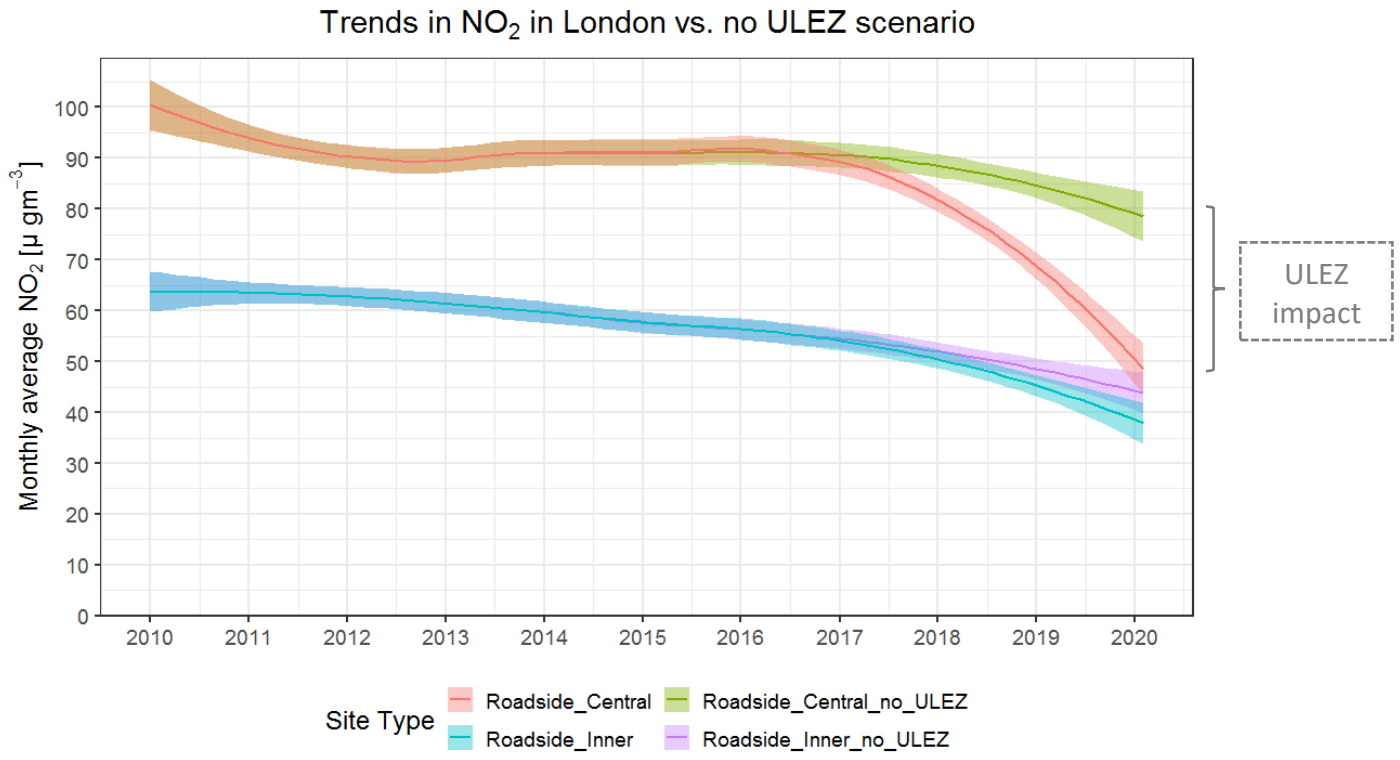

Figure 5 Trend in NO_2 in London vs no ULEZ scenario

In the first 10 months of the central London scheme (before the pandemic), the ULEZ had already delivered a range of benefits:

- Trend analysis shows in February 2020 concentrations of NO_2 at roadside sites in the central zone were 39 µg/m^3 less than in February 2017[47]. This is a fall of 44 per cent. After the first ten months of operation average compliance with ULEZ standards were 79 per cent in a 24-hour period. This was 77 per cent in congestion charging hours. This is far higher than 39 per cent in February 2017 and 61 per cent in March 2019, the month before the ULEZ was introduced.
- Analysis was carried out to determine the directly attributable impact of the ULEZ. In the first two months of 2020. NO_2 concentrations in central London were on average 29 µg/m^3 lower than they would have been otherwise. This equates to a reduction of 37 per cent.
- Preliminary estimates indicate that by the end of 2019, the ULEZ had reduced NO_x emissions from road transport in the central zone by 230 tonnes. This is a reduction of 35 per cent.
- The ULEZ is also helping to tackle the climate emergency. Preliminary estimates indicate that by the end of 2109, the ULEZ had reduced carbon dioxide (CO_2) emissions from road transport in the central zone by 12,300 tonnes. This is a reduction of six per cent.
- It's too early to measure most long-term health benefits. However, we have commissioned Imperial College London to measure changes in asthma exacerbations and hospital admissions[48].
- Compliance has steadily increased since its introduction. In May 2021, some 87 per cent of vehicles seen in the central zone on an average day met the strict ULEZ emissions standards.

The expanded ULEZ was launched on 25 October 2021. It operates up to, but not including, the North Circular Road and South Circular Road to create a single, larger zone. Nearly four million people live within the expanded ULEZ zone. Here, six in ten households do not own a car yet suffer poor air quality in part caused by polluting vehicles. The compliance rate (percentage of vehicles detected in the zone that meet the strict emissions standards) during the first month was 92 per cent[49]. This is a 53 per cent increase on the 2017 compliance levels of 39 per cent. On an average weekday, there were 47,000 fewer non-compliant vehicles in the expanded zone than the two weeks before the scheme was introduced. This is a 37 per cent reduction in non-compliant vehicles. There were also 11,000 fewer vehicles driving at all.

The ULEZ expansion will result in a 30 per cent reduction of road transport emissions of NO_x. This means that 92 per cent of roads in London were expected to comply with legal limits for NO_2 by the end of 2021. Combined with other measures, this puts us on track for legal compliance by 2025 at the latest.

Since 1 March 2021 most heavy vehicles, including lorries buses and coaches, have had to meet the Euro VI emission standards of the London-wide Low Emission Zone (LEZ). These standards are the same as the ULEZ meaning there is only one charge for heavy vehicles operating in London.

[47] In February 2017 the Mayor confirmed the introduction of the T-charge as a stepping-stone for the ULEZ and this can be seen as the start of the accelerated change in the vehicle fleet as Londoners and businesses prepared for the new schemes and buses on routes in central London began to be upgraded to become ULEZ compliant

[48] Health Impact Assessment of Air Pollution on Asthma in London | London City Hall

[49] https://www.london.gov.uk/WHAT-WE-DO/environment/environment-publications/expanded-ultra-low-emission-zone-first-month-report

Six months on from their introduction, these changes are already delivering results[50]. Ninety-five per cent of large and heavy vehicles operating in London met the standards in August 2021. This is up from 48 per cent in February 2017 when the scheme was announced.

The LEZ also has significant benefits outside of London. Independent analysis shows that vehicles passing through London's Low Emission Zone went through 95 per cent of towns and cities in England and Wales. This has brought cleaner air to a combined population of 18 million people.

The Mayor has invested over £61m in funding for scrappage schemes that helped small businesses, charities operating minibuses and low-income and disabled Londoners. These schemes have helped replace nearly 15,000 older, more polluting vehicles. Over the past two and a half years the Mayor's scrappage schemes have proved very popular. Combined, they have helped thousands of Londoners and small businesses prepare for the ULEZ and its expansion. Demand for the schemes has been consistently high throughout that time. It shows how ordinary Londoners are taking the steps they need to clean up London's filthy air well in advance. The Mayor continues to make the case to Government to fund a targeted national scrappage scheme.

Cleaning up London's bus fleet. The Mayor continued transforming London's bus fleet by phasing out pure diesel buses and committing to buy only hybrid or zero-emission double decker buses from 2018. As of 1 January 2021, all buses in Transport for London's (TfL's) 9,000-strong core bus fleet meet or exceed the cleanest Euro VI emission standards. This effectively makes the whole city a Low Emission Bus Zone and reduces bus-related NOx emissions by 90 per cent. There are currently over 600 zero emission buses in the fleet. London now has the largest zero emission bus fleet in Western Europe.

Cleaning up the taxi fleet. The Mayor is phasing out diesel taxis to help make London's taxi fleet the greenest in the world. Since January 2018, TfL policy has been for all newly registered taxis to be Zero Emission Capable (ZEC). To support this, in 2017 the Mayor provided funding for taxi delicensing, to help get rid of the oldest, most polluting diesel black cabs from London's fleet. There are currently well over 5,000 ZEC, including more than 100 fully electric, taxis in operation in London. This is from a baseline of zero in 2017.

Cleaning up private hire (minicabs). Private hire vehicles are also subject to strict emission standards. As of 1 January 2020, private hire vehicles under 18 months must be ZEC when licensed for the first time. From 1 January 2023, this will apply to all private hire vehicles licensed for the first time. With their 10-year age limit, this will help London's private hire fleet be zero emission capable by 2033 at the latest. There are now over 14,000 Zero Emission Capable private hire vehicles.

Reducing air pollution from other, non-road sources. The Mayor is also acting on non-road sources of air pollution, including construction. This includes the unique Non-Road Mobile Machinery Low Emission Zone (NRMM LEZ). This has eliminated over 16.5 tonnes of PM and 297 tonnes of NOx emissions from construction between 2016 and 2019. The project has since been

[50] https://www.london.gov.uk/sites/default/files/lez_six_month_on_report-final.pdf

expanded from the initial 13 boroughs and now covers the whole of London. It is managed by Merton.

Cleaning up the air around schools. Since 2018 the Mayor has spent more than £1m on air quality action at schools and nurseries. This includes auditing the air quality at 50 primary schools and 20 nurseries in the city's most polluted areas. It also includes funding measures to help schools and nurseries reduce local pollution. Based on the positive results of these pilot programmes this approach is now being replicated by several London boroughs.

In February 2021 the Mayor launched the London Schools Pollution Helpdesk. This aims to support schools across the city to carry out air quality audits and implement recommendations. Progress in this area is particularly urgent for schools in Air Quality Management Areas. Public health departments should be aware of the school audit programme. All schools, particularly those near main roads, should perform air quality audits.

Cleaning up air pollution hotspots in London boroughs. The Mayor's Air Quality Fund of £22m has supported a variety of local and pan-London projects to improve air quality. For example, the Hackney Low Emission Neighbourhood contributed to an estimated 16 per cent reduction in local NOx emission. Find out more about Low Emission Neighbourhoods here.

Expanding London's electric vehicle charging infrastructure. The Mayor has supported delivery of over 300 rapid charge points – from zero in 2016 – and over 3,000 standard charge points. This includes London's first rapid charging hub at Stratford International. Two further hubs are planned at Baynard House, City of London and Glass Yard, Greenwich. London now has over 600 rapid charge points and over 8,000 residential charge points, a third of the UK's total. These have been delivered thanks to leadership and effective collaboration between the public and private sectors.

Empowering Londoners to take action to reduce their exposure to pollution. Alongside a comprehensive air quality monitoring network, the Mayor operates a system of alerts on the days with the worst air pollution. This includes providing information on more than 2,500 countdown signs at bus stops. See section 4.2 for more on communicating levels of air pollution.

As well as the GLA funded Breathe London network, Sutton, Kingston, Merton and Richmond upon Thames are using the network to install their own monitors. They are installing an additional 131 air quality sensors as part of the South London Partnership's InnOvaTe Project. By the end of 2022, the network will have over 300 sensors[51].

Case study: School Streets
Between April 2020 and March 2021, over 300 School Streets have been delivered across London with funding from TfL and the boroughs. The aim is to tackle children's exposure to air pollution and improve their health.

[51] https://www.breathelondon.org/

School Streets are initiatives where roads surrounding schools are closed to motor traffic at drop-off and pick-up times. This enables children to walk or cycle to school, reducing car trips and improve air quality. School Streets also provide space for social distancing and help to reduce road danger around schools, making journeys safer and easier.

To measure their air quality benefits, 30 sensors from the Breathe London network were installed at 18 primary schools across Brent, Enfield and Lambeth. These record NO_2 levels on School Streets. It found that stopping traffic at pick-up and drop-off times reduced NO_2 levels by up to 23 per cent at these schools. On average, 81 per cent of parents and carers supported the measures at their children's school.

Case Study: Idling Action

Vehicle Idling Action is a London-wide behaviour change campaign. It is funded by the Mayor's Air Quality Fund and led by the City of London and London Borough of Camden. The campaign is helping to reduce localised air pollution caused by motorists leaving their engines running when parked. The project team works directly with 31 local authorities. It runs school workshops, engages businesses to use greener vehicles and cargo bikes, offers vehicle fleet training, and ensures idling regulations are enforced across London.

Since 2016, over 1,500 idling action events have taken place, teaching 3,860 students about air pollution and health. Their schools have also been supported to act on engine idling by delivering 77 air quality and anti-idling workshops across 31 boroughs. In addition, the project has delivered Idling Action events at 35 schools and idling hotspots to engage idling drivers. Idlers were asked to switch off their engines and informed about the impact idling has on air quality and health. In 2021, the project created a four-week billboard, radio and digital advertising campaign – Engine Off Every Stop (EOES). It ran across London to raise awareness of engine idling and its health impacts and reached an estimated nine million plus people.

Case study: StreetSpace for London

The emerging recovery from the spring 2020 COVID-19 lockdown presented a challenge for TfL. This is because public transport was required to run at much lower levels of passenger capacity to provide space for social distancing. There were concerns that car travel may be more attractive than before the pandemic. This was due to temporarily lower congestion levels and public perceptions about the risk of exposure to coronavirus on public transport. However, a potential car-based recovery was recognised to have major risks to safety, public health, economic recovery and the environment. In addition, it was contradictory to the aims of the Mayor's Transport Strategy.

In response, TfL developed the StreetSpace for London programme, in line with national government guidance to urgently reconsider how street space is used. The aim was to provide safe and appealing spaces to walk and cycle as an alternative to car use. Interventions included temporary cycle routes to extend the strategic cycle network and footway widening to make more space for people walking. This was applied in town centres and at transport hubs.

StreetSpace for London focused on rapidly rolling out cycling infrastructure, bus priority, neighbourhood improvements and lower speeds, using temporary materials and an accelerated approach. By March 2021, almost 100km of new or upgraded cycle routes were built, and 86km of bus lanes were upgraded to 24/7. In addition, 2,259 signal timing changes were made to prioritise people walking, and 88 Low Traffic Neighbourhoods were delivered.

4.4 Impact of COVID-19 on air quality in London

In March 2020 strict measures were introduced to tackle the COVID-19 pandemic in London. This had a significant impact on NO_2 levels, mainly due to less motor traffic. Once weather effects were accounted for, reductions were, in general, greater at roadside sites than urban background sites. The change in NO_2 concentrations from COVID-19 restrictions must be seen within the wider context of improvements in London's air quality in recent years. This is due to initiatives such as the ULEZ. Additionally, during lockdown O_3 and PM concentrations increased highlighting the importance of non-transport emission sources and the need for action on these also.

In 2020, hourly average NO_2 at all central London sites had already reduced by 35 per cent compared to the same period in 2017. This was before measures to address the COVID-19 outbreak were introduced. During the first lockdown there was an additional reduction of 26 per cent. This reduction was even higher at roadside sites (figure 6). NO_2 levels at monitoring sites in central London remained low in 2021 despite increases in traffic following the end of lockdowns. Just a 2.7 per cent increase was seen when comparing the first lockdown in 2020 to the same period in 2021.

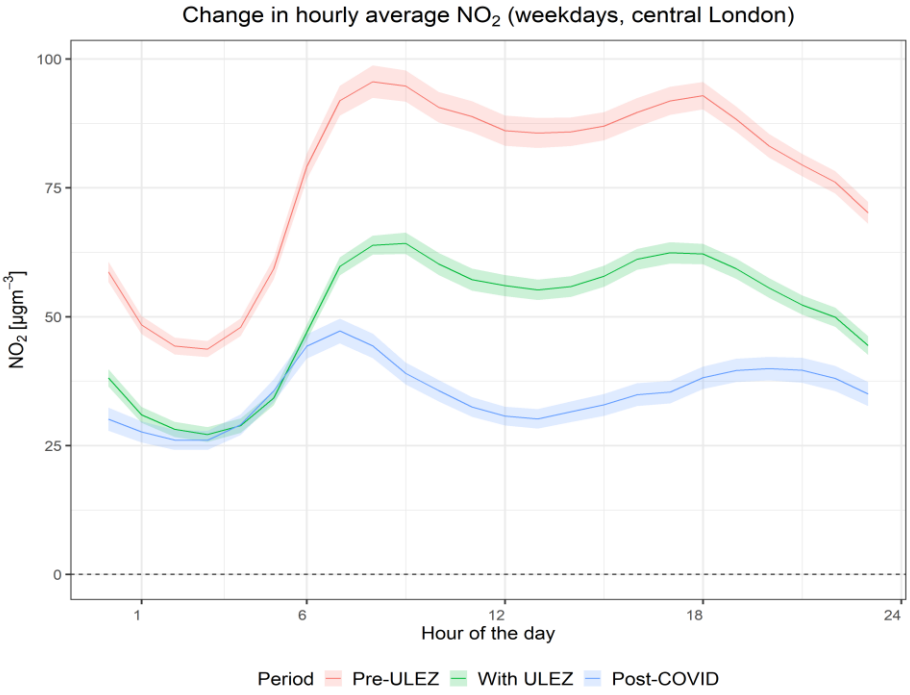

Figure 6 Changes in hourly average NO_2 (weekdays, central London)

5 AIR QUALITY AND ITS HEALTH IMPACTS IN LB HACKNEY

5.1 Location and monitoring

The London Borough (LB) of Hackney is situated in inner London. It is made up of 21 wards and has a population of 279,665 [52].

In 2006 LB Hackney designated the whole of the borough as an AQMA due to exceedances in NO_2 and PM_{10}. Air quality is monitored at one automatic monitoring site in the borough.

The annual mean limit value for NO_2 and for PM_{10} is 40 μg/m^3. Concentrations within the limit value are highlighted in green, exceedances of the limit value are highlighted in yellow, with exceedances greater than 50% of the limit value indicated in red.

More information about air pollution limit values is included in appendix 1.

5.2 Annual mean concentrations

Annual mean NO_2 concentrations measured at the automatic monitoring station have constantly decreased over the 7-year period (2014-2020) for which data have been reported (see table 3, below).

The Hackney monitoring station has previously breached the annual mean objective of 40 μg/m^3 (table 3). In 2020 the annual mean objective was met, but concentrations remain above the WHO guideline limit (10 μg/m^3). . The Hackney site is described as a roadside site; specific details can be found in the LB Hackney annual status reports.

Table 3 Annual Mean NO_2 Concentration monitoring results (μg m^{-3})

Site	2014	2015	2016	2017	2018	2019	2020
Hackney	67	60	57	57	50	47	37

The national air quality objective for PM_{10} is 40 μg/m^3 and for $PM_{2.5}$ is 25 μg/m^3. As mentioned previously, the WHO has recently updated its Air Quality guidelines following an assessment of the health effects of air pollution and thresholds for health-harmful pollution levels. The new WHO guideline value for PM_{10} is 15 μg/m^3 and 5 μg/m^3 for $PM_{2.5}$. In LB Hackney, PM_{10} levels are below the national air quality objective. However, concentrations in the borough remain higher than the updated WHO standard (15 μg/m^3) highlighting the need for more action on reducing PM

[52] https://directory.londoncouncils.gov.uk/demographics/population/hackney/

emissions in London (appendix 5). $PM_{2.5}$ concentrations also exceed the WHO guideline limit in LB Hackney.

There is no safe level of exposure which doesn't impact on health. Therefore, further reduction of NO_2 or PM concentrations below air quality standards is likely to bring additional health benefits.

5.3 Air quality focus areas

In 2016 the GLA identified eight Air Quality Focus Areas within LB Hackney, these are outlined in figure 7 below. Population exposure at schools, nurseries, care homes and hospitals can be seen in appendix 6.

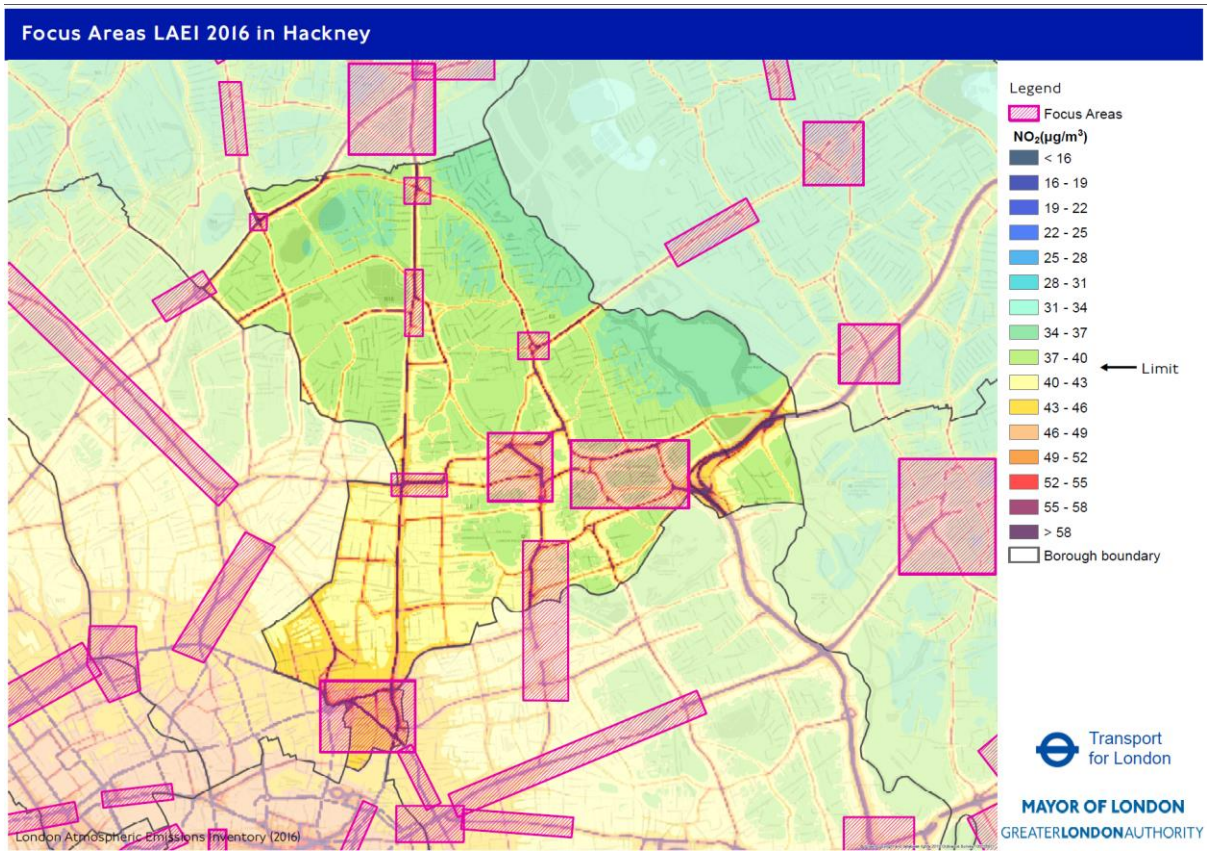

Figure 7 LB Hackney Focus Areas, London Atmospheric Emissions Inventory (LAEI 2016)

5.4 Health Impacts in LB Hackney

The Public Health Outcomes Framework, mentioned in Chapter 2, includes a benchmark tool which enables the comparison of the fraction (%) of mortality attributable to long term exposure to $PM_{2.5}$ in each local authority in the UK. Statistics for each of the London boroughs are included in appendix 2.

Imperial College London have recently carried out research looking at the health burden of current air pollution and estimates of the mortality impacts of $PM_{2.5}$ and NO_2 in London[53]. See appendix 7 for data sources and calculations. The overall findings from this research are that in 2019 in Greater London, the equivalent of between 3,600 and 4,100 deaths (61,800 to 70,200 life years lost) were estimated to be attributable to human-made $PM_{2.5}$ and NO_2, considering that health effects exist even at very low levels of air pollution. This calculation includes deaths from all causes including respiratory, lung cancer and cardiovascular disease. Local Authority population, total deaths from all causes, range of mortality burden (deaths) for $PM_{2.5}$ and NO_2 and mean fraction of mortality attributable to $PM_{2.5}$ and NO_2 in 2019 can be found in appendix 8.

Figure 8 below presents the mean fraction of mortality attributable to $PM_{2.5}$ and NO_2 in each London borough compared to the London average. The boroughs with the lowest fraction of mortality attributable to $PM_{2.5}$ and NO_2 are outer London boroughs and the boroughs with the highest fraction of mortality attributable to $PM_{2.5}$ and NO_2 are inner London boroughs.

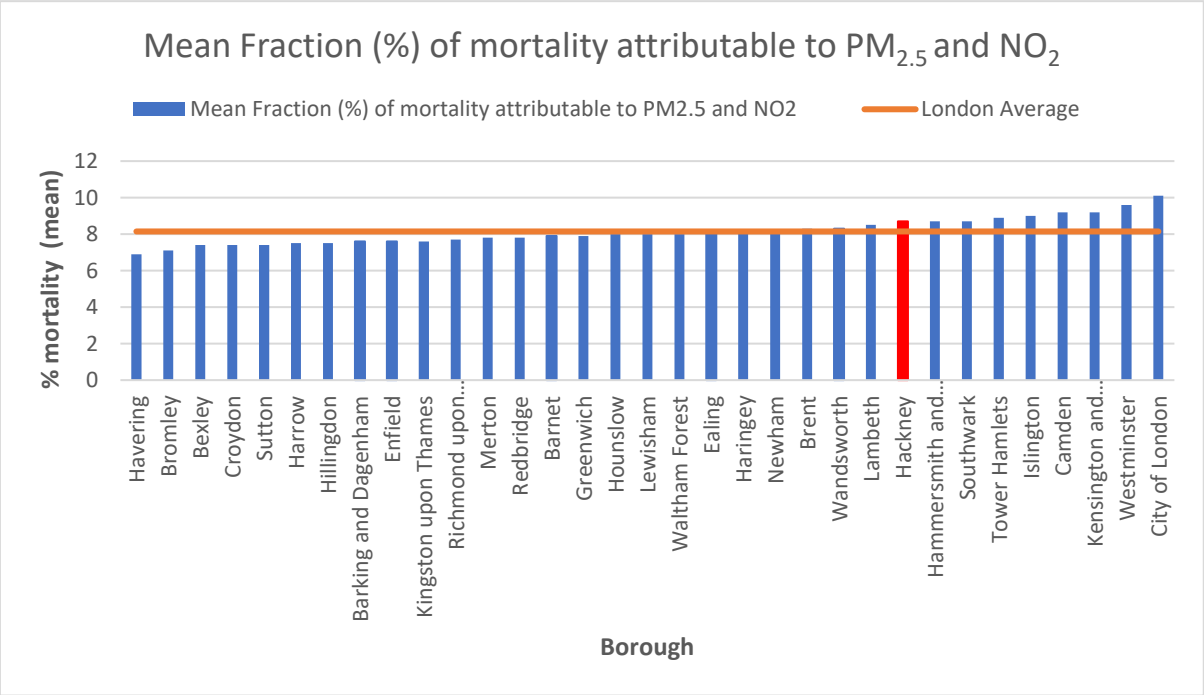

Figure 8 Mean fraction of mortality attributable to $PM_{2.5}$ and NO_2 in each London borough

The Imperial College research also looked at a breakdown of mortality burden and life years lost at a ward level across London (table 4). Results are presented as an upper and lower range of life years lost based on the multi pollutant exploratory method (including life years lost as a result of $PM_{2.5}$ and NO_2).

53 https://www.london.gov.uk/sites/default/files/london_health_burden_of_current_air_pollution_and_future_health_benefits_of_mayoral_air_quality_policies_january2020.pdf

Table 4 Mortality burden and life years lost attributed to exposure to $PM_{2.5}$ and NO_2 pollution in 2019 in wards in the London Borough of Hackney.

Ward	Population	Deaths (all causes)	Mortality burden (min)	Mortality burden (max)	Life years lost (min)	Life years lost (max)
Brownswood	8171	38	3.15	3.50	70.13	78.11
Cazenove	15656	74	5.46	6.16	109.84	123.71
Clissold	17290	111	8.82	9.91	186.90	210.07
Dalston	12656	77	6.56	7.29	157.49	174.66
De Beauvoir	13103	69	5.99	6.63	121.13	134.01
Hackney Central	16882	108	9.13	10.15	185.60	206.32
Hackney Downs	17535	124	10.08	11.31	215.51	241.71
Hackney Wick	14972	103	8.70	9.63	216.14	238.94
Haggerston	16594	115	9.75	10.80	164.42	181.99
Homerton	16625	97	8.17	9.09	152.16	169.14
Hoxton East & Shoreditch	14636	78	6.84	7.50	162.04	177.88
Hoxton West	16598	88	7.95	8.71	176.81	193.89
King's Park	14830	128	10.04	11.32	164.57	185.59
Lea Bridge	19061	156	12.61	14.12	325.23	364.00
London Fields	16688	105	8.98	9.96	185.85	205.94
Shacklewell	11761	76	6.08	6.83	122.73	137.72
Springfield	16568	116	8.99	10.13	170.03	191.73
Stamford Hill West	10669	92	7.33	8.25	121.02	136.37
Stoke Newington	17932	129	10.49	11.79	199.03	223.51
Victoria	16778	125	10.15	11.24	199.94	221.22
Woodberry Down	11517	80	6.44	7.17	127.14	141.53

6 WHY FURTHER ACTION IS NEEDED

Some of the actions already being taken across London to improve air quality are presented in section 4.3 above. However, there is much to do with most of London exceeding the interim WHO guideline limit for $PM_{2.5}$. In addition, areas of the capital still exceed NO_2 WHO guideline values. Currently there is no clear evidence of a safe level of exposure below which there is no risk of adverse health effects; therefore, further reductions in concentrations of PM and NO_2 likely to bring additional health benefits. Coordinated action and collaboration is needed to reduce air pollution, improve health and to reduce health inequalities.

6.1 Maximising the health benefits from improving air quality

Certain measures to improve air quality have significant co-benefits for health and reducing health inequalities if appropriately targeted. PHE's (now UK HSA) 2019 evidence review[54] looked at how to reduce the harm to health from outdoor air pollution. It found that there is some strong evidence that interventions in each of the five areas reviewed can reduce harmful emissions. This includes vehicles and fuels, spatial planning, industry, agriculture, and people's behaviour. They recommend adopting an intervention hierarchy approach. That means taking measures to prevent or reduce pollution rather than mitigation after it occurs or relying on reducing exposure. It also recommends adopting a 'net health gain' principle so that any new development or proposed changes should deliver an overall benefit to public health. Evaluation should be embedded in the design and costing of all interventions to gather evidence to inform best practice in the future.

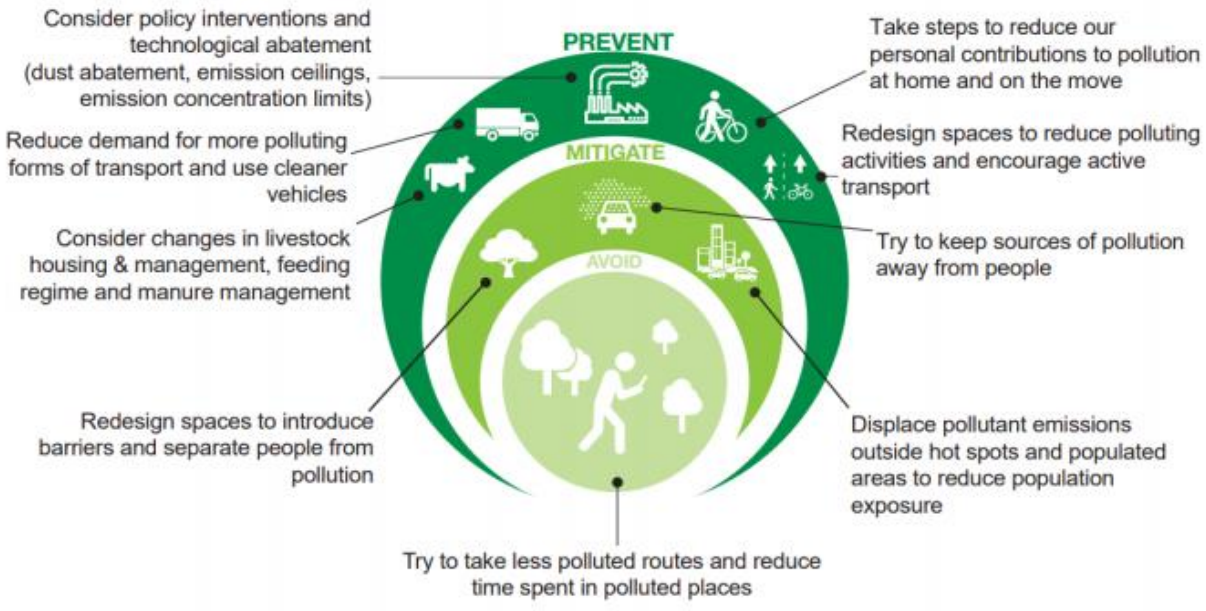

Figure 9 Illustrated Air Pollution Hierarchy, taken from PHE's 2019 evidence review.

[54] UKHSA (2019) Review of interventions to improve outdoor air quality and public health: Principal interventions for local authorities
https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/937341/Principal_interventions_for_local_authorities-air_quality_public_health.pdf

6.2 Communicating with patients and the public

The Prevention of Future Deaths report after the Ella Adoo-Kissi-Debrah inquest highlighted the public's low awareness of the health impacts of air pollution. It made the case for better communication of these risks and what people can do about them. Both local authorities and medical and nursing professionals should provide this information, for example by signposting to Defra's pollution forecast and various online resources[55, 56]. This is needed both during air pollution episodes and more generally regarding the long-term benefits to health of improving air quality. It is an important area with opportunities for stronger local authority - NHS collaboration at local and integrated care system (ICS) level.

One of the many actions people can take to reduce their exposure and their contribution to air pollution is to consider how they travel. Reducing unnecessary car trips can make a big difference. It is important that health professionals and local government help communicate options to the public to help them make the healthiest choices. Appendix 9 has a list of actions Londoners can take to mitigate against air pollution. Local authorities also play an important role in enabling this by investing in infrastructure, public transport and designing healthy environments.

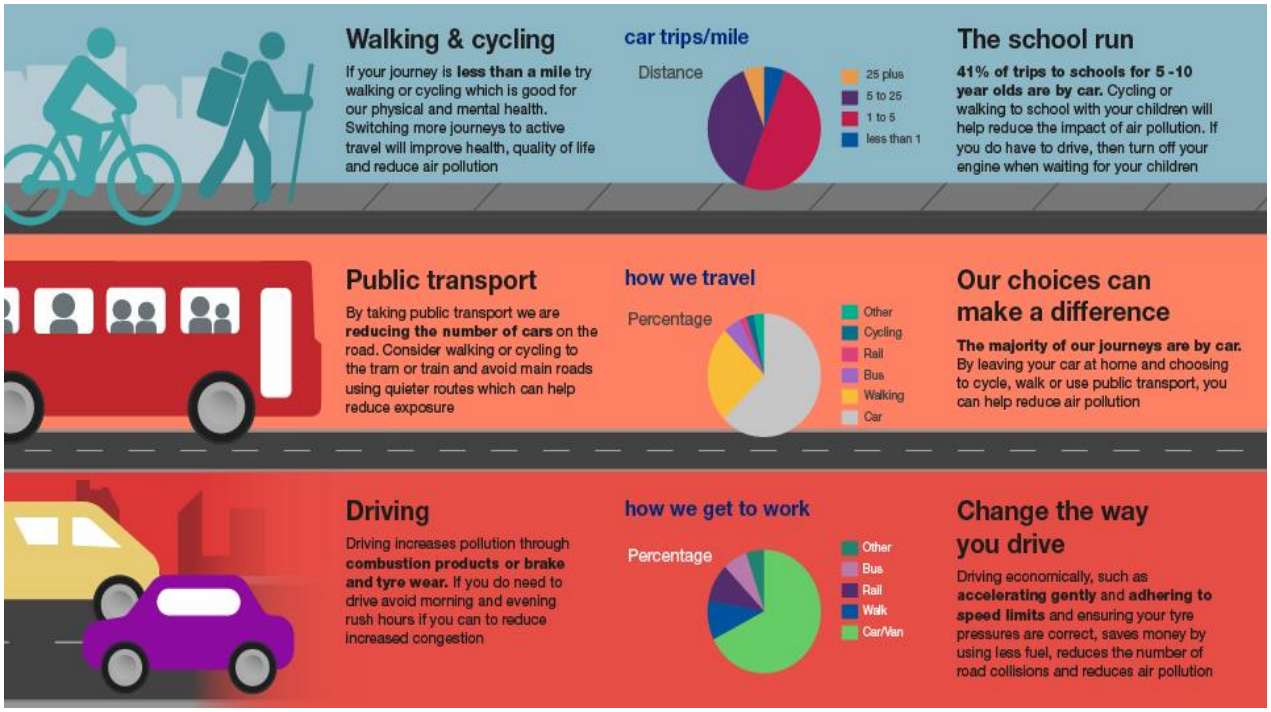

Figure 10 Why travel makes a difference. Taken from PHE Health Matters 2018

[55] https://www.gov.uk/government/publications/health-matters-air-pollution/health-matters-air-pollution
[56] https://www.cleanairhub.org.uk/

Case study: Mobilising GPs on air pollution

A recruitment campaign has been launched to engage 40 GPs from across England. The aim is to explore the vital role they can play in protecting patients against air pollution. Learning from the six-month pilot project will help shape a national model for GP action on air pollution. The 40 health professionals will become Clean Air Champions. Through the project they'll discover how best to engage patients on air pollution health risks, and what patients can do to reduce their exposure.

Air pollution is well recognised as a critical public health issue. Evidence shows increases in the daily number of GP respiratory consultations and inhaler prescriptions following short-term increases in exposure to air pollution[57]. The project is supported by Defra and rolled out by Global Action Plan and UK Health Alliance on Climate Change, with Imperial College London. GP Clean Air Champions will be offered an air pollution training session and receive communications material on air pollution to share with patients. Training materials for health professionals and patient focused resources can also be found on the action for cleaner air website. For more information contact cleanerair@globalactionplan.org.uk or visit the Clean Air Hub.

6.3 Actions boroughs can take to improve air quality

Boroughs have a statutory responsibility to deliver actions locally, and to detail these in up-to-date Air Quality Action Plans. Boroughs should already use the LLAQM Borough Air Quality Action Matrix as part of their London Local Air Quality Management action planning obligations. The list of actions in the matrix use levers that are under borough control to help improve air quality. This is not an exhaustive list, however. Boroughs should continue to explore new ways to improve local air quality and build upon the suggested actions.

The Coroner for Inner South London, in his report following the inquest into Ella Adoo-Kissi-Debrah's death, noted there was low public awareness of pollution. It called for action to be taken to improve public awareness about air pollution and its sources and impacts upon health. This would help individuals reduce their personal exposure to air pollution. Central Government, the Mayor of London, London Borough of Lewisham and medical professional organisations were identified as the parties needing to take such action. However, the report is clearly also relevant to all local authorities and other organisations responsible for protecting public health or improving air quality.

Borough officers and public health professionals can play an important role in promoting and empowering behaviour change for stakeholders and the general public to:

- reduce the sources of, and people's exposure to, air pollution across the borough and beyond

[57] https://ehjournal.biomedcentral.com/articles/10.1186/s12940-021-00730-1#citeas

- achieve better health outcomes for all, particularly for vulnerable groups most impacted by air pollution

Local Environment and Air Quality Strategies should be mindful of all forms of pollution. Risk should be considered at both consistent low-level exposure and intermittent high-level exposure.

Borough officers and public health professionals should promote a step change in local transport systems to prioritise air quality and public health. Investment in walking and cycling infrastructure to enable active travel should be prioritised, alongside a rapid shift towards zero emission vehicles.

Boroughs and their local partner organisations have a key role to play in engaging with and raising awareness among their residents. This includes informing them of London-wide measures and the many initiatives in place to help reduce exposure to air pollution. For example, the new London Schools Pollution Helpdesk, the Mayor's pollution alerts and airTEXT alert service (see section 4.2).

Borough officers and public health professionals can also incorporate and promote adherence to recently published NICE guidance on outdoor air quality and health[58]. This has guidance based on four quality statements, spanning local authorities, public sector organisations and healthcare providers, based on the most recent evidence.

Borough public health teams should work closely with air quality and environment colleagues and prioritise communicating health messages to the public. This includes both during air pollution episodes and more generally about the long-term health benefits of cleaner air.

In March 2021, Association of Directors of Public Health (ADPH) London and London Environment Directors' Network revised their joint position statement on air quality[59]. You can view their recommendations for action to clean up London's air in appendix 10. This includes the need for London boroughs to support a shared narrative and campaign on air quality and public health impacts across London. This will help change the public's perception around their own contribution to cleaner air.

Air pollution does not respect boundaries. Of course, localised emissions from transport, heating and industry all contribute to London's air pollution. However, it also receives a large amount of transboundary pollution from outside the city. This is primarily true of PM, but to a far lesser extent for gaseous pollutants like NO_2. In fact, over half the city's concentrations of $PM_{2.5}$ come from regional and often transboundary sources outside of London[60]. Therefore, alongside local action and collaboration with neighbouring boroughs, London needs national, European and international action to meet the previous WHO guideline value of by 2030.

[58] https://www.nice.org.uk/guidance/qs181
[59] https://adph.org.uk/networks/london/wp-content/uploads/2021/03/ADPH-London-LEDNet-Air-Quality-Joint-Position-full.pdf
[60] https://www.london.gov.uk/sites/default/files/air_quality_in_london_2016-2020_october2020final.pdf

7 NEXT STEPS

We hope the updated air quality data and health information in this report will be of use when developing local initiatives.

Under the Environment Act 1995[61] local authorities have a statutory responsibility to participate in Local Air Quality Management. Actions must be delivered locally, and Air Quality Action plans kept up to date and developed with public health involvement and expertise.

Boroughs are encouraged to continue the ambitious action for cleaner air and improved public awareness many already lead the way on. This work needs to be well coordinated across London, particularly through work with neighbouring boroughs. Boroughs are also asked to support Mayoral objectives around air quality including those within the London Environment Strategy. This is part of the work towards achievement of the previous WHO target for pollutants even when legal limits are met. Find out more and view resources about borough obligations under the London Local Air Quality Management framework here.

Public Health officers are asked to:

- work closely with relevant colleagues across air quality, transport, planning and housing teams as well as wider stakeholders, as appropriate. This is in order to drive forward action on the priorities and measures outlined in section 6.3
- include updated borough-specific data and updated epidemiological and health economic evidence from this report in your Joint Strategic Needs Assessment (JSNA). This will help ensure air quality is integrated into strategic decision making and relevant council plans and strategies. The recent LAEI 2019 publication has useful data to include in JSNAs[62]
- act in line with the concerns raised in the Prevent Future Deaths report for Ella Adoo-Kissi-Debrah[63]. Residents, especially those most vulnerable, must be informed about both the impacts and sources of information about air pollution. It includes being alerted to periods of higher pollution as well what steps they can take to reduce their day-to-day exposure. This should be both through the local authority's own public communications and through partnership work with clinical and social care colleagues.
- ensure regular contact with your borough Air Quality Officer. Discuss what is being done locally to tackle air quality and how to bring public health evidence and approaches to bear in this work. Activities should include:
    - Air Quality and Health agenda alignment
    - Joint working on priority projects and input into key local strategies and the local plan

[61] www.environment-agency.gov.uk/netregs/legislation/.../107183.aspx
[62] https://data.london.gov.uk/dataset/london-atmospheric-emissions-inventory--laei--2019
[63] https://www.judiciary.uk/wp-content/uploads/2021/04/Ella-Kissi-Debrah-2021-0113-1.pdf

    - Communications and messaging around air quality and health
    - Reaching out to colleagues in healthcare organisations, such as doctors, nurses and pharmacists around opportunities to strengthen their education, training and awareness in relation to air quality.
    - Funding for initiatives
    - Sharing best practice to GPs and sensitive receptors
- ensure that you are consulted early on any planned Air Quality Action Plan updates and identify opportunities for maximising the health benefits. Make relevant connections with your Health and Wellbeing Strategy. For example, by promoting physical activity through increasing walking and cycling or ensuring improvements to housing stock tackle fuel poverty and improve ventilation.

Please share your thoughts on this report and what information would be useful to you. Let us know about any innovative work on air quality and health you are doing in your borough.

Find out more at http://www.london.gov.uk/airquality
For any comments or questions please email airquality@london.gov.uk

8 APPENDICES

Appendix 1 National Air Quality objectives and European Directive limit and target values[64]

National air quality objectives and European Directive limit and target values for the protection of human health						
Pollutant	**Applies**	**Objective**	**Concentration measured as [10]**	**Date to be achieved by (and maintained thereafter)**	**European Obligations**	**Date to be achieved (by and maintained thereafter)**
Particles (PM_{10})	UK	50 µg/m^3 not to be exceeded more than 35 times a year	24 hour mean	31 December 2004	50 µg/m^3 not to be exceeded more than 35 times a year	1 January 2005
	UK	40 µg/m^3	annual mean	31 December 2004	40 µg/m^3	1 January 2005
	Indicative 2010 objectives for PM_{10} (from the 2000 strategy and Addendum) have been replaced by an exposure reduction approach for $PM_{2.5}$ (except in Scotland – see below)					
	Scotland	50 µg/m^3 not to be exceeded more than 7 times a year	24 hour mean	31 December 2010	50 µg/m^3 not to be exceeded more than 35 times a year	1 January 2005
	Scotland	18 µg/m^3	annual mean	31 December 2010	40 µg/m^3	1 January 2005
Particles ($PM_{2.5}$) Exposure Reduction	UK (except Scotland)	25 µg/m^3	annual mean	2020	Target value - 25 µg/m^3	2010
	Scotland	10 µg/m^3		31 December 2020	Limit value - 25 µg/m^3	1 January 2015
	UK urban areas	Target of 15% reduction in concentrations at urban background		Between 2010 and 2020	Target of 20% reduction in concentrations at urban background.	Between 2010 and 2020

National air quality objectives and European Directive limit and target values for the protection of human health						
Pollutant	**Applies**	**Objective**	**Concentration measured as[1]**	**Date to be achieved by (and maintained thereafter)**	**European Obligations**	**Date to be achieved by (and maintained thereafter)**
Nitrogen dioxide	UK	200 µg/m^3 not to be exceeded more than 18 times a year	1 hour mean	31 December 2005	200 µg/m^3 not to be exceeded more than 18 times a year	1 January 2010
	UK	40 µg/m^3	annual mean	31 December 2005	40 µg/m^3	1 January 2010
Ozone	UK	100 µg/m^3 not to be exceeded more than 10 times a year	8 hour mean	31 December 2005	Target of 120 µg/m^3 not to be exceeded by more than 25 times a year averaged over 3 years	31 December 2010
Sulphur dioxide	UK	266 µg/m^3 not to be exceeded more than 35 times a year	15 minute mean	31 December 2005	-	-
	UK	350 µg/m^3 not to be exceeded more than 24 times a year	1 hour mean	31 December 2004	350 µg/m^3 not to be exceeded more than 24 times a year	1 January 2005
	UK	125 µg/m^3 not to be exceeded more than 3 times a year	24 hour mean	31 December 2004	125 µg/m^3 not to be exceeded more than 3 times a year	1 January 2005
Polycyclic Aromatic Hydrocarbons	UK	0.25 ng/m^3 B[a]P	as annual average	31 December 2012	1.0 ng/m^3	31 December 2012

[64] This does not include the 2020 amendments to $PM_{2.5}$ limit values.

National air quality objectives and European Directive limit and target values for the protection of human health						
Pollutant	**Applies**	**Objective**	**Concentration measured as[1]**	**Date to be achieved by (and maintained thereafter)**	**European Obligations**	**Date to be achieved by (and maintained thereafter)**
Benzene	UK	16.25 µg/m^3	running annual mean	31 December 2003	-	-
	England and Wales	5 µg/m^3	annual average	31 December 2010	5 µg/m^3	1 January 2010
	Scotland, Northern Ireland	3.25 µg/m^3	running annual mean	31 December 2010	-	-
1,3-butadiene	UK	2.25 µg/m^3	running annual mean	31 December 2003	-	-
Carbon monoxide	UK	10 mg/m^3	maximum daily running 8 hour mean/in Scotland as running 8 hour mean	31 December 2003	10 mg/m^3	1 January 2005
Lead	UK	0.5 µg/m^3	annual mean	31 December 2004	0.5 µg/m^3	1 January 2005
		0.25 µg/m^3	annual mean	31 December 2008	-	-

National air quality objectives and European Directive limit and target values for the protection of vegetation and ecosystems						
Pollutant	**Applies**	**Objective**	**Concentration measured as[1]**	**Date to be achieved by (and maintained thereafter)**	**European Obligations**	**Date to be achieved by (and maintained thereafter)**
Nitrogen oxides	UK	30 µg/m^3	annual mean	31 December 2000	30 µg/m^3	19 July 2001
Sulphur dioxide	UK	20 µg/m^3	annual mean	31 December 2000	20 µg/m^3	19 July 2001
	UK	20 µg/m^3	winter average	31 December 2000	20 µg/m^3	19 July 2001
Ozone: protection of vegetation and ecosystems	UK	Target value of 18,000 µg/m^3 based on AOT40 to be calculated from 1 hour values from May to July, and to be achieved, so far as possible, by 2010	Average over 5 years	1 January 2010	Target value of 18,000 µg/m^3 based on AOT40 to be calculated from 1 hour values from May to July, and to be achieved, so far as possible, by 2010	1 January 2010

https://uk-air.defra.gov.uk/assets/documents/Air_Quality_Objectives_Update.pdf

Appendix 2 Fraction (%) of mortality attributable to long term exposure to $PM_{2.5}$ (2019)

Local Authority	Fraction (%) of mortality attributable to long-term exposure to $PM_{2.5}$
Barking and Dagenham	6.8
Barnet	6.3
Bexley	6.1
Brent	6.4
Bromley	5.7
Camden	6.6
City of London	6.9
Croydon	6.0
Ealing	6.4
Enfield	6.5
Greenwich	6.4
Hackney	6.8
Hammersmith and Fulham	6.6
Haringey	6.6
Harrow	6.0
Havering	6.0
Hillingdon	6.0
Hounslow	6.2
Islington	6.8
Kensington and Chelsea	6.8
Kingston upon Thames	5.9
Lambeth	6.6
Lewisham	6.4
Merton	6.3
Newham	7.0
Redbridge	6.7
Richmond upon Thames	6.0
Southwark	6.6
Sutton	5.8
Tower Hamlets	6.7
Waltham Forest	6.9
Wandsworth	6.4
Westminster	6.8
London Region	6.4
England	5.1

Appendix 3 Public Health Outcomes Framework indicators that could be influenced by policies to improve air quality

Theme	Public Health Outcomes Framework Indicator
Air pollution	Fraction of mortality attributable to particulate air pollution
Noise pollution	The percentage of the population exposed to road, rail and air transport noise of 65dB(A) or more, during the daytime
	The percentage of the population exposed to road, rail and air transport noise of 55 dB(A) or more during the night-time
Fuel poverty	Fuel poverty
Sustainability plans	NHS organisations with a board approved sustainable development management plan
Life expectancy	Healthy life expectancy at birth and aged 65 (males & females)
	Life expectancy at birth and aged 65 (males & females)
	Disability-free life expectancy at birth and aged 65 (males & females)
	Inequality in life expectancy at birth and aged 65 (males & females)
Premature mortality	Mortality rate from causes considered preventable
	Under 75 mortality rate from cardiovascular diseases considered preventable
	Under 75 mortality rate from cancer considered preventable
	Under 75 mortality rate from respiratory disease considered preventable
Musculoskeletal problem	Percentage reporting a long term musculoskeletal (MSK) problem
Excess winter deaths	Excess winter deaths index and in those aged 85+
Low birth weight babies	Low birth weight of term babies
Use of outdoor space	Utilisation of outdoor space for exercise/health reasons
Physical activity	Percentage of physically active children and young people
	Percentage of physically active adults and percentage of physically inactive adults
Overweight and obesity	Obesity in early pregnancy
	Reception: Prevalence of overweight (including obesity)
	Year 6: Prevalence of overweight (including obesity)
	Percentage of adults (aged 18+) classified as overweight or obese

Theme	Public Health Outcomes Framework Indicator
Road traffic accidents	Killed and seriously injured (KSI) casualties on England's roads
Injuries	Hospital admissions caused by unintentional and deliberate injuries in children (aged 0-14 years; 0-4 years and 15-24 years)
Falls and hip fractures	Emergency hospital admissions due to falls in people aged 65 and over; aged 65-79 and 80+
	Hip fractures in people aged 65 and over; aged 65-79 and 80+
Social interaction	Social Isolation: percentage of adult social care users and adult carers who have as much social contact as they would like
Self-reported wellbeing	Self-reported wellbeing - people with a low satisfaction score
	Self-reported wellbeing - people with a low worthwhile score
	Self-reported wellbeing - people with a low happiness score
	Self-reported wellbeing - people with a high anxiety score
Sickness absence	Percentage of employees who had at least one day off in the previous week and percentage of working days lost due to sickness absence in previous week

There are other public health indicators which are included in other public health profiles rather than the PHOF itself which could be influenced by policies to improve air quality. These include but are not limited to the following:

Prevalence of and mortality from asthma and COPD and hospital admissions for asthma, COPD and other respiratory diseases, which are found here: Inhale - INteractive Health Atlas of Lung conditions in England - PHE

Prevalence of diabetes, coronary heart disease and stroke, which are found here: Cardiovascular Disease - PHE

Additional indicators related to active travel and physical activity can be found here - https://fingertips.phe.org.uk/profile/physical-activity

Appendix 4 Relevant London Strategies

London Health inequalities strategy, 2018[65]

The London Health Inequalities Strategy sets out the Mayor's aims and objectives for addressing health inequalities in London. It provides a vision for the health of Londoners and sets a direction of travel for collaborative working over the next ten years, with partners, agencies and communities. The strategy is supported by a 'health in all policies' approach. This means that many of the actions that the Mayor will take which will have an impact upon health inequalities, originate in other Mayoral strategies. The Mayor's key ambition under the strategy's 'Healthy Places aim is 'for London to have the best air quality of any global city, with progress fastest in the most polluted areas, benefitting people most vulnerable to the effects of air pollution'.

The Health and Care Vision for London, 2019[66]

The London Vision partnership is made up of the Greater London Authority, UKHSA, London Councils and the National Health Service (NHS) in London. It exists to provide coordinated leadership and a shared ambition to make our London the healthiest global city and the best global city in which to receive health and care services. It reflects the Mayor's Health Inequalities Strategy, London Councils' Pledges to Londoners, the Prevention Green Paper and the NHS Long Term Plan. Air quality has been prioritised one of the ten key areas of focus where partnership action is needed at a pan-London level, with the ambition that every Londoner breathes safe air, and a commitment by the Mayor, NHS England, London Councils and UKHSA to work together to reach legal NO_2 concentration limits and to work towards WHO $PM_{2.5}$ limits by 2030.

London Plan[67]

The new London Plan (2021) introduces significant new protections for local and regional air quality, including in relation to the most damaging $PM_{2.5}$ particulates. For the first time, the largest developments will be required to take an Air Quality Positive approach, meaning that they will have to consider in depth how they will contribute to improving local and regional air quality through intelligent approaches to design, the urban realm and heating and transport infrastructure.

More broadly the new London Plan requires all new developments to take into account local air quality to ensure that they are suitable for their use and location, that they are Air Quality Neutral, that they do not have unacceptable impacts during construction and that they take particular care to protect the most vulnerable and most disadvantaged members of society.

[65] https://www.london.gov.uk/sites/default/files/health_strategy_2018_low_res_fa1.pdf
[66] 11448_hlp_london_vision_-_annual_report_2019_full_version.pdf
[67] https://www.london.gov.uk/sites/default/files/the_london_plan_2021.pdf

Mayor's London Environment Strategy (LES)[68]

The Mayor's London Environment Strategy (LES) was published in May 2018. The LES sets out how London will have the cleanest air of any major world city, meeting legal requirements and the previous WHO health-based guidelines. The LES has multiple environmental objectives: improving air quality to protect public health, creating new green spaces and improving biodiversity, reducing greenhouse gas emissions and increasing efficiency of energy, waste and water, and helping London to prevent and adapt against climate change. The three air quality objectives under which all other polices and proposals are structured are:

Objective 4.1 Support and empower London and its communities, particularly the most disadvantaged and those in priority locations, to reduce their exposure to poor air quality

Objective 4.2 Achieve legal compliance with UK and EU limits as soon as possible, including by mobilising action from London Boroughs, Government and other partners

Objective 4.3 Establish and achieve new, tighter air quality targets for a cleaner London by transitioning to a zero emission London by 2030, meeting WHO Health based guidelines for air quality

The Mayor's Transport Strategy [69]

The Mayor's Transport Strategy (MTS) sets out the Mayor's policies and proposals to reshape transport in London over the next two decades with the ambition that 80% of trips are made by active or sustainable modes (walking, cycling and public transport) with all Londoners achieving the 20 minutes of active travel each day that they need to stay healthy by 2041.

Transport has the potential to shape London, from the streets where Londoners live, work and spend time, to the Tube, rail and bus services they use every day. By using the Healthy Streets Approach to prioritise human health and experience in planning the city, the Mayor wants to change London's transport mix so the city works better for everyone

[68] https://www.london.gov.uk/what-we-do/environment/london-environment-strategy
[69] https://www.london.gov.uk/what-we-do/transport/our-vision-transport/mayors-transport-strategy-2018

Appendix 5 PM monitoring in LB Hackney

Annual Mean PM_{10} Concentration monitoring results (µg m^{-3})

Site	2014	2015	2016	2017	2018	2019	2020
Hackney	27	26	20	19	24	22	19

Annual Mean $PM_{2.5}$ Concentration monitoring results (µg m^{-3})

Site	2014	2015	2016	2017	2018	2019	2020
Hackney	14	12	12	12	10	9	8

Appendix 6 Population exposure

The table below summarises the number of care homes, hospitals, schools and nurseries in Hackney and shows the number of each exceeding the $PM_{2.5}$ legal limit (25µg/m^3), interim WHO guideline (10µg/m^3) and final WHO guideline limit (5µg/m^3). Full datasets can be found in the LAEI2019.

Number of care homes	Number exceeding $PM_{2.5}$ legal (25µ/gm^3)	Number exceeding $PM_{2.5}$ WHO interim (10µg/m^3)	Number exceeding $PM_{2.5}$ WHO final (5µg/m^3)
2		2	2
Number of Hospitals	Number exceeding $PM_{2.5}$ legal (25µg/m^3)	Number exceeding $PM_{2.5}$ WHO interim (10µg/m^3)	Number exceeding $PM_{2.5}$ WHO final (5µg/m^3)
6		6	6
Number of Schools	Number exceeding $PM_{2.5}$ legal (25µg/m^3)	Number exceeding $PM_{2.5}$ WHO interim (10µg/m^3)	Number exceeding $PM_{2.5}$ WHO final (5µg/m^3)
113		113	113
Number of Nurseries	Number exceeding $PM_{2.5}$ legal (25µg/m^3)	Number exceeding $PM_{2.5}$ WHO interim (10µg/m^3)	Number exceeding $PM_{2.5}$ WHO final (5µg/m^3)
2		2	2

The table below summarises the number of care homes, hospitals/ medical centres and schools in Hackney and shows the number of each exceeding the NO_2 legal limit (40µg/m^3), interim WHO guideline (30µg/m^3) and final WHO guideline limit (10µg/m^3). Full datasets can be found in the LAEI2019.

Number of care homes	Number exceeding NO_2 legal (40µg/m^3)	Number exceeding NO_2 WHO interim (30µg/m^3)	Number exceeding NO_2 WHO final (10µg/m^3)
2		2	2
Number of Hospitals	Number exceeding NO_2 legal (40µg/m^3)	Number exceeding NO_2 WHO interim (30µg/m^3)	Number exceeding NO_2 WHO final (10µg/m^3)
6		5	6
Number of Schools	Number exceeding NO_2 legal (40µg/m^3)	Number exceeding NO_2 WHO interim (30µg/m^3)	Number exceeding NO_2 WHO final (10µg/m^3)
113		82	113
Number of Nurseries	Number exceeding NO_2 legal (40µg/m^3)	Number exceeding NO_2 WHO interim (30µg/m^3)	Number exceeding NO_2 WHO final (10µg/m^3)
2		2	2

Care homes
London context

Of an estimated 322 care homes, none are in locations where the average NO_2 concentration was above the legal limit in 2019. 281 (87%) of these facilities are in areas exceeding the WHO interim $PM_{2.5}$ guideline of 10µg/m^3 and all are in areas exceeding the WHO $PM_{2.5}$ guideline of 5µg/m^3.

Hackney

Both care homes in Hackney exceed the interim WHO guideline of 10µg/m^3 for $PM_{2.5}$ (highlighted orange below right) and exceed the WHO interim guideline of 30µg/m^3 for NO_2 (highlighted orange below left). Data are presented in alphabetical order.

Care homes	LAEI 2019 Average NO_2 (ug/m^3)	LAEI 2019 Average $PM_{2.5}$ (ug/m^3)
Acorn Lodges Care Home	31.5	11.3
Anthony Kendall House	34.9	11.7

Hospitals and medical centres
London Context

Of an estimated 291 hospitals it is estimated that 26 (9%) of these are in locations where the average NO_2 concentration was above the legal limit for NO_2 in 2019. 295 (91%) of these facilities were in areas exceeding the WHO interim $PM_{2.5}$ guideline of 10µg/m^3 and all were in areas exceeding the WHO $PM_{2.5}$ guideline of 5µg/m^3.

Hackney

There are six hospitals in Hackney all of which exceed the interim WHO guideline of 10µg/m^3 for $PM_{2.5}$ (highlighted orange below right). All but one hospital in Hackney exceeds the WHO interim guideline of 30µg/m^3 for NO_2 (highlighted orange below left). Data are presented in alphabetical order.

Hospitals	LAEI 2019 Average NO_2 (ug/m^3)	LAEI 2019 Average $PM_{2.5}$ (ug/m^3)
City And Hackney Psychotherapy Service	31.6	11.3
Homerton University Hospital	29.9	11
St Leonards Hospital	34.6	12
The Ivy Centre	34.8	12
The Lawson Practice	34	11.9

Hospitals	LAEI 2019 Average NO_2 (ug/m^3)	LAEI 2019 Average $PM_{2.5}$ (ug/m^3)
Whiston Road Surgery	35.4	12.1

Schools and Nurseries

London Context

Analysis of NO_2 concentration data shows that the following number of each type of educational facilities are in areas of NO_2 exceedance of the legal limit in 2019. Analysis shows that of 3,262 education establishments assessed, 52 (1.6%) are in areas exceeding legal limits for NO_2. Analysis shows that of 2,258 state primary and secondary schools, 20 (0.9%) are in areas exceeding legal limits for NO_2. The analysis of $PM_{2.5}$ concentrations (based on 150m buffer) indicates that 88% of schools (2,883 establishments) are in areas exceeding the WHO interim guideline of 10µg/m^3 with all exceeding the WHO guideline of 5µg/m^3.

Hackney

There are two nurseries in Hackney both of which exceed the interim WHO guideline of 10µg/m^3 for $PM_{2.5}$ (highlighted orange below right) and both of which exceed the WHO interim guideline of 30µg/m^3 for NO_2 (highlighted orange below left). Data are presented in alphabetical order.

Nurseries	LAEI 2019 Average NO_2 (ug/m^3)	LAEI 2019 Average $PM_{2.5}$ (ug/m^3)
Comet Nursery School and Children's Centre	33.3	11.7
Wentworth Nursery School and Children's Centre	32.9	11.5

All schools in Hackney exceed the interim WHO guideline of 10µg/m^3 for $PM_{2.5}$ (highlighted orange below right). All schools exceed the WHO guideline of 10µg/m^3 for NO_2 (highlighted yellow below left) with 81 exceeding the WHO interim guideline of 30µg/m^3 for NO_2 (highlighted orange below left). No schools in Hackney exceed the legal limit for NO_2. Data are presented in alphabetical order.

Schools	LAEI 2019 Average NO_2 (ug/m^3)	LAEI 2019 Average $PM_{2.5}$ (ug/m^3)
Al-Falah Primary School	31	11.2
Baden-Powell School	32.3	11.4
Beis Aharon School	28.4	10.8

Schools	LAEI 2019 Average NO_2 (ug/m^3)	LAEI 2019 Average $PM_{2.5}$ (ug/m^3)
Beis Chinuch Lebonos Girls School	32	11.2
Beis Malka Girls' School	29.9	11
Beis Rochel d'Satmar Girls' School	29.9	11
Beis Rochel D'satmar School	30.4	11.1
Beis Ruchel D'Satmar London	34.9	11.7
Beis Trana Girls' School	31.2	11.2
Beis Yaakov Girls School	30.1	11
Benthal Primary School	31.1	11.2
Berger Primary School	32.5	11.4
Betty Layward Primary School	30.4	11.1
Bnei Zion Community School	29.3	10.9
Bnois Jerusalem Girls School	30.2	11.1
Bnos Zion of Bobov	28.8	10.8
Bobov Primary Boys School	29	10.8
Cardinal Pole Catholic School	35.5	11.8
City of London Academy, Shoreditch Park	32.4	11.6
Clapton Girls' Academy	30.4	11.1
Colvestone Primary School	33.2	11.5
Daubeney Primary School	28.9	10.9
De Beauvoir Primary School	33.2	11.6
Gainsborough Primary School	30.2	11.1
Gayhurst Community School	31.7	11.4
Grasmere Primary School	31.1	11.3
Grazebrook Primary School	29.1	10.9
Hackney New Primary School	32.9	11.6
Haggerston School	33.4	11.8
Halley House School	32.1	11.4
Harrington Hill Primary School	28.2	10.7
Holmleigh Primary School	29.3	10.9
Holy Trinity Church of England Primary School	32	11.4
Hoxton Garden Primary	34	11.9
Ickburgh School	31.9	11.3
Inspired Directions School	34.6	11.8
Jubilee Primary School	29.5	10.9
Kingsmead Primary School	28.5	10.8
Lauriston School	32.3	11.4
Leaways School	28.7	10.8
London Fields Primary School	32.6	11.5
Lubavitch Girls Primary School	33.1	11.4

Schools	LAEI 2019 Average NO_2 (ug/m^3)	LAEI 2019 Average $PM_{2.5}$ (ug/m^3)
Lubavitch House School (Senior Girls)	33.1	11.4
Lubavitch Junior Boys	31.9	11.3
Lubavitch Senior Boys School	30.2	11
Mandeville Primary School	28.4	10.8
Millfields Community School	29.8	11
Morningside Primary School	33.5	11.6
Mossbourne Community Academy	30.2	11.1
Mossbourne Parkside Academy	33.1	11.5
Mossbourne Riverside Academy	29.2	10.9
Mossbourne Victoria Park Academy	32	11.3
New Regent's College	35.9	12.2
Nightingale Primary School	29.7	11
Northwold Primary School	29.7	11
Ohr Emes	31.6	11.3
Oldhill Community School	28.8	10.8
Orchard Primary School	32.8	11.5
Our Lady and St Joseph Catholic Primary School	32	11.4
Our Lady's Catholic High School	30.3	11.1
Parkwood Primary School	29.9	11
Princess May Primary School	30.6	11.2
Queensbridge Primary School	32.6	11.6
Randal Cremer Primary School	33.5	11.8
Rosemary Works School	34.1	11.8
Rushmore Primary School	29.2	10.9
Sebright School	32.7	11.6
Shacklewell Primary School	31.1	11.3
Shoreditch Park Primary School	33.6	11.8
Side By Side School	27.9	10.7
Simon Marks Jewish Primary School	30	11
Sir Thomas Abney School	28.5	10.8
Skinners' Academy	29.9	11
Southwold Primary School	29	10.9
Springfield Community Primary School	28.1	10.7
St John and St James CofE Primary School	34.5	11.6
St John of Jerusalem Church of England Primary School	32.4	11.5
St John the Baptist Voluntary Aided Church of England Primary School	35.5	12.2
St Mary's Church of England Primary School, Stoke Newington	30.8	11.2

Schools	LAEI 2019 Average NO_2 (ug/m^3)	LAEI 2019 Average $PM_{2.5}$ (ug/m^3)
St Matthias Church of England Primary School	30.7	11.2
St Monica's Roman Catholic Primary School	36.1	12.4
St Scholastica's Catholic Primary School	31	11.2
St. Dominic's Catholic Primary School	33.2	11.5
St. Paul's With St. Michael's CofE Primary School	31.5	11.4
Stoke Newington School and Sixth Form	30.4	11.1
Stormont House School	30.5	11.1
TTT YY School	29.1	10.9
Talmud Torah Chaim Meirim Wiznitz School	29.5	11
Talmud Torah London	30.2	11.1
Talmud Torah Machzikei Hadass School	30.2	11
Talmud Torah Yetev Lev	29.4	10.9
Tawhid Boys School, Tawhid Educational Trust	33.3	11.5
Tayyibah Girls' School	30.9	11.2
The Boxing Academy AP Free School	30.8	11.2
The Bridge Academy	32.9	11.7
The Brooke House Sixth Form College	35	11.7
The City Academy, Hackney	34	11.6
The Garden School	30.2	11.2
The Lyceum	36.3	12.7
The Olive School Hackney	34.1	11.6
The Petchey Academy	32	11.4
The school at Hackney city farm	34.6	11.9
The Urswick School - A Church of England Secondary School	35	11.7
Thomas Fairchild Community School	34.2	11.9
TTD Gur School	32	11.3
Vishnitz Girls School	29.8	11
Waterside Academy	34.1	11.8
William Patten Primary School	32.7	11.4
Wiznitz Cheder School	32.4	11.4
Woodberry Down Community Primary School	31.3	11.2
Yesodey Hatorah Girls School	33.3	11.5
Yesodey Hatorah School	31	11.2
Yesodey Hatorah Senior Girls School	29.8	11

Appendix 7 Imperial College London study data sources and methodology

Air Quality data was taken from 20m grid data to OA concentration. Particulate matter with diameter <2.5 um ($PM_{2.5}$) and nitrogen dioxide (NO2) annual mean concentrations across Greater London were predicted for a range of years between 2013 and 2050 using the London Air Quality Toolkit (LAQT) model as part of previous studies commissioned and undertaken in partnership with TfL and GLA. These included the "LAEI 2013"[70] , "LAEI 2016"[71] , "2019 snapshot (Dajnak et al., 2020b)", "Low Emission Zone (LEZ) Scenarios", "Ultra Low Emission Zone (ULEZ)"[72], "London Environment Strategy (LES)"[73] and "$PM_{2.5}$ in London: Roadmap to meeting WHO (2005) guidelines by 2030"[74]. $PM_{2.5}$ and NO_2 annual mean concentrations air pollution data were extracted at 20m grid resolution and intersected with the latest Output Area (OA) layer from the Office of National Statistics (ONS)[75] for the Greater London area (a total of 25,053 OAs). Each concentration grid point within each OA was further averaged at OA level.

Population-weighted average concentration (PWAC): Population-weighting was done at LSOA (Lower Super Output Area) and Ward level in the case of the mortality burden and impact calculations, respectively. The OA averaged concentrations were multiplied by the population aged 30 plus for each gender and the resulting population-concentration product summed across all OAs in each LSOA and Ward and then divided by the LSOA and Ward population, respectively. The LSOA and Ward population-weighted means were then used directly in the health impact calculations across all LSOA and Wards in London (This process allows one health calculation per LSOA or Ward rather than calculations in each separate OA).

Previously, burden calculations were based only on concentrations of $PM_{2.5}$ (COMEAP, 2010). The new COMEAP report considers whether there is an additional burden or impact from nitrogen dioxide or other pollutants with which it is closely correlated. The method considers both pollutants together, as correlations between the pollutants mean that health studies in the population for either pollutant alone, actually overlaps with the effects of the other pollutant.

Burden calculations are a snapshot of the burden in one specific year, assuming that concentrations had been the same for many years beforehand. They are not suitable for calculation in several successive years as they do not have a mechanism for allowing the number of deaths the year before to influence the age and population size the following year as the lifetables used in impact calculations do. The current (2019) burden and mortality impacts calculations update the 2010 calculations in Walton et al (2015) with both the new methodology in COMEAP (2018a) and new input data for 2019.

[70] https://data.london.gov.uk/dataset/london-atmospheric-emissions-inventory-2013
[71] London Atmospheric Emissions (LAEI) 2016 - London Datastore
[72] https://consultations.tfl.gov.uk/environment/air-quality-consultation-phase-3b/user_uploads/supporting-information-document-updated-12.12.17.pdf
[73] https://www.london.gov.uk/sites/default/files/london_environment_strategy-_draft_for_public_consultation.pdf
[74] PM2.5 in London: Roadmap to meeting WHO guidelines by 2030 | London City Hall
[75] Statistical GIS Boundary Files for London - London Datastore

Appendix 8 Local Authority population, total deaths from all causes, range of mortality burden (deaths) for $PM_{2.5}$ and NO_2 and mean fraction of mortality attributable to $PM_{2.5}$ and NO_2 in 2019.

Results are presented as an upper and lower range based on the multi pollutant exploratory method.

Local Authority	Population	Total deaths (all causes)	Min Mortality Burden ($PM_{2.5}$ and NO_2)	Max Mortality Burden ($PM_{2.5}$ and NO_2)	Mean Fraction (%) of mortality attributable to $PM_{2.5}$ and NO_2
Barking and Dagenham	112817	1196	84	97	7.6
Barnet	237392	2377	177	201	7.9
Bexley	152358	2030	139	162	7.4
Brent	194987	1695	133	149	8.3
Bromley	214539	2633	172	204	7.1
Camden	148202	1121	99	109	9.2
City of London	5336	39	4	4	10.1
Croydon	234684	2460	168	196	7.4
Ealing	208672	1926	147	165	8.1
Enfield	196590	1999	142	164	7.6
Greenwich	165076	1538	113	129	7.9
Hackney	159657	1051	86	96	8.7
Hammersmith and Fulham	110435	904	74	83	8.7
Haringey	163007	1158	90	101	8.2
Harrow	154615	1459	102	118	7.5
Havering	161093	2372	149	178	6.9
Hillingdon	178404	1941	135	155	7.5
Hounslow	162861	1510	114	128	8.0
Islington	130719	1058	90	100	9.0
Kensington and Chelsea	103440	801	70	77	9.2
Kingston upon Thames	106433	1070	76	87	7.6
Lambeth	188880	1399	112	126	8.5
Lewisham	179928	1491	111	127	8.0
Merton	129272	1204	87	100	7.8
Newham	187014	1271	98	111	8.2
Redbridge	177858	1699	124	142	7.8
Richmond upon Thames	129096	1190	86	98	7.7

Local Authority	Population	Total deaths (all causes)	Min Mortality Burden ($PM_{2.5}$ and NO_2)	Max Mortality Burden ($PM_{2.5}$ and NO_2)	Mean Fraction (%) of mortality attributable to $PM_{2.5}$ and NO_2
Southwark	181281	1327	109	121	8.7
Sutton	129996	1481	101	118	7.4
Tower Hamlets	163630	1039	88	97	8.9
Waltham Forest	163151	1371	102	116	8.0
Wandsworth	194946	1475	115	129	8.3
Westminster	156281	1091	100	110	9.6

Appendix 9 Actions for Londoners to mitigate against air pollution

Travel

- If possible walk, cycle or take public transport rather than travelling by car, and choose less polluted routes, for example by using the GLA's Clean Air Route Finder.
- If you need to drive:
  - ensure that your car is not wasting fuel by regularly checking oil levels and tyres are not flat
  - use eco driving techniques as advised by the Energy Saving Trust [76]
  - avoid idling your engine when stationary
  - consider joining a car club
- If you are buying a car:
  - avoid older diesel cars, as they tend to be more polluting than petrol models
  - buy the most efficient and cleanest vehicle that you can. Look for the car's Euro standard – this is the air pollution standard that the vehicle was constructed to meet, ranging from Euro 1 (worst) to Euro 6 (best). Note, following the ULEZ expansion, diesel cars must be Euro 6 or will be subject to ULEZ daily charge if in the expanded zone.
  - consider purchasing an electric car and benefit from road tax and congestion charge exemption, cheaper fuel costs and government subsidies. From 2030 it will no longer be possible to buy a new conventional internal combustion engine car.
  - Consider if you really need to own a car and if it would be more economical to join a car club

At work

- Develop travel plans to encourage and support employees to use public transport, walk or cycle
- Consider changes to reimbursement arranges that incentivise uptake of more active modes of travel.
- If employees must drive as part of their jobs, organise eco-driving training for them
- Install workplace energy efficiency measures, including replacing old boilers[77]
- Freight operators are encouraged to sign up to TfL's Freight Operator Recognition Scheme which encourages safe and sustainable driving and maintenance practices
- Buy, or hire, the cleanest vehicles available [78]

[76] http://www.energysavingtrust.org.uk/Transport/Consumer/Fuel-efficient-driving
[77] www.green500.co.uk
[78] www.travelfootprint.org

At home

- Turn down the central heating when possible
- Install home energy efficiency measures
- Avoid installing polluting wood-burning stoves (and only use the cleanest approved fuels) and avoid burning garden or domestic waste
- reduce use of household sprays, air fresheners and other aerosols, and always follow product instructions
- if possible, avoid or reduce activities that produce particulate matter such as using open solid-fuel fires or candles and always keep the room well ventilated during these activities
- reduce damp and condensation and prevent mould by:
    - using background ventilation (such as trickle vents, or whole-house mechanical ventilation systems)
    - using mechanical ventilation (such as extractor fans), and opening windows where possible and safe to provide temporary increased ventilation
    - avoiding moisture-producing activities (such as air-drying clothes) indoors if possible, or improving ventilation if these cannot be avoided
    - repairing sources of water damage and ensuring that residual moisture is removed

More advice for improving indoor air quality at home can be found in the NICE guidance.

Appendix 10 LEDNET/ ADPH Recommendations for action to clean up London's air

In light of the COVID-19 pandemic, the Association of Directors of Public Health (ADPH) London and London Environment Directors' Network (LEDNET) have revised their joint position on air quality.[79] They provided the following recommendations for action by a wide range of actors and decision-makers, at national and local levels, to clean up London's air:

- To advocate for at least 2.5% of UK annual GDP to be spent on tackling air quality and climate change in the UK.
- Capitalise on behavioural changes on active travel during COVID-19 pandemic, protect Londoners, particularly children and young people from exposure to poor air quality, and promote further inclusive active travel.
- Support a London-wide shared narrative and campaign on air quality and public health impacts to change perception on how they contribute to air pollution.
- Restrict driving fuelled by petrol or diesel and support cleaner alternatives by supporting schemes such as the ULEZ and scrappage schemes. In addition, support local schemes such as restricted and emissions-based parking, low emissions zones, school streets and Low emission neighbourhoods. Finally, build better walking and cycling infrastructure.
- Support retrofitting schemes of London's residential properties to reduce fuel poverty, address health issues caused by inefficient housing and green the economic recovery from the COVID-19 pandemic.
- Use public sector procurement and social value action to reduce our own contribution to air pollution, particularly by moving faster towards ultra-low and zero emissions vehicle fleets.
- Speak with one voice as boroughs to secure the resources and powers needed to reduce air pollution and protect the health of our residents

[79] https://adph.org.uk/networks/london/wp-content/uploads/2021/03/ADPH-London-LEDNet-Air-Quality-Joint-Position-full.pdf

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Hackney

Health in Hackney Scrutiny Commission 29th June 2022 **City and Hackney ICP/ Place Based Partnership - update**	Item No **7**

PURPOSE

The Commission has regularly discussed the development of the new Integrated Care System in North East London over the past years as has the INEL JHOSC.

NEL ICS which replaces the 7 CCGs in east London will go live in two days, on 1 July. This update focuses on the local element - the Place Based Partnership - and how that will interact with the new NHS NEL structure.

OUTLINE

Within the Health and Care Act 2022, there is an expectation that *Place Based Partnerships (PBPs)* are formed within each Integrated Care System and there is one ICS for Barking & Dagenham, Havering, Redbridge, Waltham Forest, Newham, Tower Hamlets, City of London and Hackney. The Place Based Partnerships provide a key role in driving integration, connecting with communities and addressing local health inequalities.

The attached report provides an update on the *City and Hackney Place Based Partnership* in the context of the NHS reforms which take effect on 1 July with the creation of *NHS North East London.*

Attending for this item will be

Nina Griffith, Director of Delivery for City and Hackney Place Based Partnership, LBH-NHS NEL.

Also invited:
Dr Stephanie Coughlin, Partnership Clinical Lead, City & Hackney, NHS NEL
Dr Kirsten Brown, Primary Care Clinical Lead, City & Hackney, NHS NEL

ACTION

The Commission is requested to give consideration to the briefing.

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City and Hackney ICP / Place-based Partnership

June 2022

Context and Introduction

- These slides provides an update on the City and Hackney Place Based Partnership in the context of the NHS reforms which take effect on 1st July 2022

- Within the legislation, there is an expectation that Place Based Partnerships (PBPs) are formed within each ICS. These provide a key role in driving integration, connecting with communities and addressing local health inequalities. City and Hackney is now one of 7 PBPs within North East London.

- Health and Care Services in City and Hackney have had a formal partnership structure in place for a number of years. The new legislation means that, from 1st July 2022, there will be some changes to this. Some of these are superficial, such as name changes to reflect the language in the policy guidance, some are more significant such as formally breaking down previous divides between commissioners and providers. Over time, we hope that the legislation and related white papers to enable stronger collaboration at place.

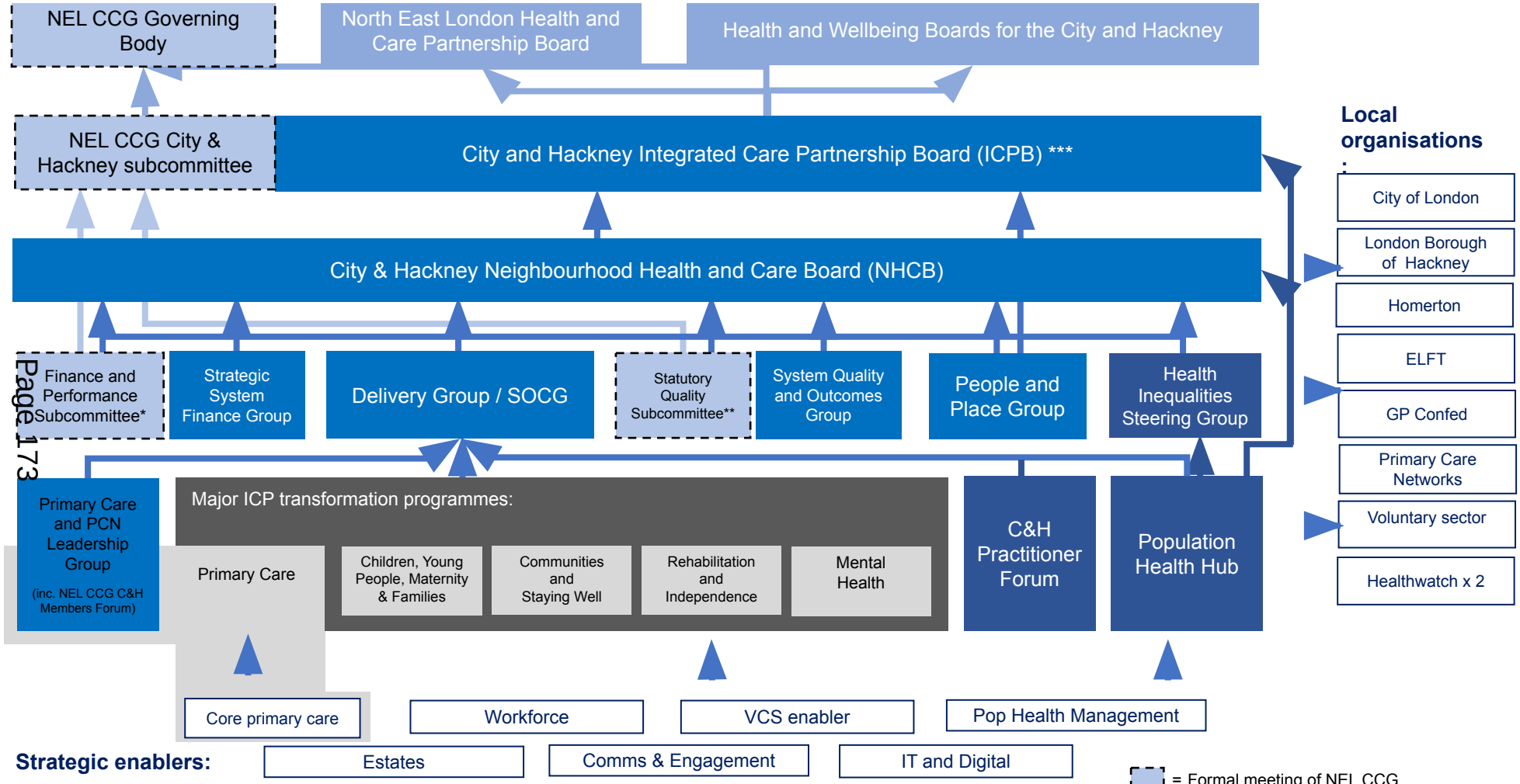
- The legislation has provided a useful juncture for us to further build and strengthen our partnership in order to deliver improved outcomes for our local population.

- All of the NEL CCG staff are being transferred to the NEL Integrated Care Board – NEL CCG will no longer exist from 1st July. There will still be a City and Hackney team within the NEL ICB (as there is within the NEL CCG).

- It is worth noting that as part of the new legislation the Barking&Dagenham, Havering and Redbridge (BHR) and Tower Hamlets, Newham and Waltham Forest (TNW) multi-borough structures are being scaled back to enable each of these boroughs to form their own PBP.

- This will be an evolving picture over the next few years, and there is still a lot of detail to work out.

Reminder of the City and Hackney Integrated Care Partnership operating model (developed in 2021)



*= **Finance and Performance Subcommittee** exercises NEL CCG statutory duties and operates with delegated authority from the NEL CGG City and Hackney Subcommittee

** = **Quality Subcommittee** exercises NEL CCG statutory duties

*** = The **Integrated Care Partnership Board** operates under a 'committees in common' structure with sub-committees from both the City of London Corporation and the London Borough of Hackney, allowing for delegated decision making for pooled budgets.

Developments for City and Hackney

- City and Hackney's Integrated Care Partnership Board (ICPB) will, from September change its name to the **City and Hackney Health and Care Board (CHHCB).** It will continue to be chaired by a member from both City and Hackney.

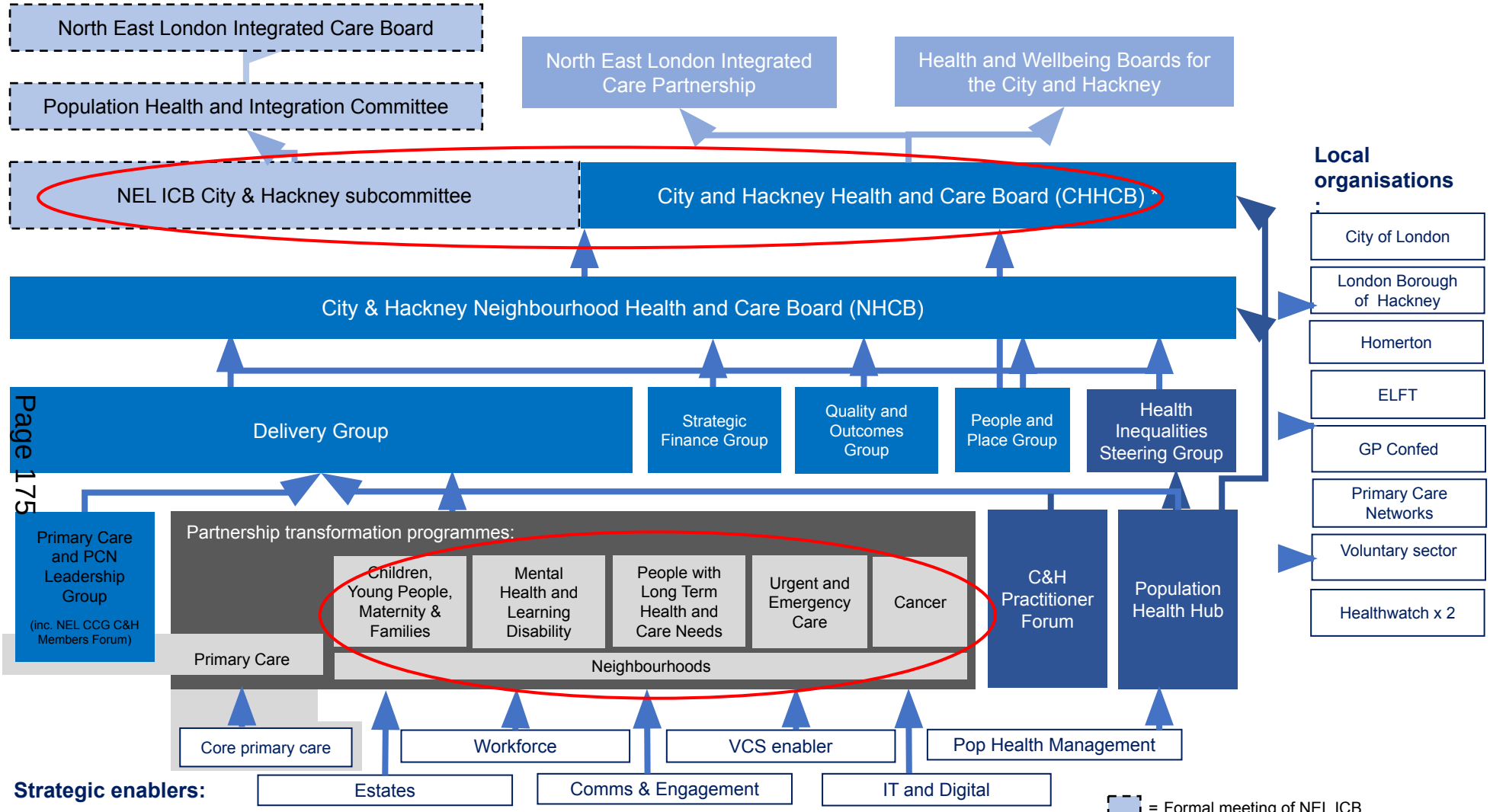
- We have used the transition to the ICS as a juncture to review and strengthen our own partnership. This has included refreshing our partnership strategic priorities, and considering how we can work more effectively together.

- A key element to this has been strengthening the link between the CHHCB and the Health and Wellbeing Board; the CHHCB have formally adopted the Hackney Health and Wellbeing Board strategic priorities a part of the refresh of their strategy (see page 6)

- Partners in City and Hackney have been using these strategic priority areas to re-align our transformation programme resources to ensure delivery of an Integrated Delivery Plan

- Key appointments have been made to support the partnership, including formalising the Place Based Leader being within the remit of the incoming Homerton CEO (Louise Ashley), the appointment of a Partnership Clinical Lead (Stephanie Coughlin) and Partnership Delivery Director (Nina Griffith). Catherine Pelley, who was the Chief Nurse at the Homerton is supporting the partnership until Louise starts in the autumn.

City and Hackney's proposed Place-based Partnership governance within NEL ICS



Strategic enablers:

- The **City and Hackney Health and Care Board** operates under a 'committees in common' structure with sub-committees from both the City of London Corporation and the London Borough of Hackney, allowing for delegated decision making for pooled budgets.
- Red circle highlights changes post 1st July

= Formal meeting of NEL ICB relating to City and Hackney PBP

= Formal meeting of the City and Hackney Place-based Partnership

= Support meeting / function to the City and Hackney Place-based Partnership

Strategic focus areas for the City and Hackney Place-based Partnership (Spring 2022)

"Working together with our residents to improve health and care, address health inequalities and make City and Hackney thrive"

Reducing health inequalities

Giving every child the best start in life (often by recognising the role of families)

Improving mental health and preventing mental ill-health

Preventing and, improving outcomes for people with long-term health and care needs

Population health priority outcome areas

Increasing social connection

Ensuring healthy local places

Supporting greater financial wellbeing

Joining up local health and care services around residents and families' needs

Taking effective action to address racism and other discrimination

Supporting the health and care workforce

Cross-cutting approaches

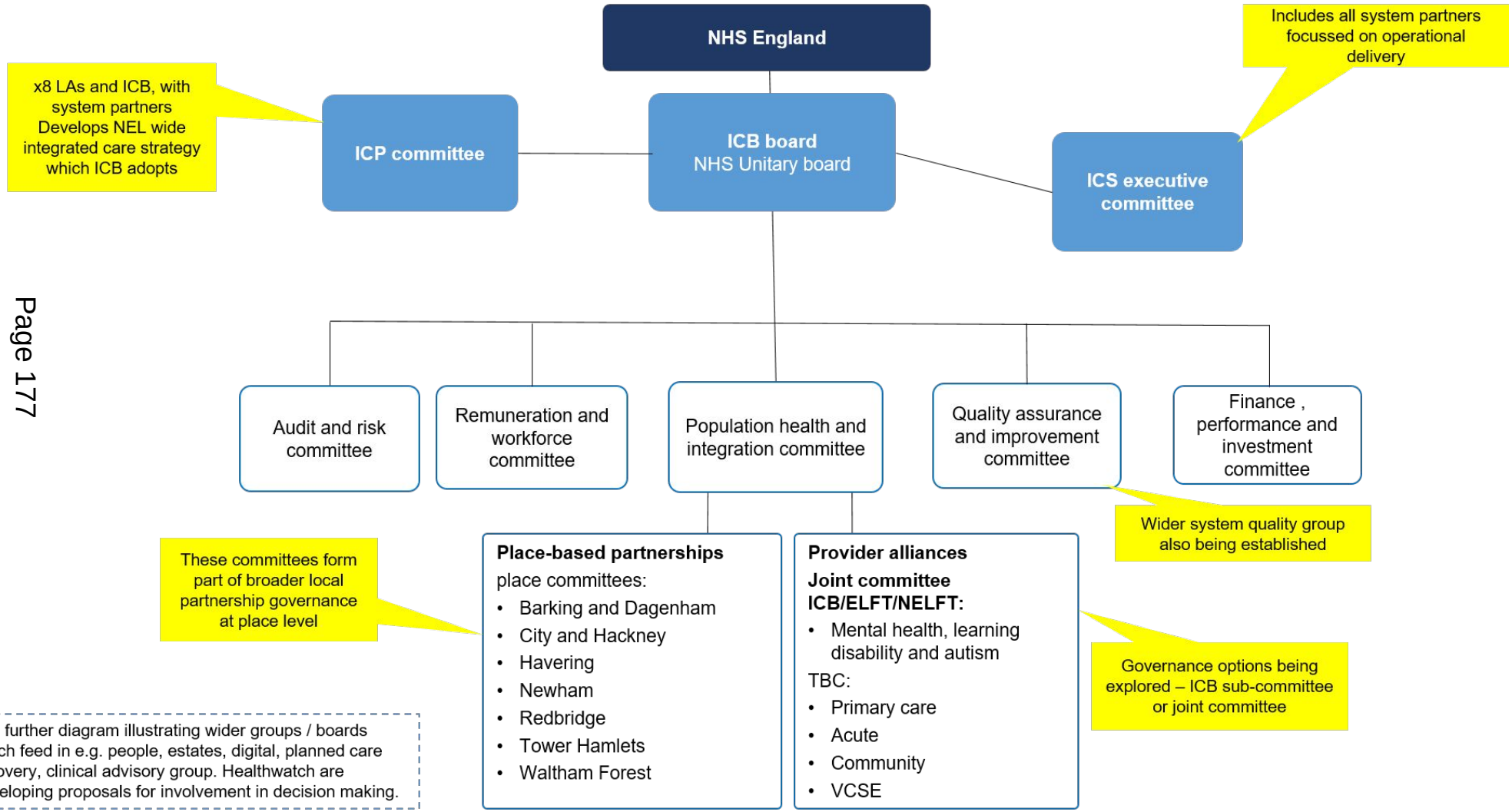
=Hackney HWB focus area

= Hackney HWB specific 'lenses': (approaches to reducing health inequalities)

= NEL ICS four partnership priority areas

= reflecting LTP response / long term C&H partnership ambitions / Neighbourhoods Programme vision

Proposed governance of North East London Integrated Care System



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Hackney

Health in Hackney Scrutiny Commission 29th June 2022 **Responses to draft Quality Accounts – FOR NOTING ONLY**	Item No **8**

OUTLINE

In June each year the Commission is asked to submit a response to the draft *Quality Account* which local NHS Trusts must submit to NHS England/ NHS Improvement covering the previous financial year. The reports follow a nationally mandated template.

If there are outstanding issues we invite senior officers to discuss these at the Commission and they provide a response to the issues we have raised.

Please find attached the response to Homerton Healthcare's Quality Account 2021/22.

The response to St Joseph's Hospice's Quality Account will be tabled. Please note that as St Joseph's is not an NHS Trust but provides services to the NHS it not formally required to submit a report but does so as part of its own Quality Assurance process. Its deadline is later.

ACTION

The Commission is requested to note the Quality Account letters.

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Overview & Scrutiny

Health in Hackney Scrutiny Commission
Hackney Council
Town Hall
Mare St,
London E8 1EA

Reply to: jarlath.oconnell@hackney.gov.uk

21 June 2022

Ms Breeda McManus
Chief Nurse and Director of Governance
Homerton Healthcare NHS Foundation Trust
Trust Offices
Homerton Row
London E9 6SR

Email to: *breeda.mcmanus1@nhs.net* *and* *matthew.grantham1@nhs.net*

Dear Breeda

Response to Homerton University Hospital NHS Foundation Trust's draft Quality Account for 2021/22

Thank you for inviting us to submit comments on the Draft Quality Account for your Trust for 2021/22. We are writing to provide our insights arising from the scrutiny of the Trust's services over the past year at the Commission. We would also like to welcome you to your new post.

We've been grateful to the outgoing Chief Executive, Tracey Fletcher, for her continued support of Overview & Scrutiny both as the CE of our local acute trust and in her leadership role as Place Based Leader for City & Hackney. We look forward to continuing that close relationship with her successor, Louise Ashley, when she takes up her role in the autumn.

Over the past year at committee, we've questioned your CE and/or senior directors on the following:

- HUH Pathology Partnership with Barts Health and Lewisham & Greenwich trusts
- Treatment pathways for Long Covid
- Responding to last year's Quality Account comments
- Plans for the redevelopment of the St Leonard's site
- Roadmap to Net Zero Carbon at HUH
- Update on Covid and Elective Recovery at HUH
- How will City & Hackney's place-based system operate within NEL ICS

We do appreciate the Quality Account exercise as it allows us also to step back from individual issues we raise with you over the course of the year and take an overview of the quality of your services. The Commission Members take a great interest in the performance of our key local acute trust, and we're pleased to learn about some of your key achievements over the past year.

We're pleased that the overall CQC rating for both the Homerton University Hospital and Mary Seacole sites remain unchanged at 'Good' and commend you on being rated 'outstanding' on the 'responsive' and 'well led' metrics.

We support the 7 quality priorities you've identified for 22/23 and commend that, following a stakeholder engagement process, they will be in place for a 2-year reporting cycle to ensure that sufficient and sustainable progress can be achieved with them.

We noted that because of Covid, your performance against some national operational standards did suffer, along with the rest of the country. For example, the percentage of A&E patients admitted in less than 4 hrs fell from 93% to 86.9% and there was a rise in *clostridium difficile* cases from 10 to 16, where the target was 12. However, cancer waiting time targets have remained stable, as have the performance against targets for 6 and 18 weeks wait for IAPT. We are pleased to note that despite the immense challenges of Covid in 20/21 and the efforts to then rebuild elective care in 21/22, the Trust continued to perform strongly against a wide range of national quality assurance indicators.

In the context of previous discussions, we've had at the Commission we are also pleased to note the following:

a) We welcome (p.25) that a targeted piece of work has taken place to improve *ethnicity coverage reporting*. We had picked up on this issue last year and are pleased to note the progress. We are pleased too that data cleansing will ensure that the Trust holds one record for every patient which can be viewed by other trusts and organisations to ensure safe and effective clinical care.
b) We are pleased with the progress on '*Speak Up Safely*' (p.32). The appointment of two *Freedom to Speak up Guardians* in the Trust (one an executive lead and one a Non-Exec Director as per national guidance) is to be welcomed. They will have dedicated time to promote speaking up and support staff who do so
c) On the issue of *Rota Gaps* (p.32) we also welcome the work being done by the *Guardian of Safe Working,* put in place since the implementation of the new junior doctor's contract.

Over the coming year we will wish to discuss with you the building back of elective care and how the Trust's involvement in the 'Acute Provider Collaborative' with Barts Health and BHRUT, as part of the North East London ICS, will impact on patient care in Hackney, as well as other issues.

Yours sincerely

Councillor Ben Hayhurst
Chair of Health in Hackney Scrutiny Commission

cc Members of Health in Hackney Scrutiny Commission
Cllr Christopher Kennedy, Cabinet Member for Health, Adult Social Care, Voluntary Sector and Culture
Dr Sandra Husbands, Director of Public Health, City and Hackney

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Hackney

Health in Hackney Scrutiny Commission 29th June 2022 **Minutes of the previous meeting**	Item No **9**

OUTLINE

Attached please find draft minutes of the meeting held on 16th March 2022.

Matters Arising from 16 March 2022

Action at 5.8

ACTION:	*Chair to write to NHSEL expressing concern about the withdrawal of funding for the Medicines Optimisation Scheme in City and Hackney.*

We are awaiting an update on whether this was resolved locally.

ACTION

The Commission is requested to agree the minutes and note the matter arising.

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Hackney

London Borough of Hackney
Health in Hackney Scrutiny Commission
Municipal Year: 2021/22
Date of Meeting: Wed 16 March 2022 at 7.00pm

Minutes of the proceedings of the Health in Hackney Scrutiny Commission at Council Chamber, Hackney Town Hall, Mare Street, London E8 1EA

Chair	**Councillor Ben Hayhurst**
Cllrs in attendance	**Cllr Kam Adams, Cllr Emma Plouviez and Cllr Peter Snell**
Cllrs joining remotely	**Cllr Kofo David and Cllr Michelle Gregory**
Apologies	**Cllr Deniz Oguzkanli**
Council officers in attendance	**Chris Lovitt, Deputy Director of Public Health, City and Hackney**
Other people in attendance	**Dr Kirsten Brown, Primary Care Clinical Lead for C&H, Partner at Spring Hill Practice and The Lawson Practice** **Richard Bull, Programme Director Primary Care, NEL CCG** **Dr Mark Rickets, Co-Chair ICPB and Health and Wellbeing Board** **Laura Sharpe, Chief Executive, GP Confederation** **Caroline Millar, Chair, GP Confederation** **Dr Deborah Colvin, Partner, Spring Hill Practice/Lawson Practice** **Dr John Robson, Clinical Reader in Primary Care Research and Development and Clinical Lead for the Clinical Effectiveness Group at the Queen Mary University of London** **Malcolm Alexander, Chair, Healthwatch Hackney** **Dr Vinay Patel, Clinical Director for Woodberry Wetlands and Springfield Park PCN and Chair of Local Medical Committee** **Dr Ellie Jacob, Clinical Director, Hackney Downs PCN** **Dr Haren Patel, Joint Clinical Director for Hackney Marshes PCN and GP Lead for Prescribing, NEL CCG City & Hackney** **Yogendra Parmar, Chief Support Officer, Local Pharmaceutical Committee** **Rozalia Enti, Medicines Management Team, NEL CCG City and Hackney** **Cllr Chris Kennedy, Cabinet Member Health, Social Care and Leisure** **Cllr Yvonne Maxwell, Mayoral Adviser for Older People**
Members of the public	45 views
YouTube link	**The meeting can be viewed at:** https://www.youtube.com/watch?v=blM7k09Cf9M
Officer Contact:	**Jarlath O'Connell, Overview and Scrutiny Officer** jarlath.oconnell@hackney.gov.uk; 020 8356 3309

Councillor Ben Hayhurst in the Chair

1 Apologies for absence

1.1 An apology for absence was received from Cllr Oguzkanli. Apologies also received from Dr Kathleen Wenaden, Dr Sandra Husbands and Helen Woodland.

2 Urgent items/order of business

2.1 There were no urgent items and order of business was as per the agenda. The Chair stated that this would be the last meeting of this administration prior to the elections.

2.2 The Chair thanked Jon Williams who would be departing as Executive Director of Healthwatch to begin a new engagement role at NEL CCG in Tower Hamlets, for his service to the borough and for his always positive engagement with the work of the Commission.

3 Declarations of interest

3.1 It was noted that Cllr Snell was Chair of the Trustees of DABD UK.

4 Developments in GP services - the next five years

4.1 The Chair stated that most of this meeting would be devoted to this discussion and the purpose was to to gain a better insight into the strategic issues which are driving primary care locally and to look forward to what GP services might look like in five years' time. There would be 8 short presentations and there would be a Q&A after the first 4.

4.2 Members gave consideration 5 briefing papers:
4b Note from NEL CCG Primary Care (to follow from Richard)
4c Note from GP Confederation
4d Note from Office of PCNs
4e Note from Clinical Effectiveness Group at QMUL
4f Note from Healthwatch Hackney (primary care section of draft strategy)

4.3 The Chair stated that unfortunately the current Chair of PCNs Dr Kathleen Wenaden had to give late apologies. He welcomed to the meeting:

Dr Kirsten Brown (**KB**), Primary Care Clinical Lead for C&H Partner at Spring Hill Practice and The Lawson Practice
Laura Sharpe (**LS**), Chief Executive, GP Confederation
Dr Deborah Colvin (**DC**), Partner at Spring Hill Practice and The Lawson Practice
Dr John Robson (**JR**), Clinical Reader in Primary Care Research and Development and Clinical Lead for the Clinical Effectiveness Group at the Queen Mary University of London
Malcolm Alexander (**MA**), Chair, Healthwatch Hackney
Richard Bull (**RB)**, Programme Director Primary Care, NEL CCG
Dr Vinay Patel (**VP**), Clinical Director for Woodberry Wetlands and Springfield Park PCN and Chair of Local Medical Committee
Dr Ellie Jacob (**EJ**), Clinical Director, Hackney Downs PCN
Dr Haren Patel – joint Clinical Director for Hackney Marshes PCN
Caroline Millar, Chair, GP Confederation.

4.4 Dr Kirsten Brown, Primary Care Clinical Lead for C&H gave a presentation on how GPs are commissioned and the different types of contracts - GMS, PMS and APMS. The majority are on GMS, 8 are on PMS and 5 are on APMS. All new contracts are APMS contracts now. She clarified that GMS and PMS are in perpetuity and are very similar. PMS contracts were being phased out as they had been equalised with GMS. The APMS contracts were just for 15 years and have to be re-procured. The majority of Practices are Partnerships but AT Medics runs Trowbridge and Hurley Group runs Allerton Rd Practice. She also detailed how the 'core contract' worked and the Carr-Hill funding formula. She also explained how Directly Enhanced Services and Local Enhanced Services operated.

4.5 Richard Bull (NEL CCG) detailed how the CCG handled the contract management on behalf of NHS England.

4.6 Laura Sharpe(CE of GP Confederation) gave a presentation on local commissioning arrangements on top of the national arrangements. C&H has the greatest number of additional services in East London, delivered via the GP Confed, resulting in an additional £10m a year going into local Practices. She explained the switch from having a reactive to a more proactive model of service in supporting for example those with Long Term Conditions. She explained the principle of 'total population coverage' which underlines the Confed's approach and the background to setting it up. She described a model of 'Protected Learning Time' which they were now rolling out in Practices. She added that they have become a voice for Primary Care in the local system.

4.7 Dr Deborah Colvin (GP) gave a verbal update on the Partnership Model and on the local 'provider' landscape which she stated was generally very turbulent at present. 32 of the 39 GP Practices were partnerships. She detailed how after two years of a lot of patients not going to the doctor sickness levels had therefore increased. There had also been a significant increase in mental health issues. The number of GPs, nurses and admin staff had fallen behind. Many GPs were choosing to go into Locum work instead because of work-life balance and stress issues. This reduced the continuity of connection with a GP. It could also deskill GPs somewhat. Estates continued to be an issue with Practices running out of space. The push for more digital appointments ran the risk of deskilling doctors as they really needed to physically examine patients and this drive also hit the most vulnerable patients who are the most digitally excluded. On the Partnership Mode,l she stated that it was invaluable as it saved lives and saved resources and should not be discarded. Salaried GPs in large APMS organisations often do not feel as valued, she added. One of the disadvantages of the Model however was that it was difficult to act effectively on poor performance.

4.8 Dr Ellie Jacob, a PCN Clinical Director, gave a detailed presentation on PCNs (in place of current Chair, Dr Wenaden) it covered: *national context, local provider landscape, general practice funding, commissioning*. She explained the structure, role and function of the 8 PCNs in City and Hackney. She detailed the performance targets or QOFs for PCNs and the struggle with recruitment, which was a national issue.

4.9 The Chair commented that the two key PCN functions were performance management and additional services. EJ concurred and replied that being a voice for Primary Care was a key part of the Clinical Director role in PCNs as well as collaborating with the Neighbourhoods System.

4.10 A Member asked about harmonising consistency of care across 8 PCNs and on what GP Mental Health Support was available and on the expanding use of First Responders and whether PCNs could better facilitate this.

4.11 EJ replied on balancing quality across PCNs and role vis-a-vis the Confed. If NHSE decided that certain things come through PCNs rather than GP Confed then that might pose a problem. Re paramedics and first responders, there was a clearly defined list of roles which they can recruit to it would have to be a paramedic. Dr Vinay Panel (Clinical Director of a PCN and LMC Chair) stated that the two organisations had different agendas and different roles. It was important to celebrate that Primary Care in City and Hackney had such a track record of close partnership working and close engagement with the Neighbourhoods Team. There was scope for the Confed to help the PCN achieve their joint targets even if it was not performance managing them. Capacity was a huge problem in primary care and NHSE plans were going ahead on the promise of additional GPs, which then weren't secured. They need to help patients understand what GPs do but also what other primary care providers can do also.

4.12 The Chair asked about workforce issues and the Confed's bespoke recruitment system. VP replied that it was a great proposal but many Practices hadn't signed up yet as they're over worked. Many GPs were reducing their stress and their hours and this was perpetuating the problem.

4.13 The Chair asked about Estates Development and how the Council might assist. Cllr Kennedy (Cabinet Member) explained how the Council had worked with the NHS on this in the past. He stated that it had taken a great effort and a very long time to get Lower Clapton and Spring Hill Practices into their new premises.

4.14 KB responded on the equality issues around access to GPs. The over emphasis on fast or convenient access as the main focus was not where our main priority should be, she stressed, as some people's needs will be greater than others. The push for digital access had created inequality of access and a 'digital inverse-care law' so that those who might need the care more aren't able to get it. We need to reframe this and there has to be continuity of care, she added..

4.15 LS replied that with the CCG-the Confed-the PCNs-the LMC there was a danger of fragmenting the strategic positioning of primary care locally. These strands need to be pulled together so that we do not damage primary care even by accident.

4.16 Dr Mark Rickets commented on the investment put into primary care over the years and the number of patients per GP in City & Hackney vis-a-vis Barking & Dagenham. An FTE GP in City & Hackney has 1550 patients whereas in Barking & Dagenham they have 2450.

4.17 A Member questioned how the additional roles under the PCNs are managed and supported. She also commented that GPs must spend so much time in meetings because of all these structures. EJ outlined the roles and how they're managed e.g. Physios employed by the Homerton yet they work part time in a clinic in St Leonard's

and part time in the Practices. Another model was Practices employing people via the PCNs e.g. pharmacists. Nurse Associates and Physician Associates and Health and Wellbeing Coaches and Social Prescribers were new roles which exist as part of this very mixed model.

4.18 The Chair commented that the digital divide issue affecting vulnerable/elderly patients was coming up frequently in councillors' case work and wondered whether a better system can be worked out locally to improve this.

4.19 Dr Jon Robson (Clinical Effectiveness Group at Queen Mary University of London) gave a detailed presentation on quality improvement in primary care and the work they do with City and Hackney Practices in particular. It covered: *How do we measure effectiveness; Hypertension care as an example; The right method; Inequality indicators; Greatest impact = numbers x effectiveness; the McKinsey hospital model is not an effective way forward.* He explained for example that prevalence will vary considerably depending on factors outside of Practices control so there will always be outliers, not because of failings in a Practice. He added that inequality indicators need to be analysed at a CCG level not at practice level. He concluded that we need “to look under the light at what we need to do and choose wisely”. He added that there needs to be more done to identify and target renal failure in east London, that Childhood immunisation and control of blood pressure need to be the key deliverables and there was a need to prioritise the highest risk groups. Generally targets were crude measures and you need to incentivise behaviour change instead.

4.20 Malcolm Alexander (Healthwatch Chair) gave a verbal presentation on what residents think of GP services. He outlined some key concerns such as the loss of face to face appointments and a rise in triaging by receptionists and non clinical staff. The digital divide e.g. in Stamford Hill was a big challenge. They would be doing Enter and Views to hear the voices of local people. He added that Southgate and Whiston Rd Practices has closed, with 6k patients being transferred, and impact on the Lawson Practice must be significant. Healthwatch wanted to see much stronger PPGs. Most people have no knowledge of PCNs, he added, and patients won’t understand why they are being seen by people other than GPs. We have to make sure all Practices are registering all patients without demands for ID, he added. Some GP websites are not good enough and need to be improved and he asked that within a PCN area why can’t a patient register with any Practice in that area. The Chair thanked Healthwatch for highlighting the access issue. MA added that a Complaints Charter will be available to patients at all Practices.

4.21 Richard Bull (CCG) gave a verbal presentation on the process of retendering or list dispersal when a Practice closes and he detailed the reasons for each recent closure. They take each situation on its own merits and there is an established process however each case goes through a proper governance model. The decision to disperse or reprocure involves looking at a wide range of factors such as list size (raw and weighted), contract duration, type, reason for expiry, history of the practice and they complete a deep-dive into Practice performance. They do an analysis at an early stage of the capacity within a 1 mile radius of the closing practice and as well as

a capacity audit they look at viability if the list size is below average. Any Practice below 6K is not economically viable according to NHSE guidance. Premises considerations are also important so if there is no guarantee of a premises for the subsequent 15 years of an APMS contract, then it would be unlikely to get a successful reprocurement.

4.22 A Member asked about the digital divide challenge with elderly and vulnerable people. She also asked about the efforts to support the over 80s. JR replied that elderly patients deserved full support to the end of life and there was no judgement involved. His analysis was merely to highlight the proportion of care required by this cohort.

4.23 KB added that within the PCNs and GP Confed there were a number of additional contracts to provide proactive care for vulnerable patients and they set aside dedicated time for this. In response to Healthwatch, she added that there was a key need to improve communications with patients. EJ added that the advance of online access would actually serve to free up phone access for those who need that the most, and this was their intention.

4.24 The Chair concluded the item by thanking all the contributors and adding that Hackney was very fortunate with the high quality of its GP Practices and Members were very appreciative of all the work they do. He stated that it was very helpful to get an overview and in a year's time he would like the PCNs to provide an update on the progress they have made.

RESOLVED:	**That the report and discussion be noted.**

5 Medicines Optimisation Scheme

5.1 The Chair stated that the Local Pharmaceutical Committee had contacted the Commission expressing concern about plans to end the current arrangements under the Medicines Optimisation Scheme which they say will adversely impact nearly 4000 patients locally. The Commission last dealt with this issue in March 2018 and had expressed concern then about planned reductions in these services then.

5.2 Members gave consideration to:

a) Briefing *NHSE Commissioned Medicines Optimisation Scheme* from
b) Briefing from Local Pharmaceutical Committee

5.3 The Chair welcomed for this item:

Yogendra Parmar (YP), Chief Support Officer, Local Pharmaceutical Committee
Rozalia Enti (RE), Medicines Management at NEL CCG City and Hackney

5.4 YP took Members through his briefing paper which outlined their concern that NHSE was terminating the scheme which had funded dosette boxes and blister packs and it would now only be funded for the much smaller cohort identified as having a need

under the Equality Act and carers and care agencies among others had expressed concerns about this.

5.5 YP clarified to the Chair that there were c. 500 patients in Hackney who might still be supported under the Equality Act but there was another c. 3000 who would lose out. Members noted that the scheme had been discontinued in the vast majority of London boroughs. The Chair asked whether the pharmacies were backfilling the funding by requesting 7 day prescriptions and using this as a lever. YP explained that in other boroughs, where it's not funded, there is now a mixed economy in operation and the scheme is funded informally from general practice via use of 7 day prescriptions or the pharmacies absorb the loss so it was difficult to properly benchmark the impacts. The Chair observed that unfortunately it was typical of how central government worked - to provide funding for a new scheme for a time, then to withdraw it and then expect professionals to pick up the shortfall, and this happened in other public sector spheres. The Chair invited the CCG (who are not the commissioners here) to explain their position on the issue.

5.6 Rozalia Enti (NEL CCG) detailed the background and history of the scheme to provide context to NHSE London's decision. She stated that the NEL CCG City and Hackney had been pushing back on NHSEL to not end the scheme without proper mitigation being put in place. The CCG had started to facilitate the evolution to a new system by analysing the underlying data and providing guidance to the local pharmacies. She explained that some GPs were of the view that as many of the patients did not fall under the Equality Act definition, pharmacies should therefore not be requiring 7 day prescriptions for them. She clarified that the formal national position of NHSE was that pharmacists should not be routinely using 7 day prescriptions to backfill this loss of income. She added too that there was a misconception that having a dosette box would always make patients compliant with the proper use of their medicines. There was a role for them when patients had very complex medicine schedules. In using dosette boxes however errors can go unnoticed and when wrongly utilised the medicines optimisation system can have the effect of actually reducing the therapeutic effect of a medicine. NHSEL's view was that they were overused, she added.

5.7 YP agreed that providing blister packs was not always ideal but in reality the current system which operates locally generates this demand for them and if NHSEL withdraws the support this would leave an unfunded supply which would not be sustainable for community pharmacies. They wanted to highlight the potential risk to patient care, as care agencies and others had done, and they did not want to see a precipitous or unmanaged change to the arrangements.

5.8 The Chair questioned the expectation that pharmacies' core contract should backfill this funding and stated that he would, if needed, write to NHSEL to express local concern about the risk to patients if this is not properly resolved. He stated that Members had sympathies on both sides but he would echo their concerns to NHSEL and urge the local partners to come up with a solution that appreciates both the efforts of community pharmacies here while not over burdening local GPs.

ACTION:	**Chair to write to NHSEL expressing concern about the withdrawal of funding for the Medicines Optimisation Scheme in City and Hackney.**

RESOLVED:	**That the report and discussion be noted.**

6 Covid-19 update from Public Health

6.1 The Chair stated that he had asked Public Health to provide a further update on the Covid-19 situation in the borough. The Commission had been receiving these at each meeting during the course of the pandemic. He welcomed to the meeting: Chris Lovitt (**CL**) Deputy Director of Public Health for City & Hackney.

6.2 Members gave consideration to a TABLED briefing report *Covid-19 update to HiH 16 March 2022.* CL advised that as there had been a surge in cases since the previous week he was therefore presenting an even more updated set of slides than in the circulated paper. The most up to date data was now on the Covid dashboard at Coronavirus data | Hackney Council. This indicated a 49% increase in cases overall and a 51% increase for the 60+ age group. Hospitalisation rates had also risen and one of the challenges now was that immunity from the booster infections was waning and current levels of natural immunity do not provide sufficient protection against the current sub variant. The numbers getting vaccinated had also eased off significantly. He added that they now only have 1 or 2 weeks of full data before the end of mass free testing (and reporting) which will have the effect of lowering Public Health's ability to track the epidemic as they will only have hospital admissions and the ONS studies to work with. He added that while the end of legal requirements was welcomed by many, the epidemic had not passed and the same Public Health messages must still be heeded. These messages had been crowded out in the media. He urged the public to continue with such measures as mask wearing, frequent hand washing and attention to ventilation. These local figures were part of an unfortunate national trend and we could be stirring up significant difficulties for ourselves over the next few weeks, he added. He clarified that the current spike was down to a new sub-variant of Covid called Omicron BA.2.

6.3 The Chair thanked Public Health for the update and stated that this was sobering news.

RESOLVED:	**That the reports be noted.**

7 Minutes of the previous meeting

8.1 Members gave consideration to the draft minutes of the meeting held on 9 February 2022 and the Matters Arising.

RESOLVED:	**That the minutes of the meeting held on 9 February be agreed as a correct record and that the matters arising be noted.**

8 Health in Hackney Work Programme

8.1 Members gave consideration to the updated work programmes.

RESOLVED:	**That the Commission's work programmes for 21/22 and the rolling work programme for INEL JHOSC be noted.**

9 Any other business

9.1 There was none.

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Hackney

Health in Hackney Scrutiny Commission 29th June 2022 **Work Programme for 2022-23**	Item No **10**

OUTLINE

Attached please find a first outline of the work programme for 2022-2023. This will be populated as Members agree the new items and it will be a rolling document, updated regularly. It already contains some existing commitments and regular annual items.

Work programme suggestions come from various sources:

Members of the Commission
Other Members
Health and care partners
Cabinet Members/Group Director/Directors
Results from the Annual Scrutiny Survey of residents which is currently live and can be viewed here:
https://consultation.hackney.gov.uk/overview-and-scrutiny/overview-and-scrutiny-public-consultation/consult_view/

Partners and stakeholders are written to inviting suggestions and Cabinet also meet with the Scrutiny Panel (the Chairs and Vice Chairs of the Commissions) to discuss the work programmes for the commissions for the forthcoming year.

The Chair also holds slots in the work programme as it is common to be asked to respond to urgent or topical issues.

ACTION

The Commission is requested to give consideration to items for the work programme for the coming year.

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Health in Hackney SC - Rolling Work Programme 22/23 as at 22 June '22

Date of meeting	Item	Type	Dept/Organisation(s)	Contributor Job Title	Contributor Name
29 June 2022	**Election of Chair and Vice Chair**				
deadline: 20 June	**Appointment of reps to INEL JHOSC**				
	The science on the health impacts of poor air quality: expert briefing	Briefing	Imperial College, Faculty of Medicine	Senior Lecturer in Public Health	Dr Ian Mudway
			Adults, Health and Integraton	Deputy Director of Public Health	Chris Lovitt
			Climate, Homes, Economy	Land Water Air Team Manager	Dave Trew
	City & Hackney ICP / Place based partnership	Briefing			Nina Griffith
	Response to draft Quality Accounts	For Noting only			
26 July 2022	**tbc**				
deadline 15 July	**tbc**				
	Healthwatch Hackney Annual Report 21/22	Annual item	Healthwatch Hackney	Chair	Malcolm Alexander
21 Sept 2022	**City & Hackney Safeguarding Adults Board Annual Report**	Annual item	CHSAB	Independent Chair	Dr Adi Cooper OBE
deadline 12 Sept			CHSAB	Head of Service, Safeguarding Adults	John Binding
16 Nov 2022					
deadline: 7 Nov					
5 Dec 2022					
deadline: 24 Nov					
8 Feb 2023	**Cabinet Member Question Time: Cllr Kennedy**	Annual CQT session	LBH	Cabinet Member for Health, ASC, Voluntary Sector and Culture	Cllr Chris Kennedy
deadline: 30 Jan					

15 Mar 2023					
deadline: 6 Mar					
	Health and Wellbeing Strategy 2022-26 one year on	Update on outputs	Public Health	Director of Public Health	Dr Sandra Husbands
26 April 2023					
deadline:17 April					

ITEMS AGREED BUT NOT YET SCHEDULED

Possible date					
	Overview of capital build proposals in Adult Social Care	Briefing	Adult Services	Group Director Adults Health and Integration	Helen Woodland
				Director Adult Social Work and Operations	Ann McGale
Postponed from 1 May 2020	**Tackling Health Inequalities: the Marmot Review 10 Years On**	**SCRUTINY IN A DAY**	Public Health and others tbc	Director of Public Health	Dr Sandra Husbands
	Implementing the new system and Code of Practice for 'Deprivation of Liberty Safeguards'		CHSAB	Head of Service, Safeguarding Adults	John Binding