Air Quality
Action Plan 2022–2027
in Summary

THE ROYAL BOROUGH OF
KENSINGTON
AND CHELSEA

Foreword

Improving air quality remains a key priority for Kensington and Chelsea Council. In 2021, it was incorporated into a new Council Green Plan, alongside other environmental goals to become carbon neutral, protect and enhance biodiversity, tackle fuel poverty and minimise waste. All of which have a significant impact on the health and wellbeing of those who live and work in, visit or travel through our Borough.

Huge improvements in air quality have been achieved across Kensington and Chelsea since 2015; between 2016 and 2019, 64% more of the borough is predicted to have met legal limits for nitrogen dioxide. Despite this, like other areas of London, nitrogen dioxide remains an issue along the borough's busier roads and particulate matter continues to affect wider areas. Consequently, reducing emissions of these pollutants as well as our exposure to poor air quality remains a great challenge locally, across London, nationally and internationally.

The impacts of air pollution on our health and well-being, assets and environment are becoming more widely known and understood. The UK Health Security Agency, previously Public Health England, stated in 2018 that poor air quality was the largest environmental risk to public health in the UK, as long-term exposure can cause chronic conditions such as cardiovascular and respiratory diseases as well as lung cancer, leading to a reduced life expectancy[1]. In December 2020, the coroner ruled that the death of Ella Adoo-Kissi-Debrah was as a result of severe asthma and exposure to poor air quality and is a stark reminder, if one is needed, of why improvements are essential.

As a Local Authority, we have a responsibility to our residents, neighbours, and future generations to take action. We must also ensure that in addressing the main sources of air pollution we do not inadvertently undo progress in other areas such as climate change. The Council will therefore continue to develop policies that find synergies to address air quality, climate change, biodiversity and tackle health inequalities.

We are all facing the challenge of creating a healthier, cleaner, and greener environment. I hope that residents and businesses will continue to join and support us to deliver this Action Plan and our aims to reduce emissions and exposure, increase resilience and influence change. I would like to thank all those who have worked with us in the past, and we look forward to working with you again, as well as with new partners, as we strive to deliver improvements in air quality over the coming years.

Cllr Johnny Thalassites

Lead Member for Planning, Place and Environment

[1] UK Government. Guidance: Health Matters: Air Pollution. 2018. (LINK)

What do we want to achieve?

Our vision

This is simple; we want the air within Kensington and Chelsea to be healthy for all to breathe.

The whole of Kensington and Chelsea is designated an Air Quality Management Area (AQMA) due to exceedances of the statutory National Air Quality Objectives (NAQOs) for nitrogen dioxide (NO_2) and particulate matter (PM_{10}).

We have a statutory duty to meet the National Air Quality Objectives (NAQOs) and in October 2019, we also committed to work towards the 2005 World Health Organisation (WHO) Air Quality Guideline Values. We want to achieve these for nitrogen dioxide and particulate matter (PM_{10} and $PM_{2.5}$), borough wide, by 2030.

Targets by 2030

Pollutant	Metric	Guideline Value (2005)
NO_2	1-Hour Mean	200 µg/m^3
	Annual Mean	40 µg/m^3
PM_{10}	24-Hour Mean	50 µg/m^3
	Annual Mean	20 µg/m^3
$PM_{2.5}$	24-Hour Mean	25 µg/m^3
	Annual Mean	10 µg/m^3

We are mindful that in September 2021the WHO produced new more stringent Air Quality Guideline Values. The production of these provides a clear mandate for the creation of a healthier, cleaner and more sustainable borough, knowing that at even very low concentrations, pollution can have an impact on health and we must consider how we strive to achieve these.

Our objectives:

1. To work with our whole community for a healthy, clean and sustainable borough, as set out in our Council Plan 2019-2023.
2. To narrow the gap to reduce health inequalities in areas affected by poor air quality and deprivation.
3. To improve awareness and understanding of the health impact of poor ambient and indoor air quality on health and how exposure can be reduced whilst at home or about in the borough.
4. To reduce emissions from existing buildings (including schools and hospitals) as well as those from demolition, construction, and the operation of developments, new and old.
5. To encourage active travel, walking and cycling in place of private car usage.
6. To target pollution sources that the Council has control over, whilst lobbying and working with other partners to reduce sources that we do not have control over both within and outside the Borough, including the government, GLA, TfL, NHS, our residents and other key stakeholders to ensure a joined-up approach.

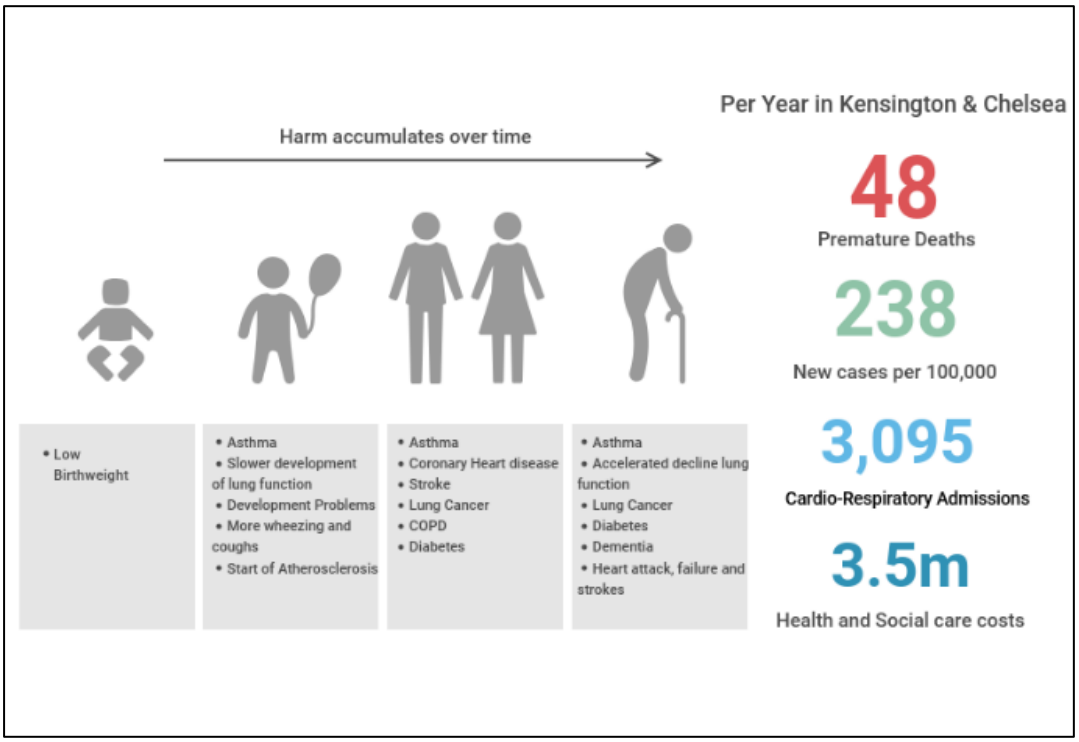
Health impacts of air pollution

Short and long-term exposure to air pollution can have a significant impact on health.

Short-term exposure (over hours or days) to elevated levels of pollution, for example from London wide pollution episodes, can affect lung function, exacerbate asthma, increase respiratory and cardiovascular hospital admissions and mortality.

Long-term exposure (over years or lifetimes) to NO_2, PM_{10} and $PM_{2.5}$ overall reduces life expectancy, mainly due to cardiovascular and respiratory diseases and lung cancer (see Figure 1). It is estimated to have resulted in the equivalent of 70-77 years of life lost in the borough each year[2] and 48 premature deaths. While this affects the whole borough, our modelling for 2022 suggests air pollution concentrations are particularly acute along our busiest roads and railways and is broadly higher in the east and south of the borough.

Figure 1: Health Impact Over Time



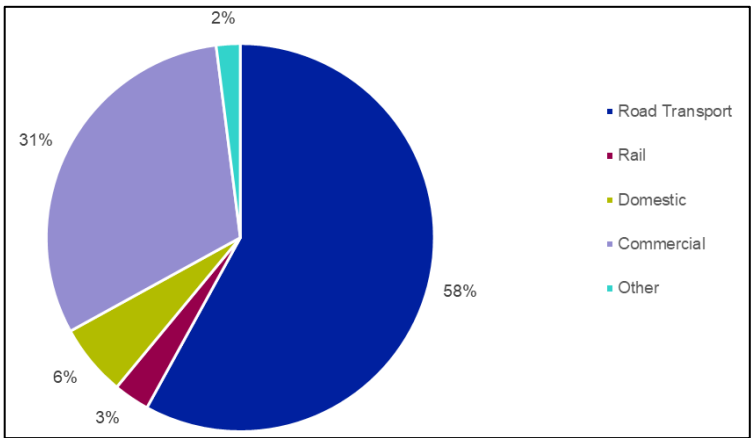
Air pollution particularly affects the most vulnerable, including children and older people, and those with heart and lung conditions - although during more serious London wide pollution episodes anyone can be affected. We know that more people have these conditions living in deprived areas linked with inequalities [3,4] and so, vulnerable residents in the least affluent areas of the borough are disproportionately affected by air pollution. It is also said that that whilst children, young adults and households in poverty are most affected by poor air quality, it can be more affluent households, businesses and vehicles passing through the borough who are responsible for producing the greatest proportion of pollution. This inequality needs to be addressed.

[2] Imperial College London. London Health Burden of Current Air Pollution and Future Health Benefits of Mayoral Air Quality Policies. 2020. (LINK)
[3] Environmental Equity, Air Quality, Socioeconomic Status and Respiratory Health, 2010.
[4] Air Quality and Social Deprivation in the UK: An Environmental Inequalities Analysis, 2006.

What are our main sources of air pollution?

In 2019, the Council commissioned work to identify the main sources of NOx and particulate matter. This used the GLA's latest London Atmospheric Emissions Inventory (LAEI) from 2016, which identifies the amount of pollution that is produced from sources within London.

Figure 2: Main sources of NO_x emissions

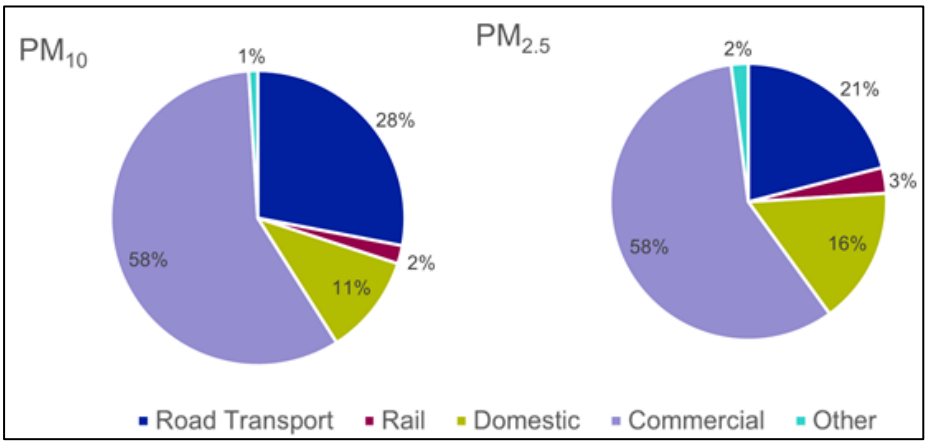


In 2016 the LAEI identifies that the main source of NO_x emissions was from road transport (58%), followed by commercial emissions (31%). Commercial emissions are dominated by 'heat and power generation' (90%), of which most is derived from gas combustion (86%) (see Figure 2).

For sources of particulate matter (PM_{10} and $PM_{2.5}$) within the borough, commercial emissions form 58% of PM_{10} and $PM_{2.5}$, see Figure 3. For PM_{10}, commercial emissions are dominated by cooking (51%) and construction (41%), while $PM_{2.5}$ emissions are dominated by cooking (75%), construction (13%) and heat and power generation (10%).

Road sources form 28% and 21% of emissions for PM_{10} and $PM_{2.5}$ respectively. For PM_{10} road related sources are relatively evenly spread between exhaust, resuspension and break, tyre, and road wear. For $PM_{2.5}$, exhaust forms a greater proportion of emissions, however, the largest part still comes from non-exhaust emissions, demonstrating a complete move to electric vehicles will not totally solve the air quality problem.

Figure 3: Main sources of emissions of PM_{10} and $PM_{2.5}$



It is important to appreciate that a significant background contribution to NOx and particulates levels comes from outside of the borough, London and the UK. For example, away from main roads, typically 90% of PM_{10} and $PM_{2.5}$ is derived from sources outside the borough, this drops to about 70% at busy main roads. The weather is a key factor in the transport of these pollutants and action to tackle these pollutants is required at a local, national and international level.

What is air quality like now?

The Council has been monitoring air quality for over 20 years. We have automated continuous monitoring at five sites. These monitors provide the most accurate data and all results can be viewed at www.airqualityengland.co.uk. Figure 4 identifies the 'Site Type' of each monitoring location, for example where a site is representing conditions next to busier more polluted roads or at a less polluted urban background location, and what pollutants are monitored at each. In addition, monitoring is undertaken using passive diffusion tubes at over 80 other sites which provide monthly average concentrations of nitrogen dioxide. Overall, our data shows that air quality has been gradually improving over the years.

Figure 4: Automatic Monitoring Sites

Site ID	Site Name	Site Type	Pollutants Monitored
KC1	All Saints College, North Kensington	Urban Background, LAQN & AURN Affiliate Site	NO_2, CO, PM_{10}, $PM_{2.5}$, SO_2, O_3
KC2	Natural History Museum, Cromwell Road	Roadside	NO_2, PM_{10}, $PM_{2.5}$
KC3	Knightsbridge	Kerbside	NO_2
KC4	Chelsea Old Town Hall	Roadside	NO_2
KC5	Earl's Court Road	Kerbside	NO_2, PM_{10}

Nitrogen Dioxide

Annual average concentrations of nitrogen dioxide have been reducing over the years and in 2020 all sites met the NAQO of 40ug/m^3. Of course, 2020 was not a typical year, with the impact of lockdowns and fall in traffic from the end of March, but it goes to demonstrate how quickly air quality can improve when sources of air pollution are removed or reduced.

In 2021, while a lockdown was still in place during the first three months, NO_2 concentrations remained low. Initial results suggest that since lockdown ended, concentrations have started to climb back up. By the end of June 2021, at some sites, concentrations had almost returned to pre-pandemic levels.

Progress with meeting short term objectives can be found in the full version of the Air Quality Action Plan.

Figure 5: KC1-KC5 Annual Mean NO_2 Concentrations 2014-2020

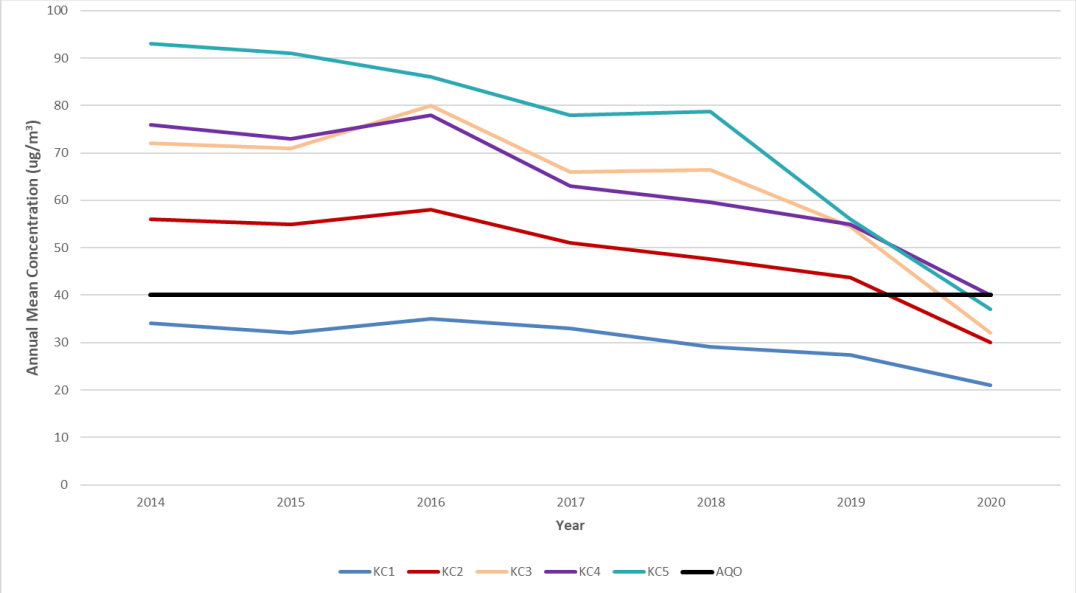
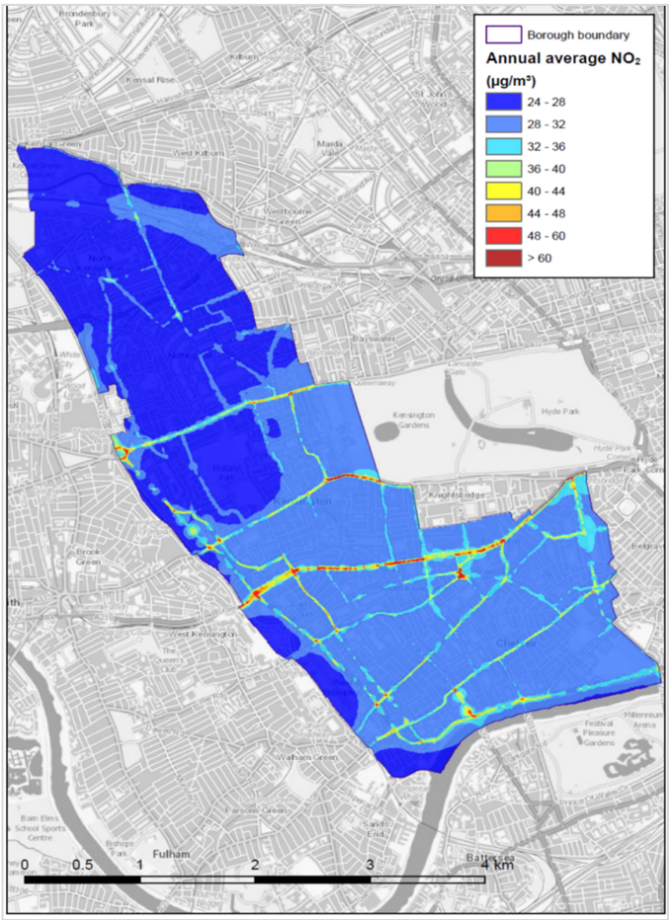


Figure 6 Modelled concentrations of nitrogen dioxide across the Borough in 2022



Above, we refer to monitoring data from specific sites. In addition, it is helpful to model data; though this has some limitations as assumptions have to be made. However, it is a valuable tool and helps identify likely concentrations across the whole borough.

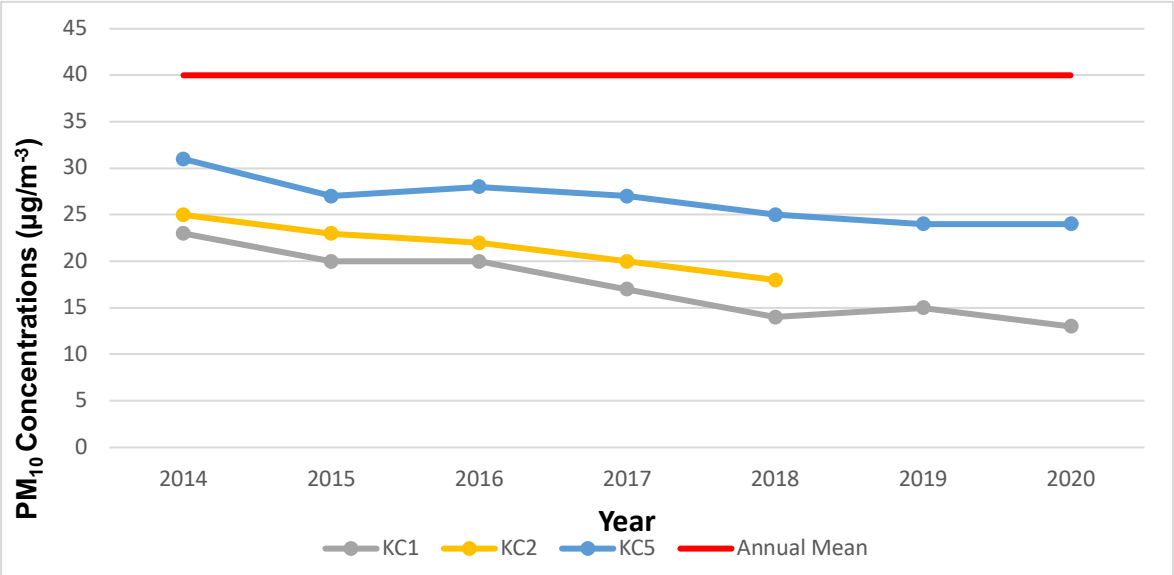
Modelling shows the area that meets the annual mean NO_2 objective is predicted to have increased from 25% in 2016 to 89% in 2019, an improvement of 64%. This area is expected to rise again to 91% in 2022 now the extended ULEZ has come into force. Much of the remaining area predicted to exceed the NAQO falls within roadways and on pavements where the annual average objective does not apply and for pavements, as public exposure is short term.[5]

[5] Box 1.1 Examples of where the AQ objectives apply, Technical Guidance 2016 (LLAQM.TG(16)), Mayor of London.

Particulate Matter

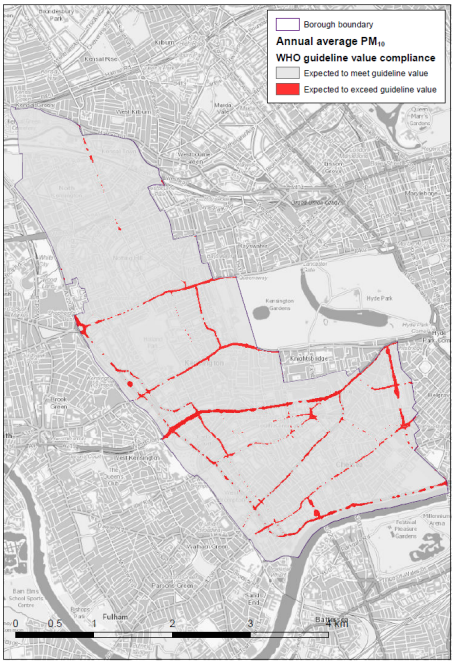
Figure 7 presents the annual mean PM_{10} concentrations for the period of 2014-2020 for KC1, KC2 (in part) and KC5. There has been a gradual decline in concentrations at all sites between 2014 and 2019, although there was no further reduction at KC5 between 2019 and 2020. This is in contrast to the reductions that occurred with concentrations of NO_2 in 2020, as mentioned above. All sites meet the annual mean NAQO of 40ug/m^3. Information about short term exposure can be found in the full version of the Air Quality Action Plan.

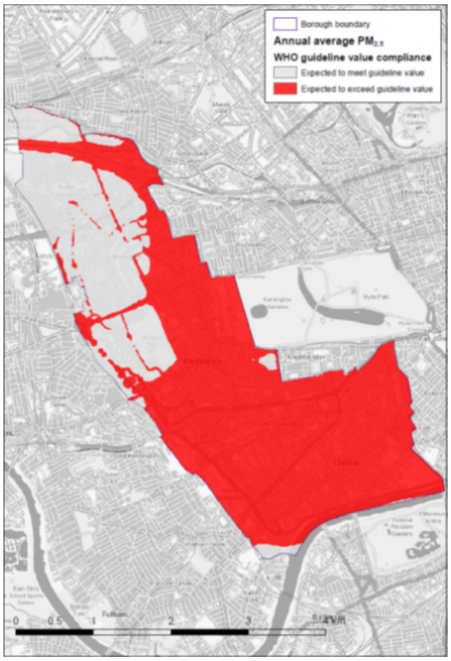
Figure 7: KC1-KC5 Annual Mean PM_{10} Concentrations 2014-2020



In terms of the more stringent annual average 2005 WHO air quality guideline values, monitoring and modelling suggests this is met across most of the borough for PM_{10}, but that for $PM_{2.5}$ there are exceedances of the guideline value across about two thirds of the borough, please see Figure 8.

Figure 8: Areas (in red) predicted to exceed WHO Guideline values for PM_{10} and $PM_{2.5}$





How do we plan to improve it?

Below is a summary of the actions the Council will deliver between 2022-2027 to reduce concentrations and exposure to air pollution. It has been developed in recognition of the legal requirement to produce an action plan and work towards meeting air quality objectives under Part IV of the Environment Act 1995 and the requirements of the London Local Air Quality Management process. More detail about each measure can be found in the full version of the Plan. It replaces the previous joint Air Quality and Climate Change Action Plan which was in place between 2016-2021

Our themes
The actions within our new plan fall under six broad themes:

- Monitoring and other core statutory duties: Maintaining, and where necessary, expanding monitoring networks is critical for understanding where legal limits are exceeded, and what measures are effective to reduce pollution.
- Public health and awareness raising: Protecting those most susceptible to air pollution, including children and older people, the disadvantaged and those with health conditions is a priority for the Council. Increasing awareness can drive behavioural change to both lower emissions and reduce exposure to air pollution resulting in health benefits.
- Cleaner transport and active travel: Road transport is one of the main sources of air pollution. We need to incentivise the use of public transport and a change to walking and cycling and encourage a shift from petrol/diesel powered vehicles to electric. We also need to find solutions to address the contribution from freight and last mile deliveries.
- Localised solutions: These seek to improve the environment of local neighbourhoods by implementing tailored measures in specific areas either directly by the Council or through a combination of working in partnership to deliver air quality and behaviour change projects and lobbying to influence others.
- Emissions from developments and buildings: As well as contributing to borough wide emissions of NO_2 and particulates, emissions from buildings can be very significant locally. By working with developers through planning, ensuring effective enforcement, addressing buildings that are producing high emissions and promoting cleaner alternatives, we will continue to tackle these emissions.
- Working in partnership: We understand that we cannot achieve improvements in air quality on our own and we need to identify and work with key stakeholders both within and outside of the borough. We work hard to engage with stakeholders and communities who can make a difference to air quality in the borough.

Our actions

1. **Monitoring and other core statutory duties**:

M is for: MONITORING
M1: Maintain existing automatic monitoring network
M2: Maintain diffusion tube network for monitoring nitrogen dioxide and BTEX diffusion tubes.
M3: Review opportunities for expanding the monitoring network and working with schools and community groups to undertake their own monitoring
M4: Make data easier to access
M5: Produce annual statutory report with update on how action plan is being implemented.

2. **Public health and awareness raising**:

P is for PUBLIC HEALTH
P1: Promote existing air quality messaging services like AirTEXT and City Air
P2: Review existing messaging service and identify how to reach vulnerable groups with tailored action
P3: Develop and embed existing GLA Air quality alert email service
P4: Increase awareness among NHS colleagues about impact of air pollution on health
P5: Sense check – provide annual update on public health action taken
P6: Reduce the need for cars by promoting clean air walking and cycling routes
P7: Produce of an online Cycleways map.
P8: Promote smoking cessation services to reduce smoking at home and the impact on indoor air quality
P9: Support initiatives to improve indoor air quality
P10: Discourage burning of logs and house coal
P11: Engage Canal and Rivers Trust and canal boat owners to convert from wood burning to electric
P12: Support NHS colleagues with audits in hospitals to reduce emissions

3. **Cleaner transport and active travel**:

T is for Transport and active Travel
T1: Reduce emissions from Council Fleet by reducing the number of vehicles and electrifying remainder of fleet
T2: Implement travel hierarchy across the Council to encourage active travel above all else.
T3: Review Grey Fleet and encourage staff members using personal vehicles to switch to electric vehicles and public transport.
T4: Ensure cleaner transport provisions become standard in any Council procurement and lease process.
T5: Bike by default -require zero emission and electric or hybrid vehicles as a default for any courier or taxi booking for people or deliveries.
T6 Cycle Training for children and adults to learn to ride safely and increase confidence.
T7 Maintain monthly public 'Dr Bike' surgeries
T8: Remove parking bays and replace with cycle hangars and tree planting
T9: Install additional Cycle Parking
T10: Build on existing programme of School Streets
T11: Promote and implement STARS School Travel Plan scheme.
T12 Review experimental 20 mph scheme to decide whether it will become permanent.
T13: Work towards no diesel cars parked on our roads by 2030.
T14: Review the provision of electric charging across the Borough and expand the network.
T15: Participate in and expand E-Scooter trial - review success of existing scheme.
T16: Continue to take action to reduce idling engines.
T17: Continue to support the Mayor of London with the implementation of the ULEZ extension
T18: Seek to protect all bus services in the borough and work with TfL to support its programme of upgrades for buses and rapid electrification of the fleet
T19: Assess impact on air quality of any major transport and public realm scheme.
T20a: Ensure Local Plan contains transport policies to enable delivery of car free developments and cycle parking and charging etc.
T20b: Assessment new developments and increase the use of the river for movements of construction and waste where possible.
T21: Support businesses to reduce their emissions from deliveries by use of zero emission vehicles and e-cargo bikes
T22: Carry out study into post Covid19 travel patterns
T23: Upgrade existing cycle routes to provide higher levels of service and improved public realm.
T24: Consider installation of modal filters to facilitate traffic restrictions or segregation where research or evidence suggests benefits
T25: Remove parking bays to facilitate Al Fresco dining

4. **Localised solutions**:

L is for Localised solutions
L1: Improve walking and cycling access to White City - New pedestrian and cycle link under West London Line at Latimer Road
L2: A new cycle route serving communities in Shepherd's Bush, Holland Park and Notting Hill Gate.
L3: Implement Active travel schemes at Kensal Canalside Opportunity Area
L4: Deliver two-way cycling streets in one-way streets to form key links enabling cyclists to access existing Quietway/Cycleway routes.
L5: Provide green man facilities at all signalised junctions.
L6: Work with museums to identify reduction in Museum Delivery and Servicing trips
L7: Work with Schools on installing Green Screens and Green Infrastructure
L8: Work with landowners on large street scape improvements which include greening.
L9: Develop new place-making public realm projects to reduce traffic dominance.
L10: Implement road closures on Portobello Road during Market operating times to improve conditions for pedestrians and shoppers

5. **Emissions from Developments and Buildings**:

E is for Emissions from Development and Buildings
E1: Continue to assess all planning applications for air quality impacts and ensure that emissions from energy and heat sources in new developments are minimised
E2: Ensure emissions from construction are minimised and the cumulative effects of numerous nearby developments are taken into consideration
E3: Ensure that development sites Non-Road Mobile Machinery (NRMM) requirements are understood and enforced through the planning system and the Pan-London NRMM Project
E4: Update the Council's Supplementary Planning Guidance for air quality to reflect new policies and requirements of the Local and London Plan.
E5: Implement and enforce Air Quality Neutral and Air Quality Positive policies
E6: Complete school audits to identify local measures required to reduce sources and exposure to pollution.
E7: Ensure adequate, appropriate, and well-located green space and infrastructure is included in new developments
E8: Ensure that Smoke Control Zones (SCZ's) are appropriately identified and fully promoted and enforced.
E9: Issue authorisations for Chimney Heights for new appliances.
E10: Carry out regular risk-based inspection of dry cleaners and filling stations and ensure authorisations are up to date.
E11: Contribute to the implementation the Council's Climate Emergency Action Plan
E12: Implement Council Housing Action Plan to facilitate the Housing Sustainability and Fuel Poverty Strategy
E13: Replace two existing communal networks powered by gas with the Notting Dale Heat Network which is an integral part of the Lancaster West Estate's Refurbishment Programme

6. **Working in Partnership:**

WP is for Working in Partnership
WP1: Collaboration with GLA and TfL to support working groups and policies that will improve air quality.
WP2: Join other partners (local authorities, London Councils, LEDNET and other organisations (Cross River Partnership) to take action to improve air quality.
WP3: Work with universities to support research and to aid our own understanding of sources and potential mitigation.
WP4: Develop Environmental Steering Group of residents, community groups, voluntary sector, schools, businesses, and academic institutions