Last updated: January 2017

Joint Strategic Needs Assessment

Air Quality

Key facts

- Air quality remains an important Public Health issue in Lambeth, as across London. The main pollutants of concern are: Nitrogen Dioxide (NO_2) and Particulate Matter (PM_{10} and $PM_{2.5}$)

- The main sources of air pollution in Lambeth are: road transport (particularly diesel vehicles), residential and commercial premises, mainly gas boilers used for space and water heating, and construction sites, including dust and machinery emissions

- There is often a strong correlation with inequalities, because areas with poor air quality are also often less affluent

- Air pollution is usually higher along main roads. People living and working close to main roads are likely to be more exposed to air pollutants in the long-term than people working and living further away. In Lambeth areas with the highest exposure to air pollution are: Waterloo Road, Vauxhall Cross, Kennington Oval/Camberwell New Road (A202), parts of Clapham Road and A23 from Brixton to Streatham.

- Air pollution does not affect everybody in the same way. People most vulnerable to poor air quality are: older people, people with chronic respiratory conditions and cardiovascular disease, and young children

- Exposure to air pollution affects residents throughout their lives, from birth to old age. It also contributes to adverse birth outcomes (such as foetal growth restriction, premature labour, infant death) when pregnant women are exposed

- Long term exposure can cause lung cancer, as well as asthma and bronchitis

- Short term high pollution episodes can trigger exacerbation of lung and heart conditions resulting in poorer quality of life and increased deaths and hospital admissions. They also increase the frequency and severity of asthma attacks, especially amongst people living close to busy roads

- The Lambeth Air Quality Action Plan 2017-2022 focuses on reducing emissions of pollutants into the air, reducing exposure to existing air pollution and raising awareness

1. What is air pollution?

The term air pollution is used to make reference to substances in the air that can have harmful effects on human health, welfare, plant and animal life.

In Lambeth, the main air pollutants of concern are nitrogen dioxide (NO_2), arising from NO_X, .and particulate matter ($PM_{10/2.5}$). All combustion processes produce nitrogen dioxide, a gas which is harmful to health in concentrations above recommended limits (National Air Quality Objectives). Particulate matter is a complex mix of non-gaseous particles of varied physical and chemical composition. The number denotes the size of the particle, PM_{10} are particles with a diameter of less than 10 microns (µm) and $PM_{2.5}$ are less than 2.5µm. The smaller the particle the deeper into the lungs it can travel causing more severe health effects.

Transport, domestic and commercial heating, and construction are the main sources of air pollution in Lambeth and in most parts of Greater London.

2. Why is air quality a public health issue?

Air pollution is considered a serious public health issue for the UK. The Department of Health's Committee on the Medical Effects of Air Pollutants (COMEAP) estimated that the burden of PM air pollution in the UK in 2008 was equivalent to almost 29,000 deaths at typical ages and an associated loss of population life of 340,000 life years lost.

Local Health Burden of Air Pollution in Lambeth (per year) – 2013 – Residents 30 years and over

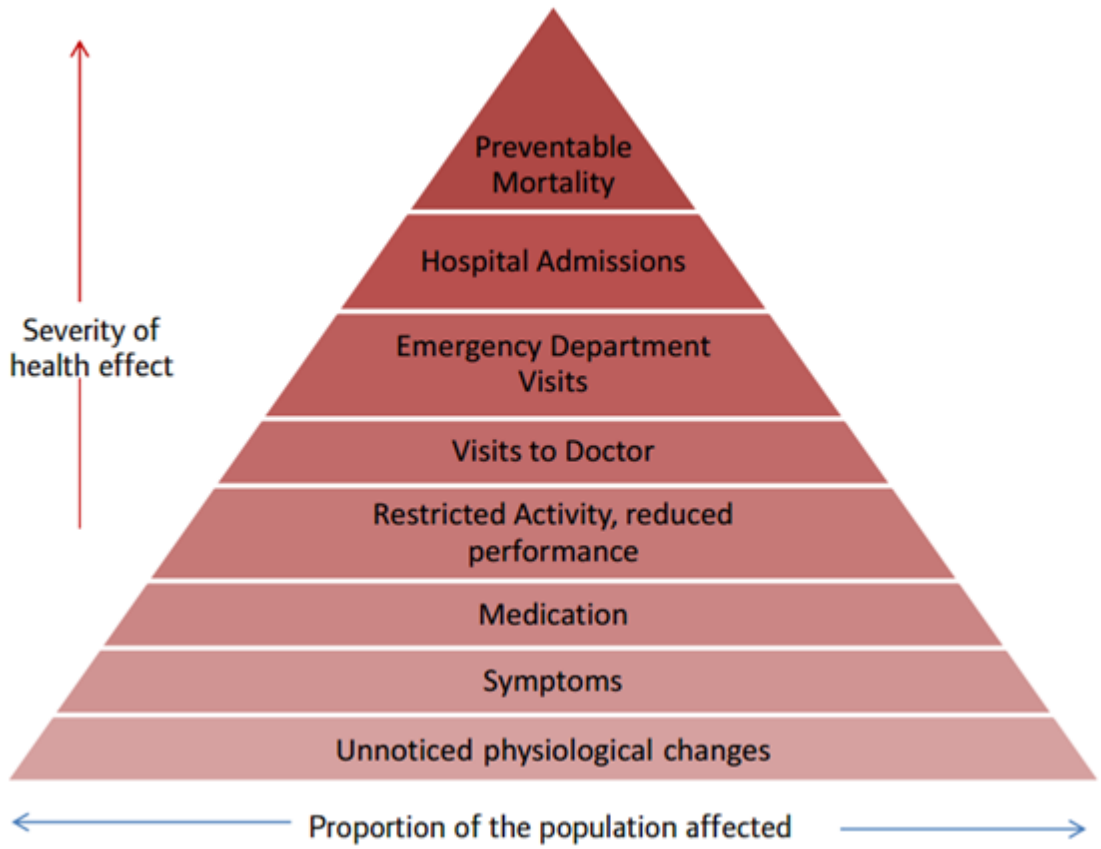
Number of deaths attributable to long term exposure to air pollution:
312 deaths (associated with $PM_{2.5}$ and NO_2)

Number of respiratory hospital admission attributable to PM_{10}:
400 emergency admissions

Number of cardiovascular disease-related hospital admissions attributable to PM_{10}:
351 emergency admissions

(Source: Health Burden in Lambeth attributable to Air Pollution, Mengke Wang, Student at London School of Economics, September 2016)

Long term exposure to poor air quality is linked to lung cancer, heart disease and respiratory diseases. The long term health impacts of air pollution can be represented by a pyramid structure, as shown in the image below.



Source: WHO, 2005

The most vulnerable members of our society such as the very young, the elderly and those with existing heart and lung conditions are most affected by exposure to poor air quality. This can lead to restricted activity, hospital admissions and even premature mortality.

Even short-term exposure to air pollution can exacerbate existing health conditions including cardiovascular and respiratory disease. A close link has been shown between areas of high deprivation and air pollution, research has demonstrated that those living in more deprived areas are exposed to higher concentrations of air pollution.

Children are vulnerable to air pollution from intrauterine to early childhood periods. Exposure during these periods reduces the maximal functional capacity of lungs achieved in adult life and can lead to enhanced susceptibility during adulthood to infection and to the effects of such pollutants as tobacco smoke and those present in occupational exposures. Research shows that infants living in areas with high levels of PM_{10} are at a greater risk of mortality during the first year of life, particularly from respiratory causes.

Cost burden on the NHS and society as a whole is also significant. Central government estimates that in the UK the health impact from poor air quality costs the economy around £15 billion.

3. What are the issues with air quality in Lambeth?

- Lambeth is the ninth most polluted borough in London with an estimated 312 deaths per year caused by exposure to air pollutants

- In 2007 Lambeth declared the whole of the borough an Air Quality Management Area (AQMA) for nitrogen dioxide NO_2 and particulate matter PM_{10}

- Individuals who live or work near busy roads are at higher risk. Additionally, those who spend a lot of time in traffic such as taxi and delivery drivers experience prolonged exposure to harmful pollutants, more so than pedestrians or cyclists

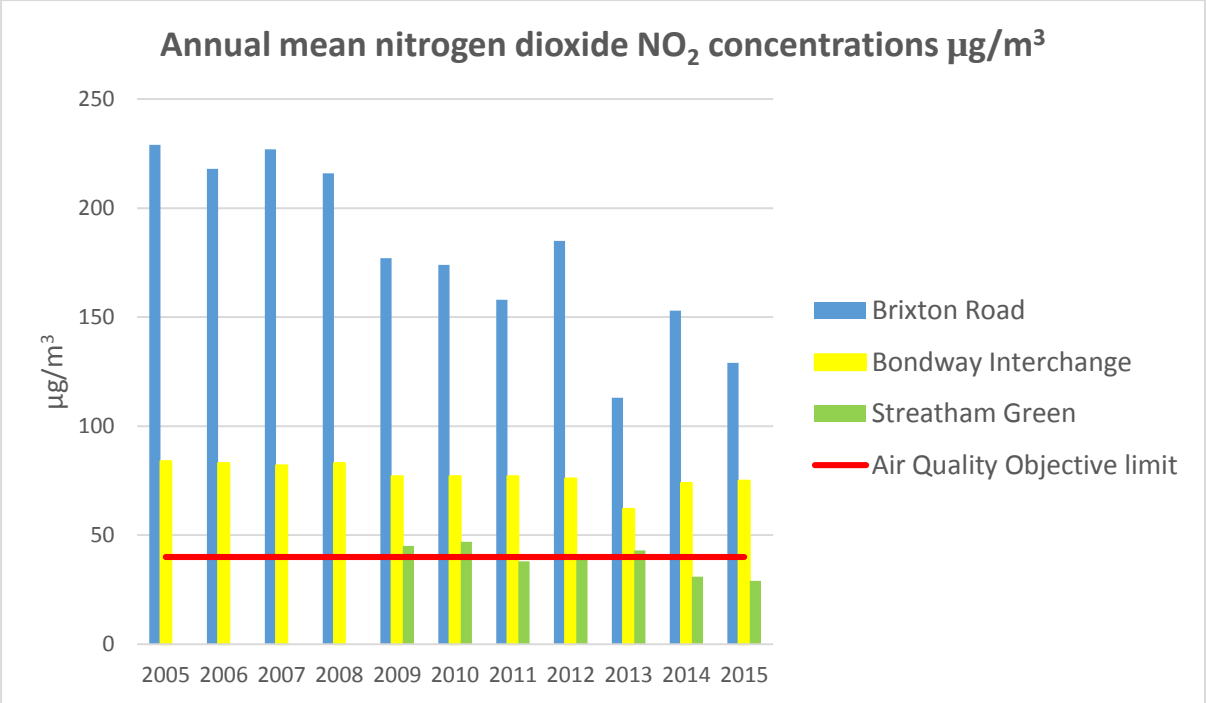
- In Lambeth areas with the highest exposure to air pollution are: Waterloo Road, Vauxhall Cross, Kennington Oval/Camberwell New Road (A202), parts of Clapham Road and A23 from Brixton to Streatham.

- The main source of emissions in Lambeth is road traffic, particularly vehicles with diesel engines. Other significant sources are also: energy use, especially water and space heating, and emissions from construction. In 2012 the International Agency for Research on Cancer (IARC) confirmed diesel fumes to be carcinogenic to humans, a further study in 2013 has shown an association between early exposure to traffic pollution and several childhood cancers. The Health Effects Institute (HEI) panel concluded that the evidence is sufficient to support a causal relationship between exposure to traffic- related air pollution and exacerbation of asthma.

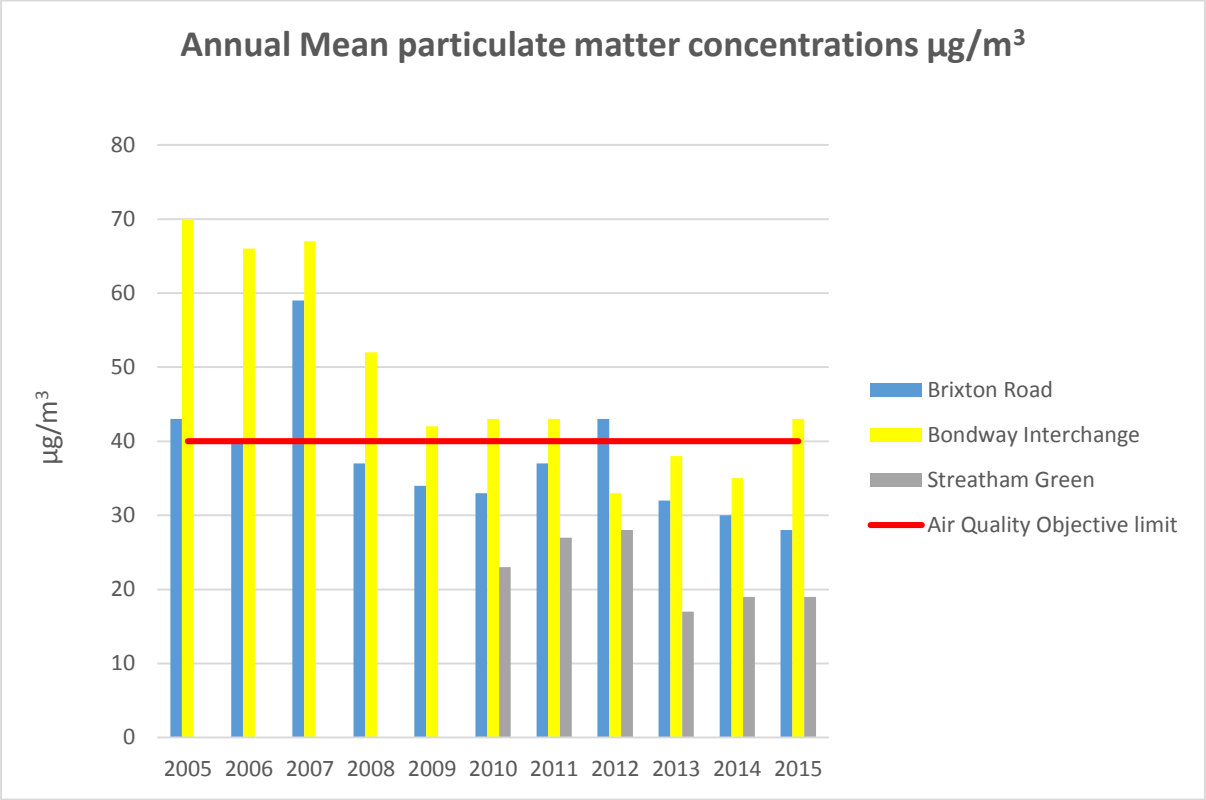
4. How is air quality monitored?

Lambeth continuously monitors air quality in the borough. Further information and reports on the current state of Lambeth's air and long term trends can be found on Lambeth's website www.lambeth.gov.uk/AirQuality.

Lambeth has three automatic monitoring stations in the borough that measure NO_2 , PM_{10} and SO_2. Data from these sites can be viewed on the London Air Quality Network (LAQN) website . Pollutant concentrations have reduced over the last ten years however they remain above the air quality objective limit.



-
-



-

5. What are the legal requirements, roles and responsibilities

Air quality is monitored and managed at European, national and local levels. Lambeth work on improving local air quality and minimising exposure under the London Local Air Quality Management (LLAQM) system is overseen by the Mayor of London as part of the Mayor's Air Quality Strategy.

Each year Lambeth prepares an Annual Status Report on local air quality. Current and historic reports can be found on Lambeth's website www.lambeth.gov.uk/AirQuality. Detailed actions to be taken in order to reduce emissions and the population's exposure to poor air quality can be found in Lambeth's Air Quality Action Plan. The current plan for 2017-2022 can be found on Lambeth's website on www.lambeth.gov.uk/AQAP.

6. What can be done to reduce emissions and exposure to air pollution

To improve air quality and protect the health and wellbeing of our citizens Lambeth has developed an Air Quality Action Plan (AQAP), which details the action Lambeth will be taking to reduce pollutant concentrations. These actions prioritise tackling the sources that contribute the most to local air quality: emissions from road traffic, emissions from water and space heating and emissions from construction.

Lambeth Air Quality Action Plan sets out detailed actions around three key priorities:

Priority 1: To continue to encourage sustainable travel and sustainable construction

Priority 2: To reduce exposure to air pollution and to raise awareness

Priority 3: To work in partnership with residents, community groups, Business Improvement Districts (BIDs), Transport for London and other organisations to concentrate on local pollution problems in Lambeth

Below are examples of actions which Lambeth will complete to achieve these priorities. The full plan can be read at www.lambeth.gov.uk/AQAP.

- Develop planning policy to continue to reduce emissions during and after construction
- Raise awareness and work with developers to use low-emission equipment in construction
- Ensure the policies to reduce pollution, which we already have in place, are respected and promoted wherever possible
- Promote to residents and take advantage of Greater London Authority funding to replace boilers
- Reduce emissions from deliveries in Lambeth
- Council officers to use vehicles only when absolutely necessary and Lambeth to change its fleet to low emission. Council officers to walk and cycle more, and use other sustainable transport as much as possible
- Investigate using low emission street sweeping equipment, which can also help to clean the air
- Raise awareness of the dangers from idling and encourage drivers to switch-off their engines when stationary
- Work with car clubs to increase the amount of electric, hydrogen and ultra-low emission vehicles in their fleet
- Encourage citizens to walk and cycle more
- Examine whether to introduce emission based parking charges, so vehicles which pollute more pay more
- Introduce more electric charging points and rapid chargers
- Reprioritise our road space, such as restricting parking on congested high streets to improve bus journey times and the cycling experience to encourage more sustainable travel
- Pressure TfL to do more to improve air quality, by extending the Ultra-Low Emission Zone (ULEZ) and make all buses in Lambeth low emission
- Work with businesses to improve air quality and reduce exposure
- Promote apps and websites which give air pollution information and advice on how to travel sustainably
- Work with schools to raise awareness and reduce exposure to pollution
- Encourage other council departments to consider air quality when making decisions

- Protect and increase green infrastructure wherever possible
- Look at measures in local areas to improve air quality, such as creating Low Emission Neighbourhoods (LEN). A LEN is a series of measures to improve air quality in an area, such as building green infrastructure and giving priority to bicycles on roads
- Investigate whether to install Santander bikes outside Brixton station
- Increase working with neighbouring boroughs to jointly reduce pollution
- Continue working to reduce pollution from idling taxis at Waterloo station
- Investigate building a green wall at Lambeth North station

Further information can be found on Lambeth's website www.lambeth.gov.uk/AirQuality