

London air pollution policies are starting to have impact, but more work to be done

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New research by scientists at King's College London suggests that air pollution from London's roads is improving overall but more work may be needed to tackle some sources of traffic pollution, which continue to breach limits in many parts of the city.

The study looked at trends in [air pollution](#) over a ten-year period spanning 2005 to 2014, using data collected from 65 roads. Researchers looked at changes in a number of pollutants including nitrogen dioxide (NO₂), particulate matter as fine (PM2.5) and coarser (PM10) particles, carbon dioxide (CO₂) and [black carbon](#).

The findings, published in the journal *Environmental Pollution*, showed significant variability across the city with some roads showing significant decreases but others did not improve. Examples include the notable improvement in nitrogen dioxide alongside Putney High Street and the deterioration along Upper Thames Street; the improvements in airborne particles on Marylebone Road in central London contrasting with the increase in coarse particles alongside some busy roads in outer London including Westhorne Avenue, part of the south circular in Eltham.

Between 2005 and 2009 nitrogen dioxide (NO₂) alongside London's roads increased by an average of 11 per cent per year. This can be attributed in part to a three per cent rise in the number of diesel buses and coaches between 2005 and 2009 and to the failure of tighter Euro class emissions standards. This concurs with the growing body of evidence suggesting that real-world emissions from diesel vehicles did

not align with their performance in factory tests.

After 2010, most roads showed some improvement in NO₂ with an average decrease of five per cent per year. Fitting new exhaust clean-up technology to older buses also helped to curb nitrogen dioxide along some of London's roads. Putney High Street, for example, saw a particular improvement with a significant reduction in NO₂ levels after 2010, thanks largely to the retrofitting of older buses technology to cut emissions.

Nevertheless, around three-quarters of air quality monitoring sites still recorded levels exceeding the NO₂ EU Limit Value in 2015.

Fine particulate matter measured as PM_{2.5} dropped by 28 per cent per year after 2010 and black carbon decreased by 11 per cent per year, which the authors attribute to the success of traffic exhaust abatement technologies such as particle filters on newer diesel vehicles.

Despite a reduction in the total number of vehicles on London roads by 0.5 per cent and improvements in exhaust emissions during 2010-2014, levels of PM₁₀ from traffic showed unexpectedly no significant overall change over this period. The authors suggest that the decrease in [exhaust emissions](#) may have been offset by greater releases of coarse particles from dust resuspension and wear-and-tear on tyres and brakes associated with a larger number of heavy goods vehicles (HGVs). This was found on some roads in outer London, such as Westhorne Avenue and Eltham that experienced decreases in PM_{2.5} levels but increased of PM₁₀.

Overall, the authors conclude that decreases in the levels of many pollutants after 2010 offer promising signs that the multitude of local and London-wide policies aimed at tackling [traffic pollution](#) are starting to take effect.

Dr Gary Fuller, Senior Lecturer in Air Quality Measurement at King's College London said: 'It is great that evidence shows that policies are starting to have an impact, but we need to expand on these to reduce the health burden from breathing polluted air. Achieving the EU Limit Value for [nitrogen dioxide](#) by 2030 is likely to remain a challenge for many major [roads](#) in London.'

'Tighter management of HGVs needed to ensure that the greater number of vehicles on the road do not offset the benefits from pollution abatement so far. Non-exhaust traffic emissions appear to becoming more important sources of particulate matter and new policies may be needed to tackle them.'

More information: Anna Font et al, Did policies to abate atmospheric emissions from traffic have a positive effect in London?, *Environmental Pollution* (2016). [DOI: 10.1016/j.envpol.2016.07.026](https://doi.org/10.1016/j.envpol.2016.07.026)

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