

Air quality in the Olympic City: Moving forwards not stumbling backwards

**Care4Air – ‘A Clearer Future Conference 2010’
Sheffield: 22 September 2010**

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Western extension of congestion charging zone

Hyde Park Corner looking towards Hyde Park

Summary

London 2012: a standing ovation or ridicule?

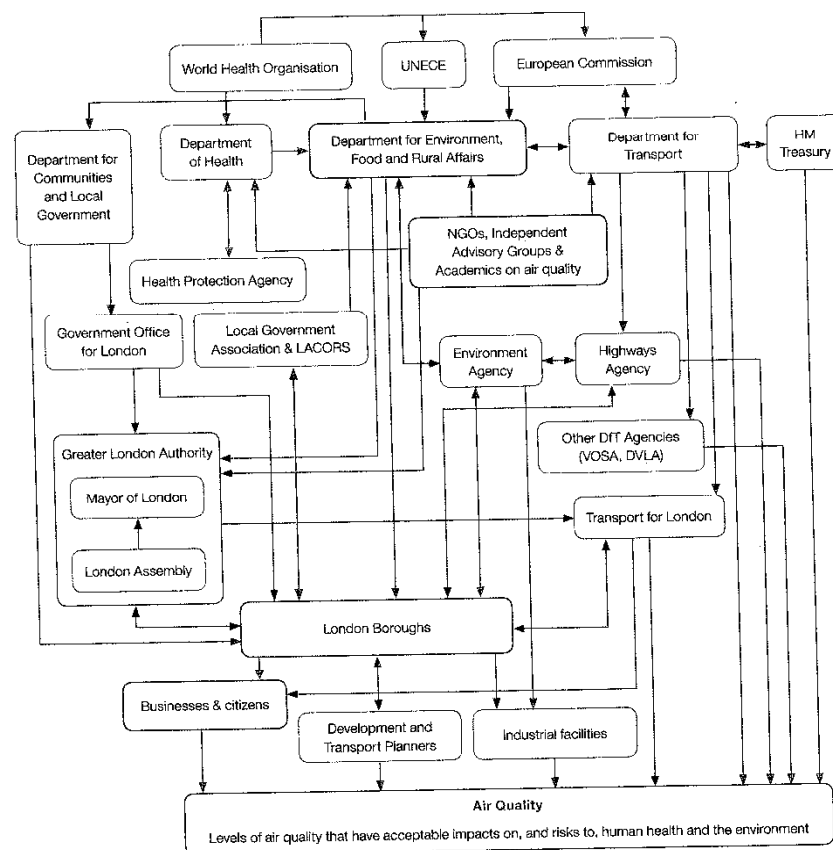
- **Mayor: ‘Around 4,300 premature deaths per year’**
- **Widespread and substantial breaches of air quality laws**
- **‘Clean Air in London’ pressing for necessary urgent action**
- **Mayor’s draft Air Quality Strategy still not ‘fit for purpose’**
- **Merits of inner low emission zone(s)**
- **Stumbling backwards?**
- **Moving forwards**

Let’s deliver the ‘greenest Games’

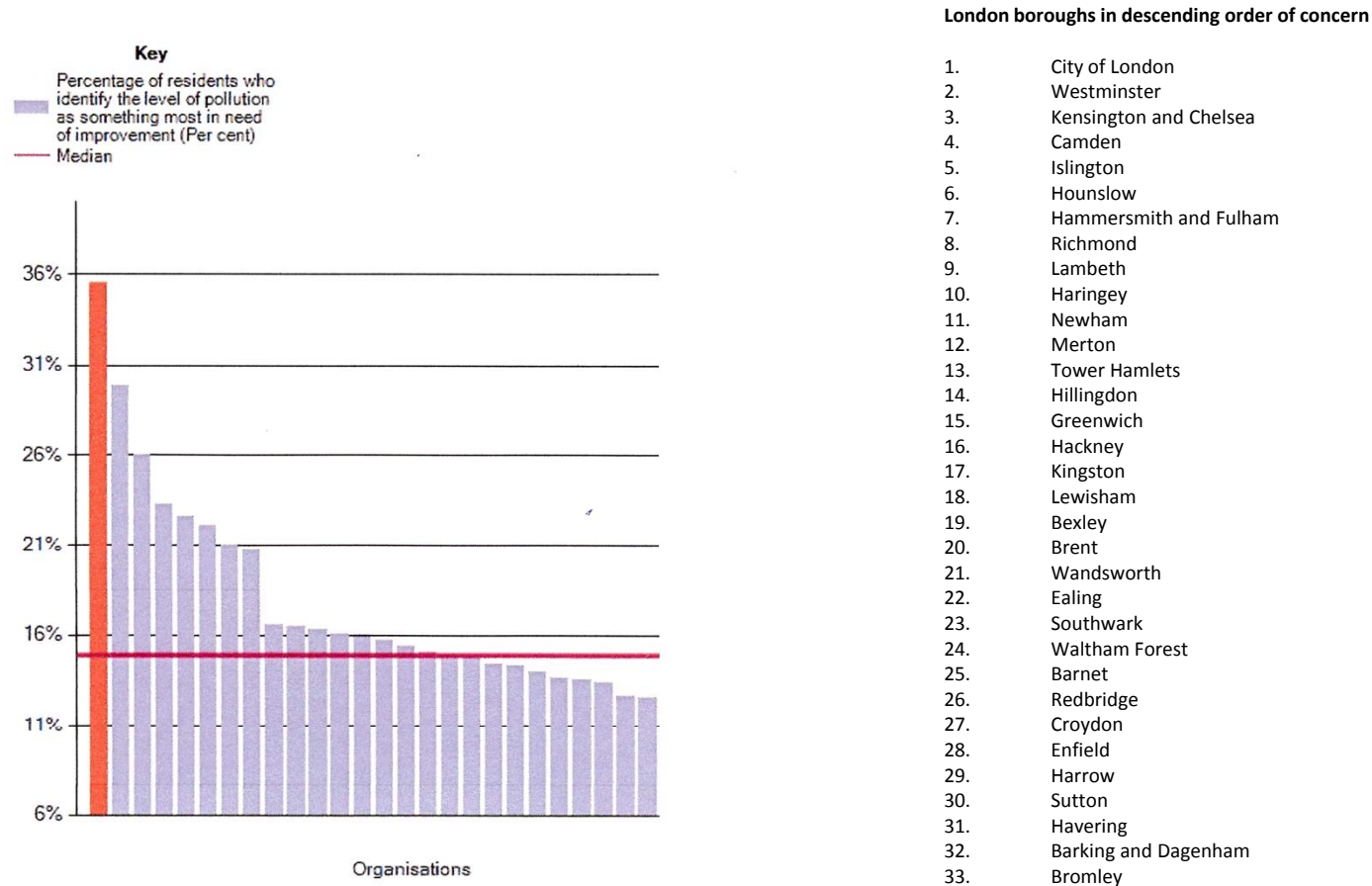
National Audit Office report on Air Quality

Responsibilities for improving air quality in London

Figure 11
Responsibilities for improving air quality in London



Percentage of residents by borough identifying pollution level as something most in need of improvement 2008/09



Mayor's health study: average concentrations of PM_{2.5} and premature deaths due to long-term exposure to PM_{2.5} by borough

London boroughs ranked by average concentration of PM_{2.5} (µg/m³) (2006)

1.	City of London	17.6
2.	Westminster	16.6
3.	Camden	16.2
4.	Kensington and Chelsea	16.2
5.	Tower Hamlets	16.0
6.	Islington	15.9
7.	Waltham Forest	15.9
8.	Southwark	15.8
9.	Hammersmith and Fulham	15.8
10.	Hackney	15.7
11.	Lambeth	15.7
12.	Wandsworth	15.6
13.	Newham	15.4
14.	Enfield	15.4
15.	Ealing	15.4
16.	Brent	15.4
17.	Haringey	15.3
18.	Lewisham	15.3
19.	Hounslow	15.3
20.	Greenwich	15.2
21.	Merton	15.2
22.	Redbridge	15.1
23.	Barnet	15.1
24.	Richmond upon Thames	15.0
25.	Barking and Dagenham	15.0
26.	Kingston upon Thames	15.0
27.	Croydon	15.0
28.	Sutton	14.9
29.	Hillingdon	14.9
30.	Bexley	14.8
31.	Harrow	14.8
32.	Bromley	14.7
33.	Havering	14.6

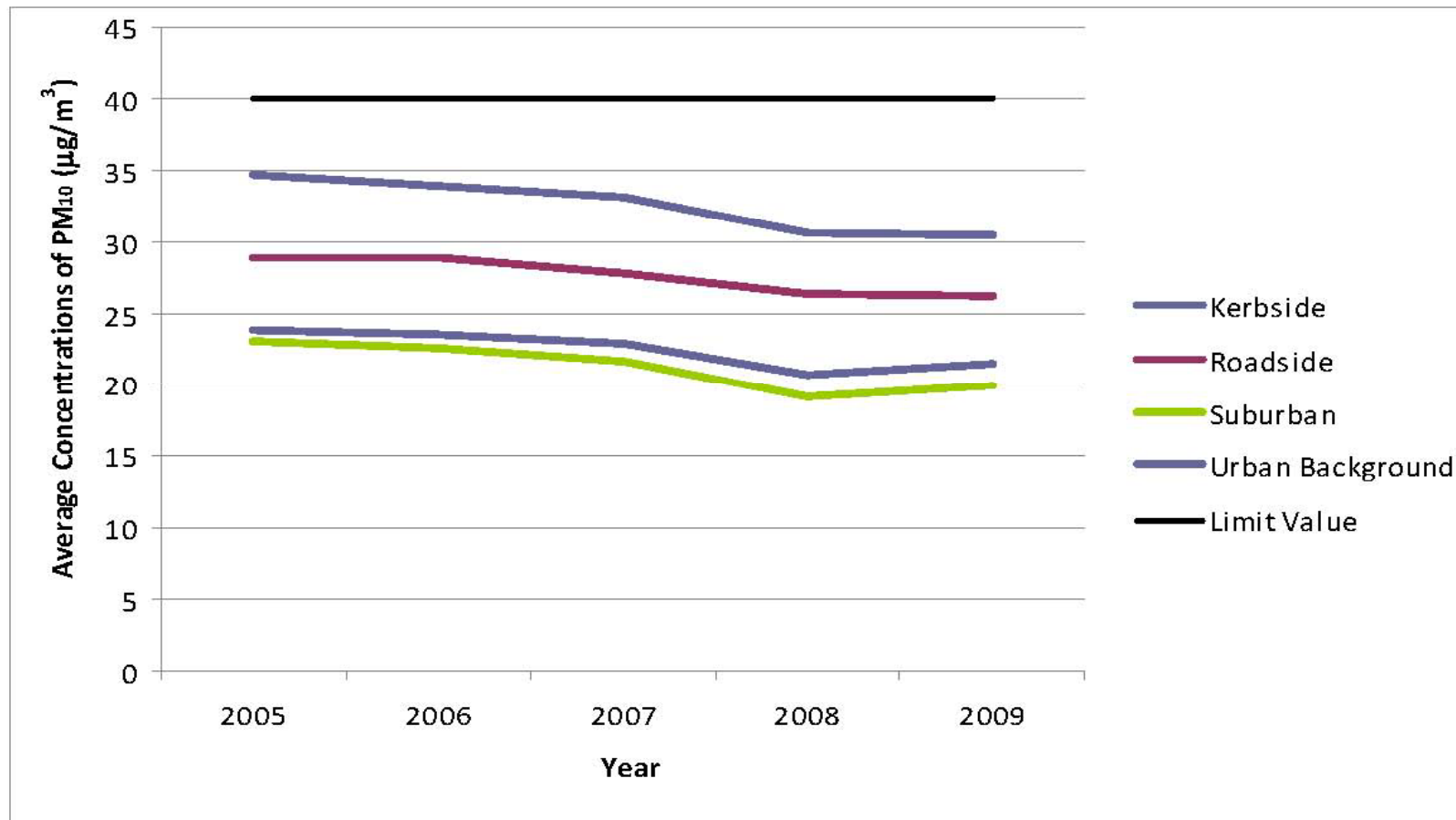
London boroughs ranked by estimated premature deaths per year (2006/08)

1.	Bromley	217
2.	Croydon	205
3.	Barnet	201
4.	Havering	182
5.	Enfield	178
6.	Ealing	167
7.	Bexley	161
8.	Hillingdon	154
9.	Lewisham	153
10.	Redbridge	153
11.	Greenwich	150
12.	Wandsworth	148
13.	Lambeth	139
14.	Southwark	136
15.	Brent	133
16.	Waltham Forest	129
17.	Sutton	124
18.	Newham	121
19.	Hounslow	121
20.	Barking and Dagenham	120
21.	Harrow	119
22.	Camden	107
23.	Merton	107
24.	Tower Hamlets	102
25.	Islington	100
26.	Haringey	99
27.	Richmond upon Thames	97
28.	Westminster	96
29.	Hackney	96
30.	Kingston upon Thames	91
31.	Hammersmith and Fulham	86
32.	Kensington and Chelsea	75
33.	City of London	4

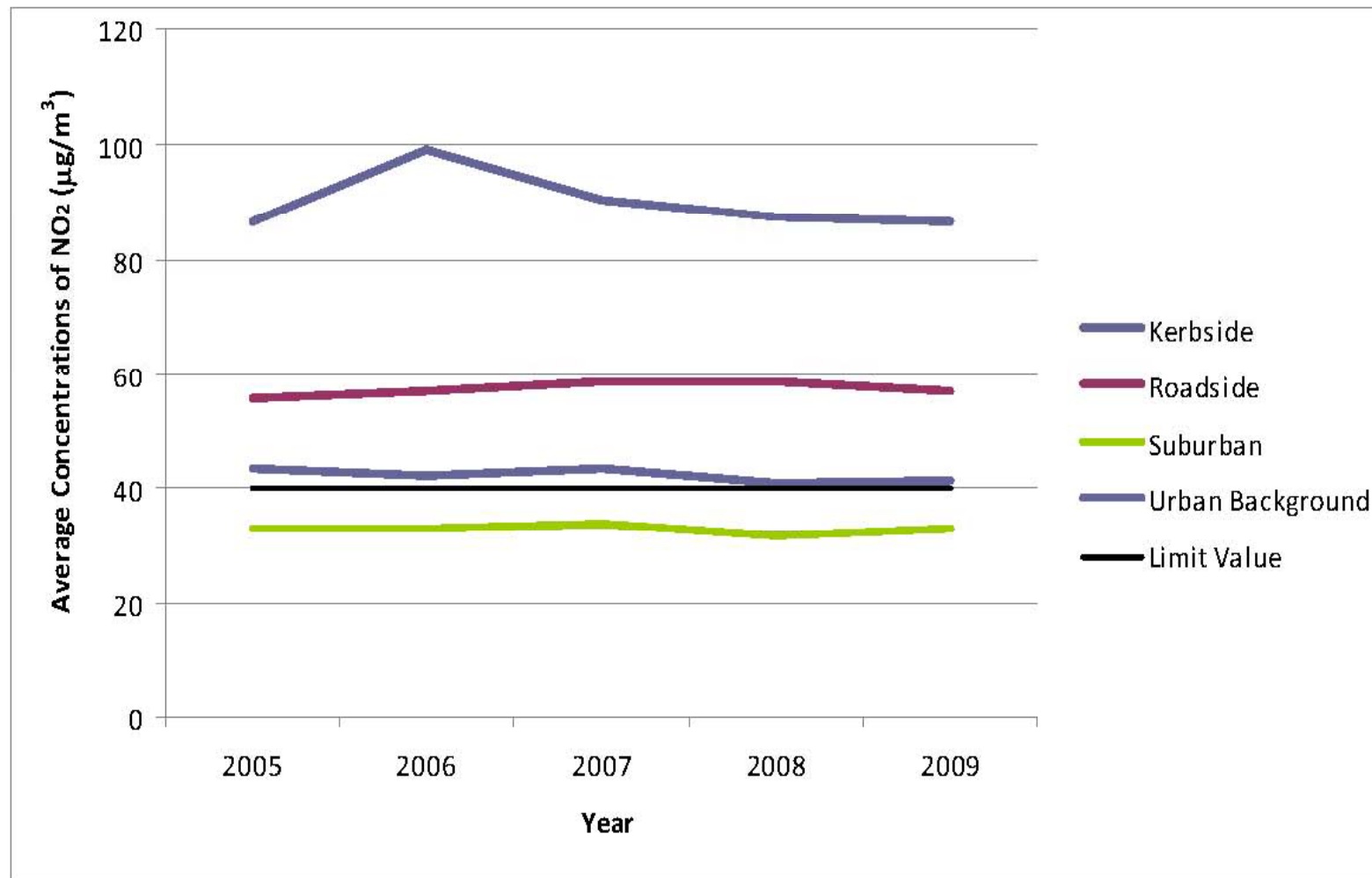
Communicating health risk to different audiences

- **Mayor applauded for publishing this information**
- **Population weighted annual mean concentrations of PM_{2.5}**
- **Premature (or ‘attributable’) deaths due to long-term exposure to PM_{2.5}**
- **‘At the extremes that may be a few days and up to 10 years’**
- **Excludes: short-term health impact; and other air pollutants (which may overlap with long-term health impact for PM_{2.5})**
- **Useful measure of health risk. Complements national estimates for: total years of life lost (eg 32 million); and/or average reduction in life expectancy (eg six months)**
- **Similar metrics used for alcoholism, obesity and smoking**
- **They need careful interpretation**

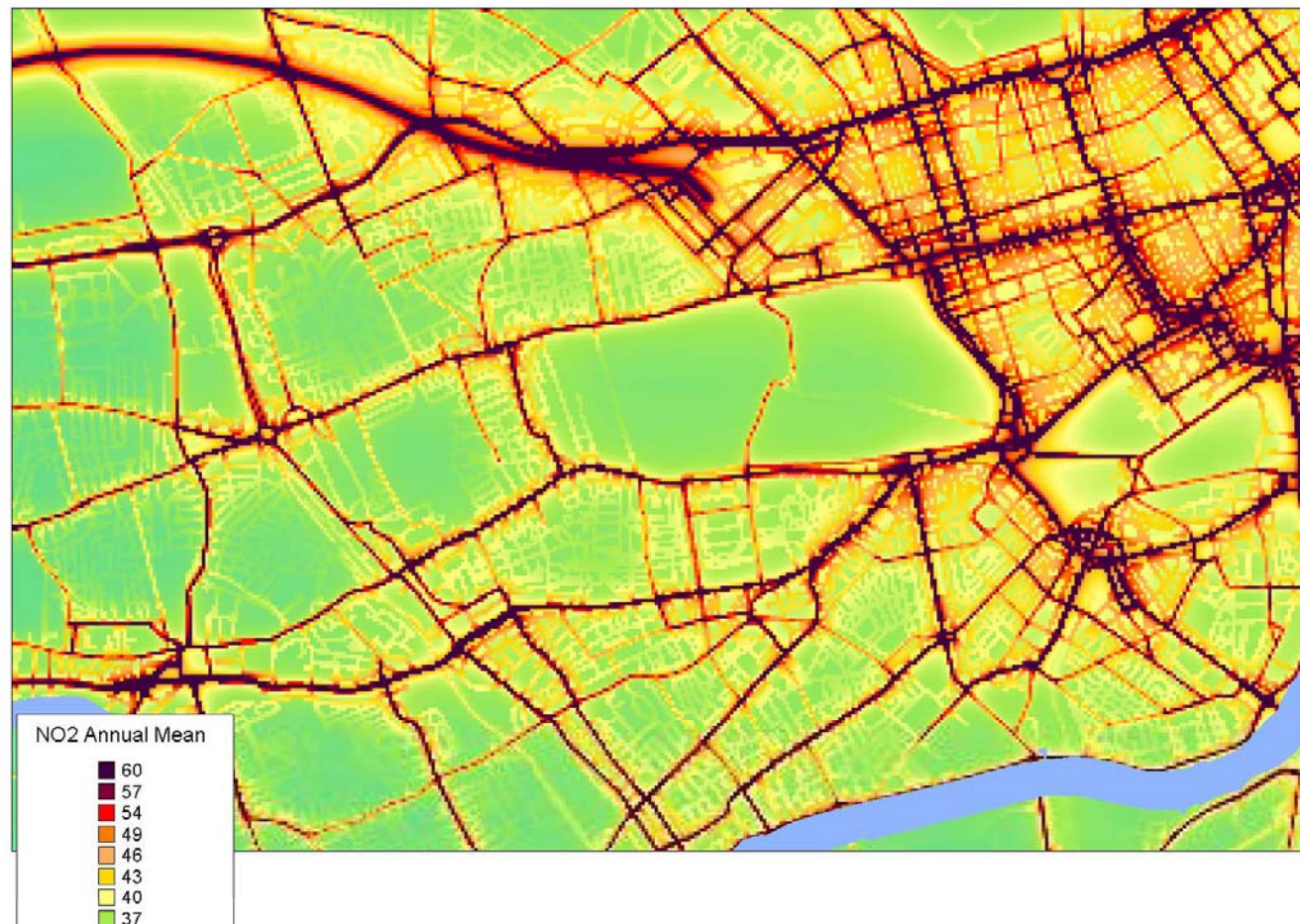
Mayor's Air Quality Strategy: Annual average trends in PM₁₀ in London since 2005



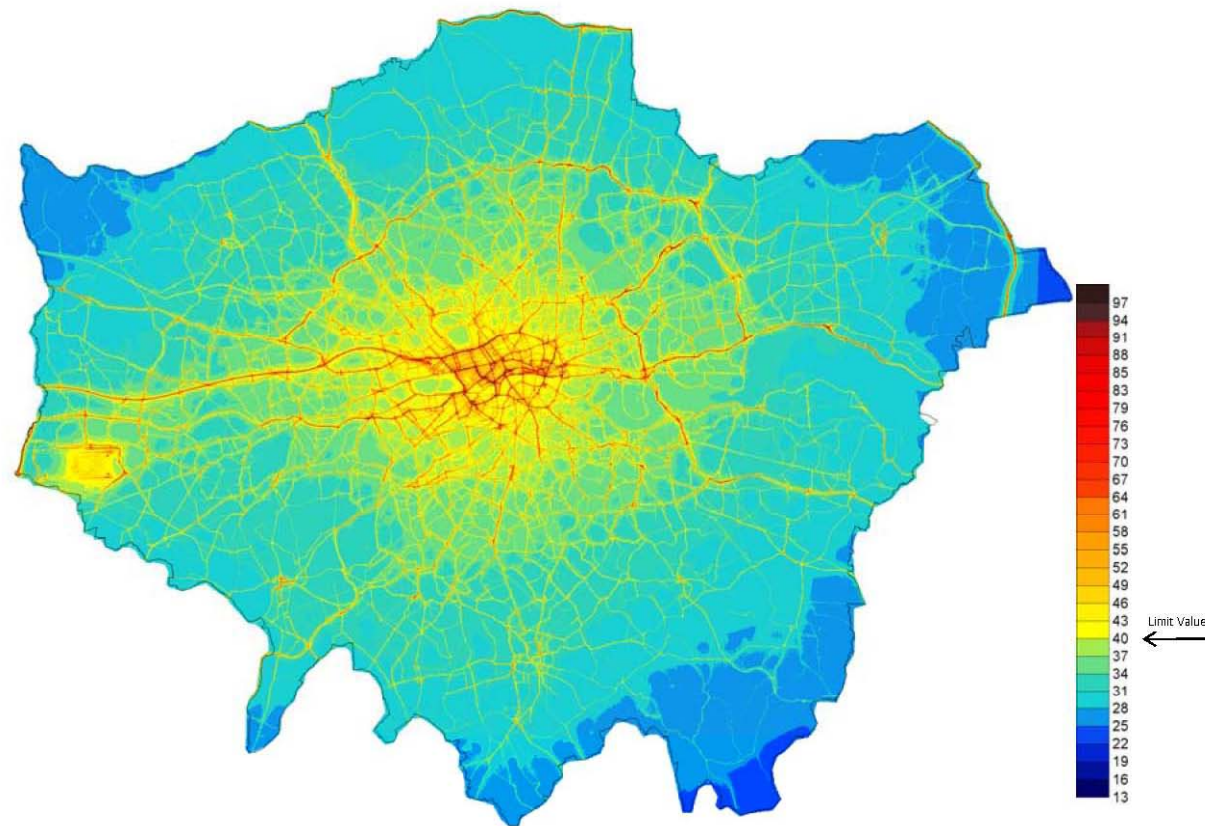
Mayor's Air Quality Strategy: Annual average trends in NO₂ in London since 2005



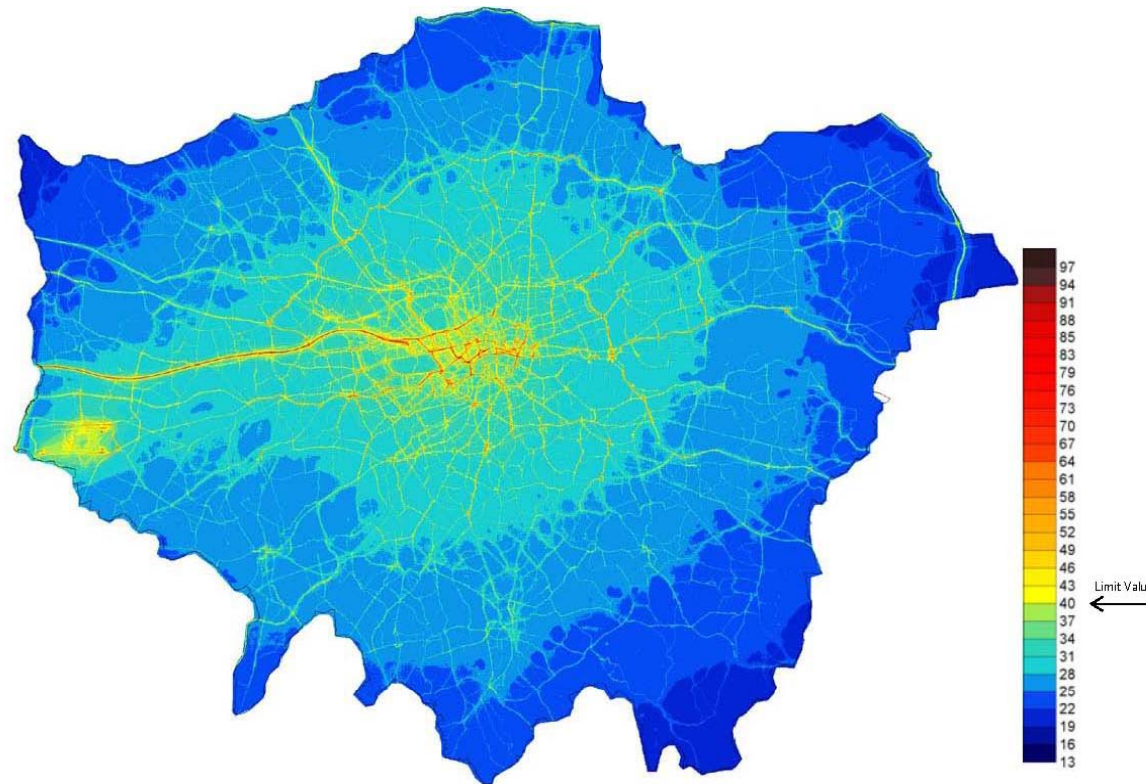
Transport for London: Predicted annual mean NO₂ in 2011 with WEZ



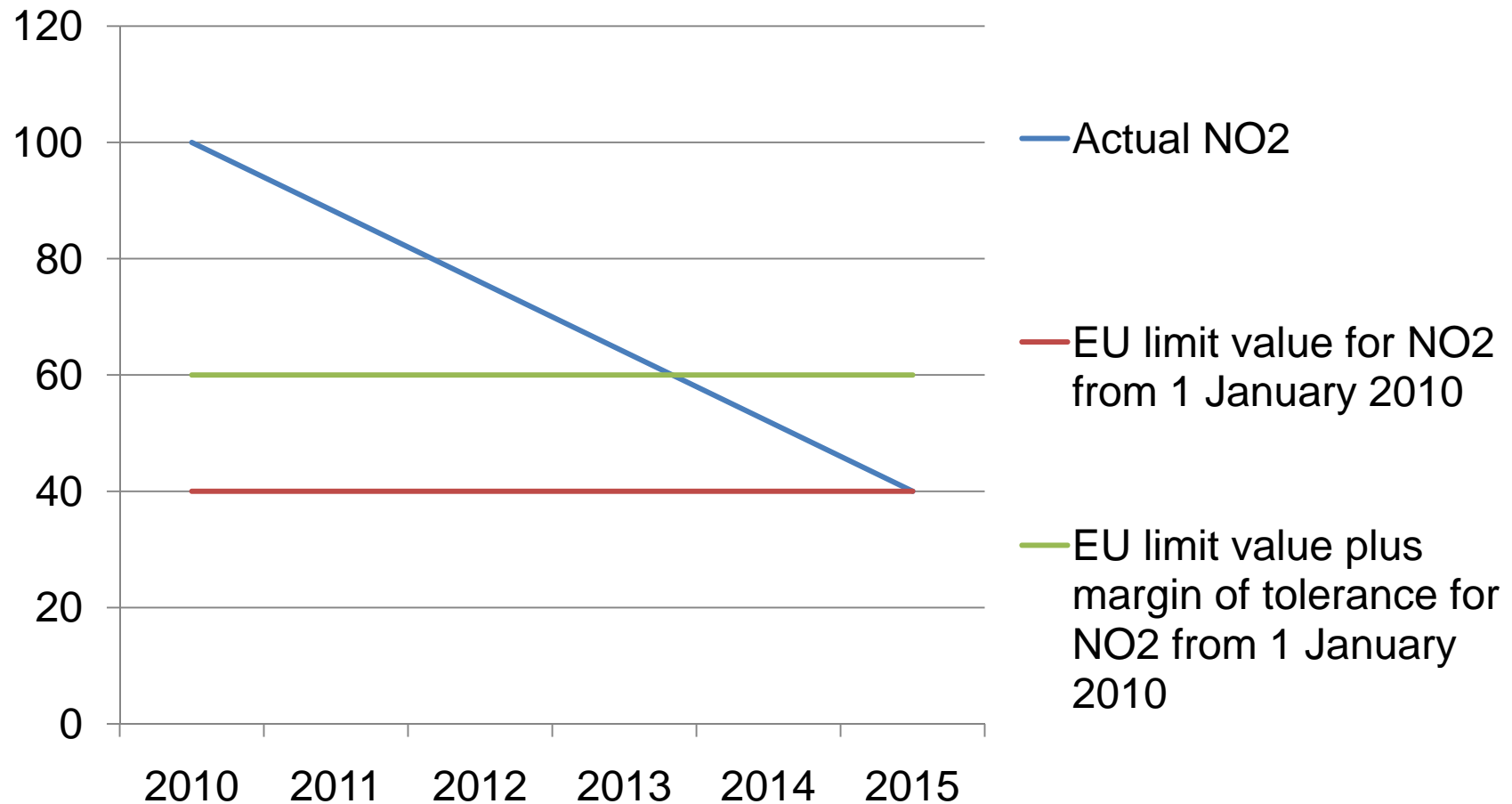
Mayor's Air Quality Strategy: NO₂ annual average concentrations for 2008



Mayor's Air Quality Strategy: NO₂ annual average concentrations for 2015



Concentrations of nitrogen dioxide (NO₂) in micrograms per cubic metre (µg/m³) over time



‘Clean Air in London’ pressing for necessary urgent action

Key campaign principles:

- **‘It’s about public health.’ At least comply with the law**
- **Air pollution: climate change and air quality**
- **‘The London Matrix’: Comply with air quality laws in London (or any big city) to show how air pollution and sustainability can be addressed everywhere**
- **‘The London Circles’: Tackle congestion and emissions**
- **‘The London Principle’: Managing air pollution trade-offs by accepting a 1% ‘cost’ for a 10% ‘benefit’**
- **Avoid the ‘Busy fool’ problem by prioritising**
- **Champion key issues in multiple places at a senior level**
- **Support effective action by key decision makers**

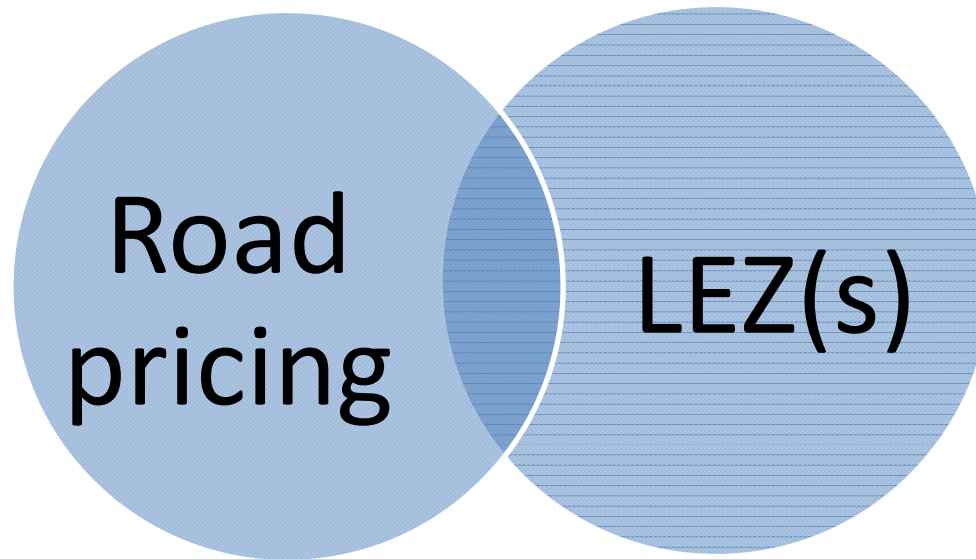
“The London Matrix”

Ridicule or applause for showing the world how to tackle successfully air pollution and sustainability issues

	Air quality	Climate change
London	London 2012 spotlight	
Rest of world		

“The London Circles”

Transport measures address Congestion and/or Emissions



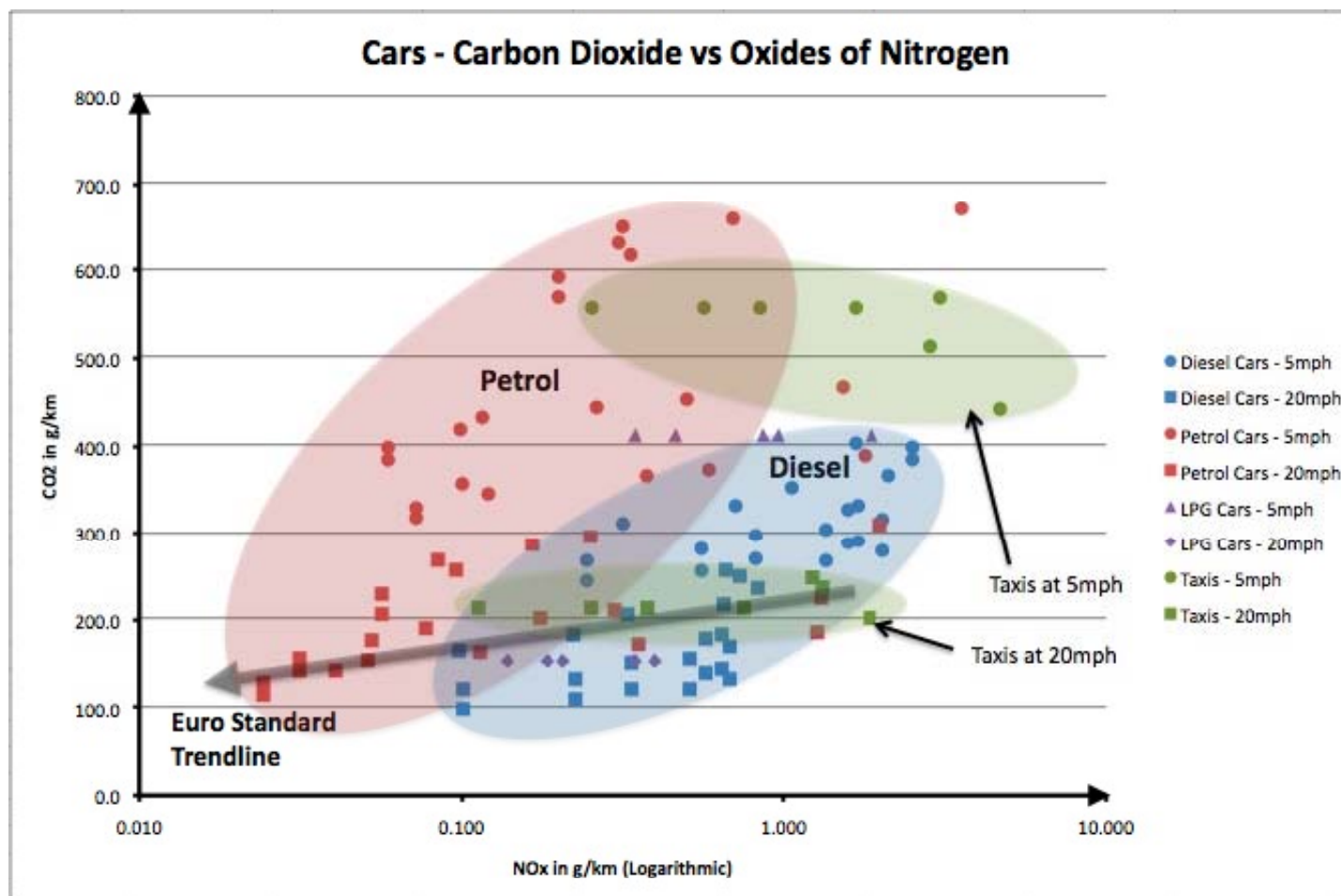
“The London Principle”

A practical approach to air quality/climate change trade-offs

- **Foolish to constrain solutions by ‘no-negative impact on air quality or climate change’**
- **Managing air pollution trade-offs by accepting a 1% ‘cost’ for a 10% ‘benefit’**
- **Comply with air quality and climate change obligations including timetables**
- **Diesel emissions in the countryside not cities**
- **Diesel and petrol standards will not begin to be air quality/climate change neutral until 2015**

Air pollution trade-offs: Diesel versus petrol emissions

Analysis by Ed Townes, Researcher, of Government emissions database



Mayor's draft Air Quality Strategy

- **Still not 'fit for purpose'. Some good work**
- **GLA Act requires 'policies and proposals for the achievement of the UK standards'**
- **Road transport: 80% of PM_{2.5} emissions in London in 2008**
- **Delay of Phase 3 of the low emission zone and removal of 'western extension' are backward steps on PM₁₀ and NO₂**
- **Reliance on street vegetation, traffic management and cleanest buses in central London 'where possible'**
- **Focus on 'Priority locations' is playing 'Russian Roulette'**
- **Wishful thinking that PM₁₀ obligations will be met in 2011**
- **NO₂: NOx needs to be reduced by 80%. 35% planned...**

Inner low emission zone(s) in London

What can we learn from Berlin?



Berlin's Environmental Zone Information for Foreign Tourists

Berlin established an Environmental Zone on 1st January 2008. Its purpose is to reduce harmful pollutants in the air that are caused by car emissions.

The Environmental Zone on the Internet: www.berlin.de/umweltzone

The Environmental Zone is an area where only those vehicles are allowed to drive that meet certain exhaust emission standards. This area in Berlin is delimited by the suburban train circle line (S-Bahn). Vehicles with particularly high emissions must stay outside this area. The rule also applies to vehicles registered abroad.

Stickers identifying low-emission vehicles

Coloured windscreen stickers have been introduced in order to be able to check whether a vehicle emits small or large amounts of pollutants. These stickers are valid in all Environmental Zones established in German cities - not just in Berlin, but also for example in Hanover, Cologne or Stuttgart. Foreign tourists also require such a sticker for their vehicles.

There are four pollutant classes, which correspond to the exhaust emission standards (Euro norm) for diesel vehicles. Diesel vehicles can be reclassified in a higher pollutant class if they are retrofitted with a particulate filter. Stickers are not issued for vehicles in pollutant class 1 as these have a particularly high level of air pollutant emissions and may only drive outside the Environmental Zone.

From 1st January 2008 until 31st December 2009 vehicles with a red, yellow or green sticker may drive in the Environmental Zone, but from 1st January 2010 only those with green stickers will be allowed. This tightening of restrictions affects only diesel vehicles.

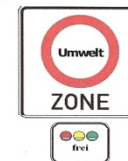
Vehicles registered abroad will be classified either on the basis of documentary evidence that they meet the European emission norms or according to the their initial registration date. The following table is intended to give a general overview for passenger cars, but there may be variations in individual cases.

Emission standard (Euro norm)	Pollutant Class	Initial vehicle registration passenger cars	Sticker
Diesel engine			
Euro 1 or older	1	before 01.01.1997	none
Euro 2/ Euro 1 + filter	2	from 01.01.1997 to 31.12.2000	2
Euro 3/ Euro 2 + filter	3	from 01.01.2001 to 31.12.2005	3
Euro 4/ Euro 3 + filter	4	from 01.01.2006	4
Petrol engine			
Before Euro 1	1	before 01.01.1993	none
Euro 1 and better	4	from 01.01.1993	4

The Environmental Zone is in the centre of Berlin:



This traffic sign indicates where the Environmental Zone begins:



Caution - Fine!

Anyone caught violating the rules of the Environmental Zone must pay a fine of EUR 40.

Attach the sticker to the inside of the windscreen:



1

Inner low emission zone(s) in London

What can we learn from Berlin?

- **Some 40 German cities had LEZs by January 2010**
- **A national framework sets the emissions classes and main rules to be used by cities. 5 billion euro 'scrappage scheme'**
- **Three types of sticker: red, yellow and green from January 2008**
- **All vehicles (with exceptions): targets diesel emissions; petrol Euro 1 with catalytic converter gets Green sticker**
- **5-15 euro sticker and 40 euro fine plus one penalty point**
- **Based on 'whole' Euro standard not just PM**
- **Retrofitting enables upgrade by one level**
- **Access to LEZs restricted in stages**
- **Warns that LEZ may be tightened more quickly if concentrations do not fall sufficiently**
- **Inputs proportional to outputs: 60% to 95+% compliance through local enforcement (not cameras)**
- **Initial results show 3% fall in PM₁₀ and 10% fall in NO₂**

Stumbling backwards...?

- | | |
|---------------------|---|
| September | - Decision on Phase 3 of low emission zone |
| Autumn | - Publication of Mayor's Air Quality Strategy? |
| | - Decision on western extension of congestion charging zone |
| | - European Commission decision on UK's time extension until 2011 for PM ₁₀ |
| | - Consultations on Olympic Route Network |
| December | - Breach of NO ₂ annual limit value plus MOT |
| January 2011 | - Breach of NO ₂ hourly limit value for 2011 |
| June | - Breach of PM ₁₀ daily limit value for 2011? |
| October | - Likely European infringement action on NO ₂ |

Moving forwards

- **Mayor must ensure PM₁₀ limit values are fully met in 2011**
- **NO₂ will require everything including the ‘kitchen sink’**
- **Mayoral ‘u-turns’ on western extension and LEZ3 delay**
- **Campaign to build public understanding of air pollution**
- **Clean up buses and taxis: retrofit and absolute standards**
- **Berlin-style low emission zone in 2011 tightening in 2014**
- **Strict control of biomass. Boiler scrappage scheme**
- **London Plan to set robust framework for action and include special protections for the vulnerable eg schools**
- **Mayor’s Air Quality Strategy must be ‘fit for purpose’**
- **London 2012 to showcase a ‘2015 transport vision’**

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