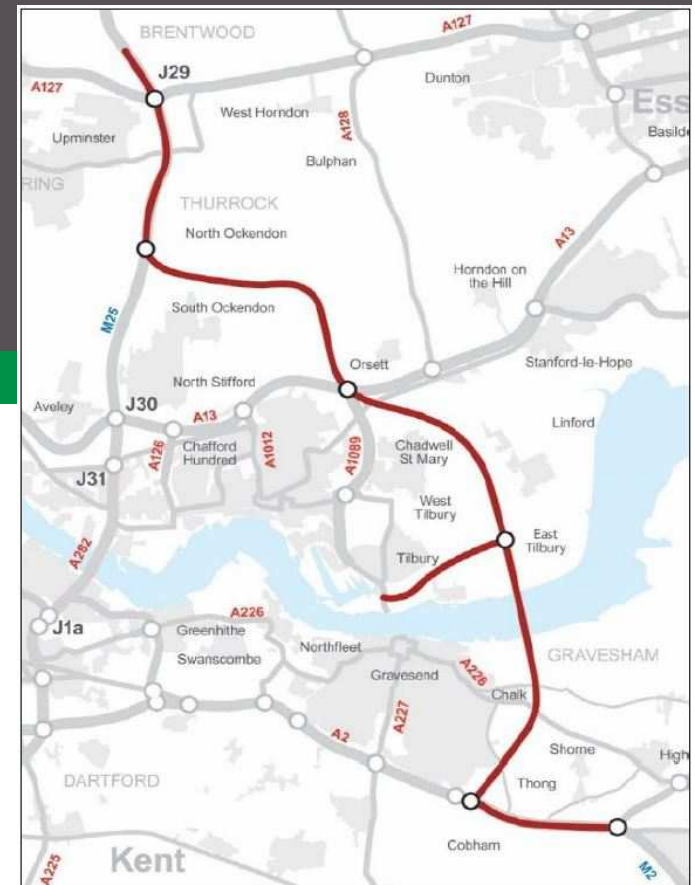


Thurrock Air Quality

Lower Thames Crossing
Task Force

18 December 2017



“If the air is altered ever so slightly, the state of the Psychic Spirit will be altered perceptibly. Therefore you may find in whom you notice defects in the actions of the psyche with the spoilage of air, namely, that they develop dullness of understanding, failure of intelligence and defect of memory.”

Moses Maimonides (1135 – 1204)

London 5th – 9th December 1952

- 4000 excess deaths two weeks after the smog
- 12,000 Deaths attributed to London Smog



AIR POLLUTION

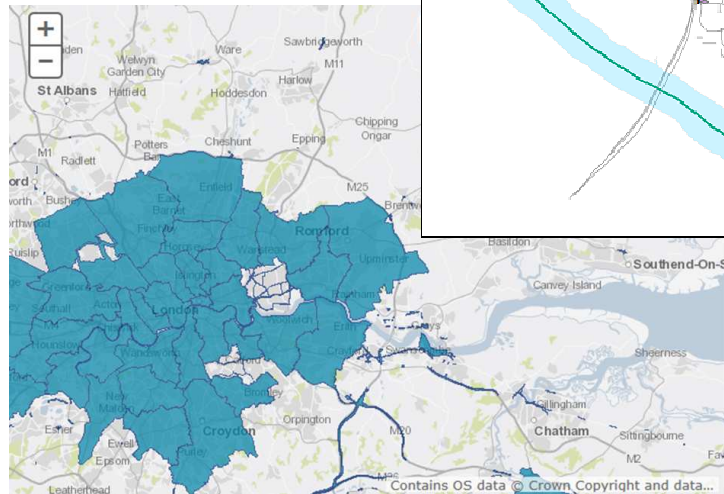
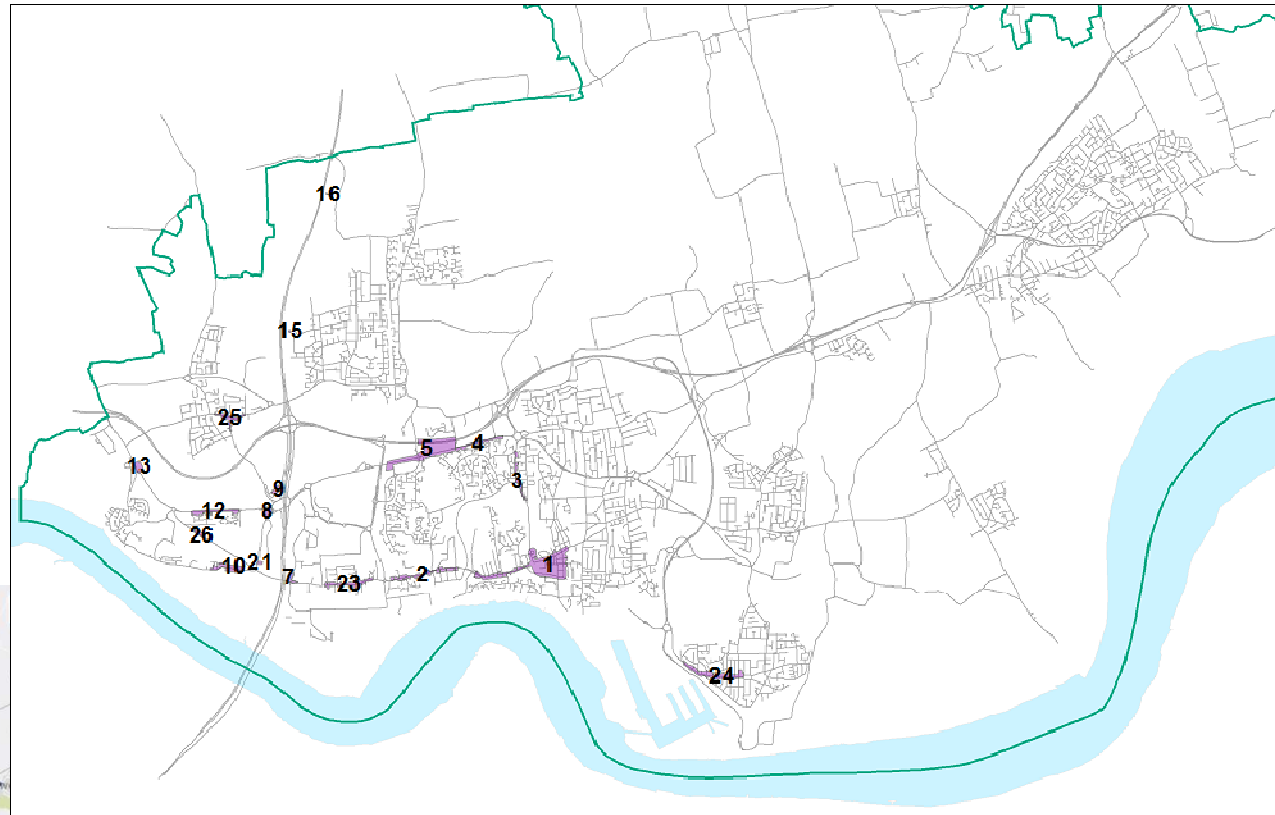
- Associated with adverse health impacts
- Factor in the onset of heart disease and cancer
- Affects the most vulnerable in society, children and older people, and those with heart and lung conditions
- Strong correlation with equality issues

PM₁₀ and PM_{2.5}



Image courtesy of the U.S. EPA

Thurrock AQMA's



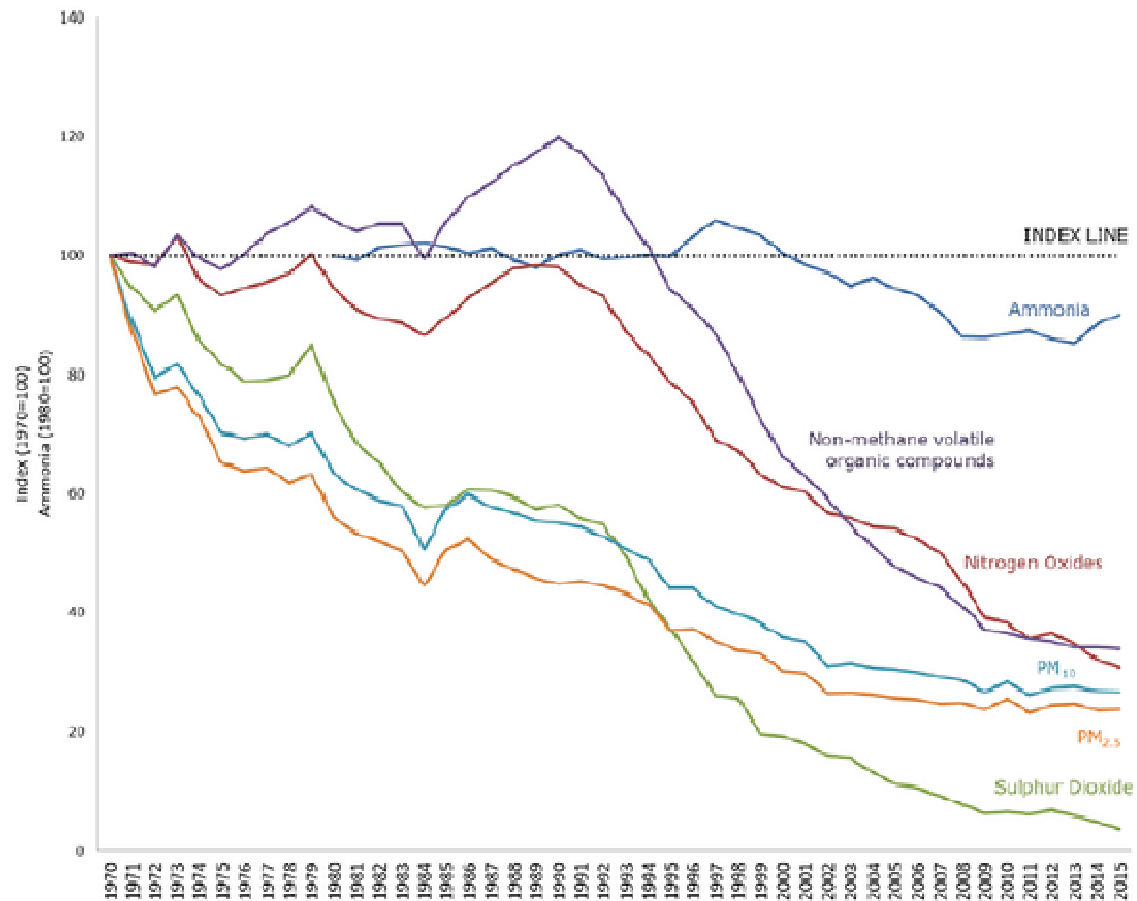
Thurrock AQMA's

- 18 AQMA's
- NO₂ and the long-term objective or annual mean 40 µg/m³ objective
- 4 declared for PM₁₀, for the short-term objective or daily mean objective of 35 permitted exceedences of >50 µ/m³

Air Quality Objectives in England

Pollutant	Objective	Concentration measured as
Benzene	3.25µg.m ⁻³ (1.0 ppb)	Running annual mean
1,3 Butadiene	2.25µg.m ⁻³ (1.0 ppb)	Running annual mean
Carbon Monoxide	10 mg.m ⁻³ (8.7 ppm)	Maximum daily running 8 hour mean/in Scotland as running 8 hour mean
Lead	0.25µg.m ⁻³	Annual mean
Nitrogen Dioxide	200µg.m ⁻³ (106.3 ppb) not to be exceeded more than 18 times a year	1 hour mean
	40µg.m ⁻³ (21.3 ppb)	Annual mean
Ozone	100µg.m ⁻³ (50.9ppb) not to be exceeded more than 10 times a year	8 hour mean
Particulates (PM ₁₀)	50µg.m ⁻³ not to be exceeded more than 7 times a year	24 hour mean
	40µg.m ⁻³	Annual mean
Polycyclic aromatic hydrocarbons	0.25 ng.m ⁻³ B[a]P	As an annual average
Sulphur Dioxide	266µg.m ⁻³ (101.6 ppb) not to be exceeded more than 35 times a year	15 minute mean

Figure 1: Trends in UK sulphur dioxide, nitrogen oxides, non-methane volatile organic compounds, ammonia and particulate matter (PM₁₀, PM_{2.5}) emissions 1970 – 2015



The index line is a comparator that shows the level of emission if they had remained constant from the beginning of the time series.

[tps://www.gov.uk/government/statistics/emissions-of-air-pollutants](https://www.gov.uk/government/statistics/emissions-of-air-pollutants)

CONTINUOUS MONITORING SITES



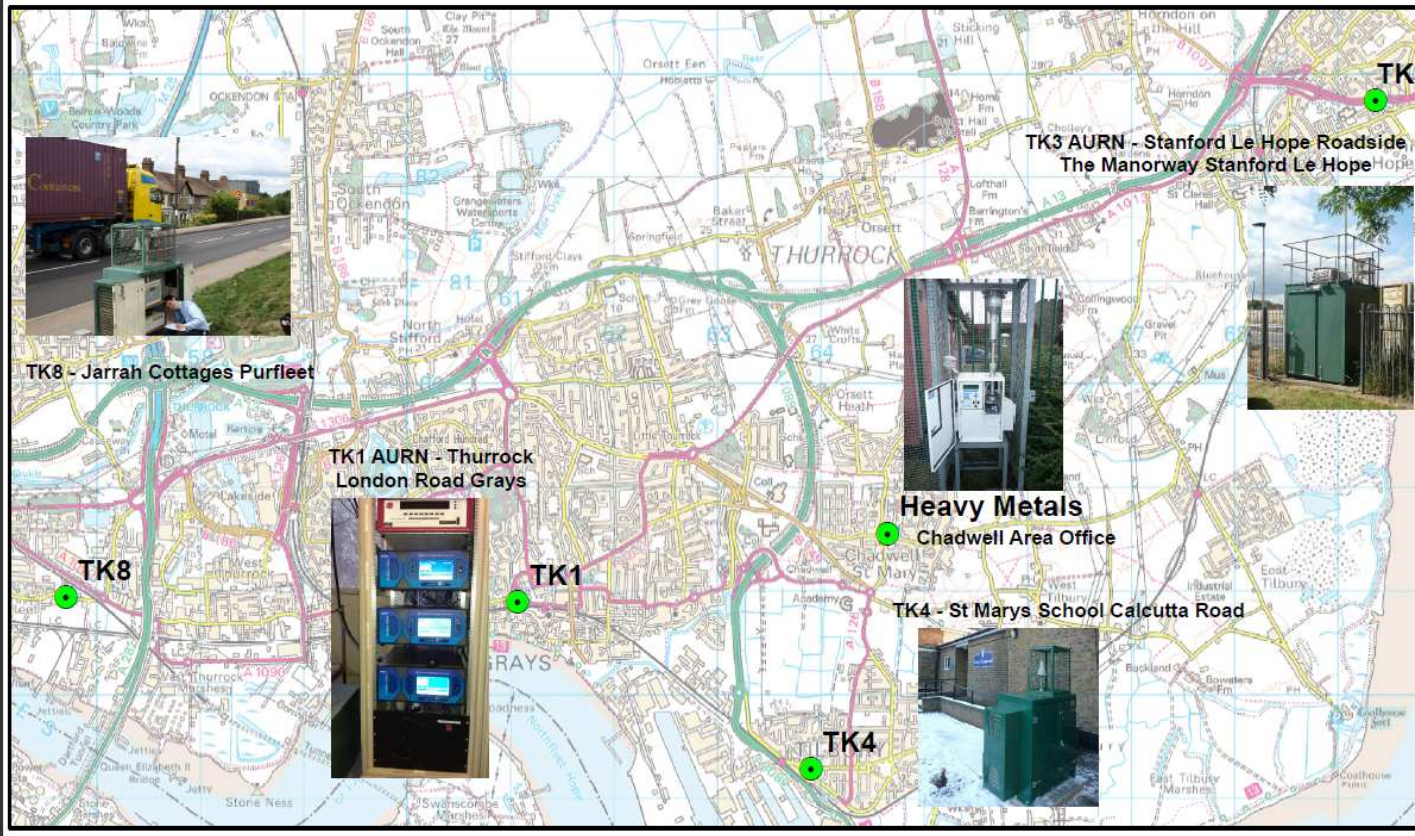
thurrock.gov.uk

Thurrock Council Automatic Air Quality Monitoring Stations 2016 - Location Map

Current and historic data from the stations can be found here:

http://www.londonair.org.uk/london/asp/PublicBulletin.asp?la_id=34

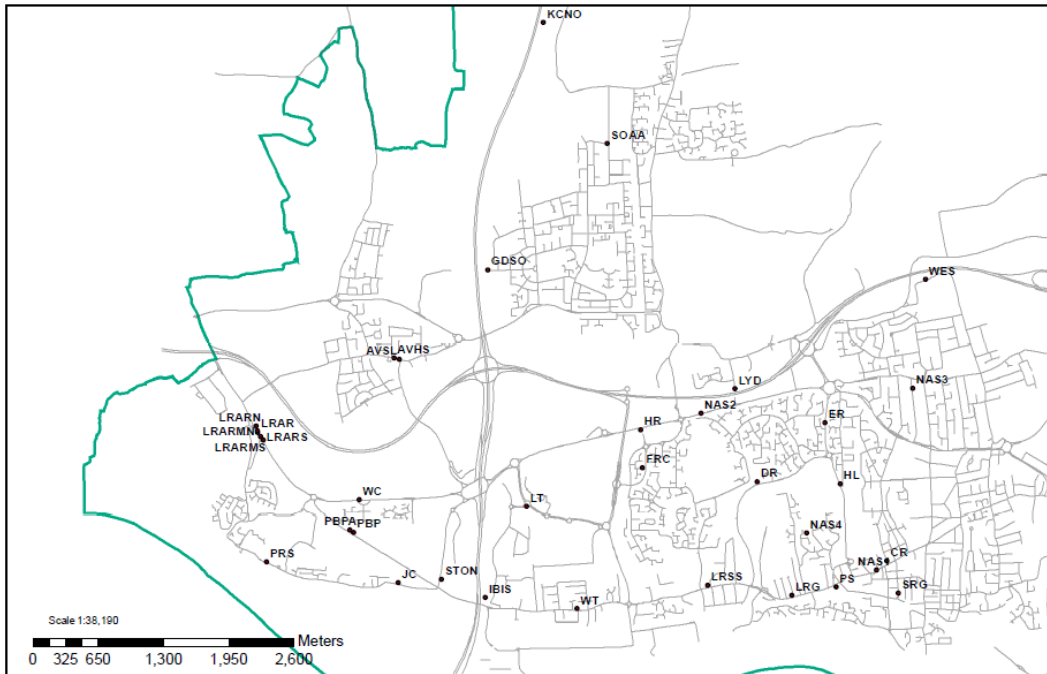
NB Heavy Metals data are not on-line measurements



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Scale 1:50,000

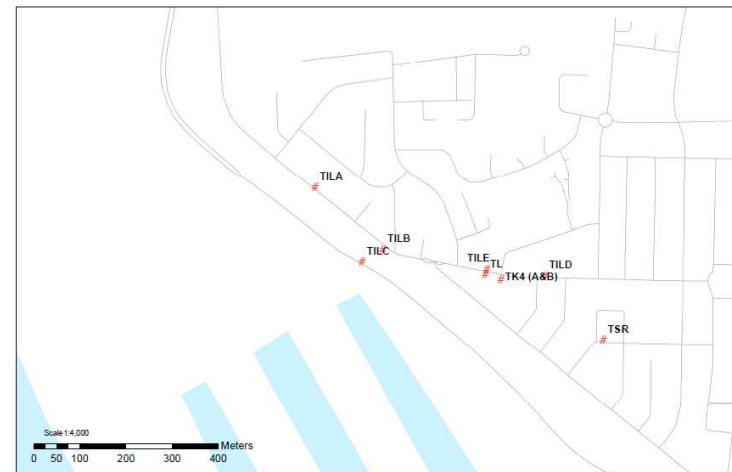
DIFFUSION TUBE SITES



THURROCK COUNCIL
www.thurrock.gov.uk

Created by Dean Page
Pollution Control
Public Protection Department

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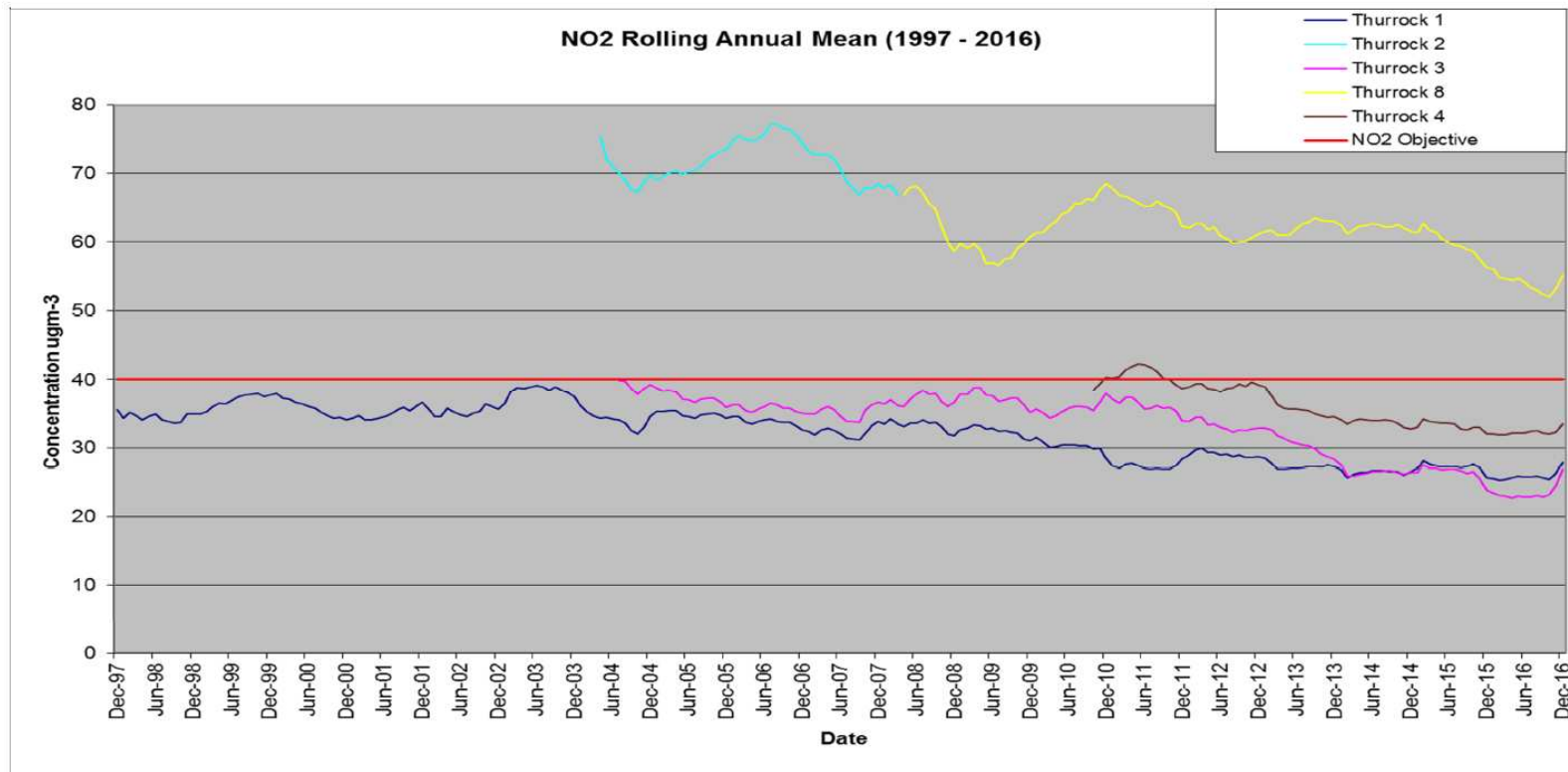


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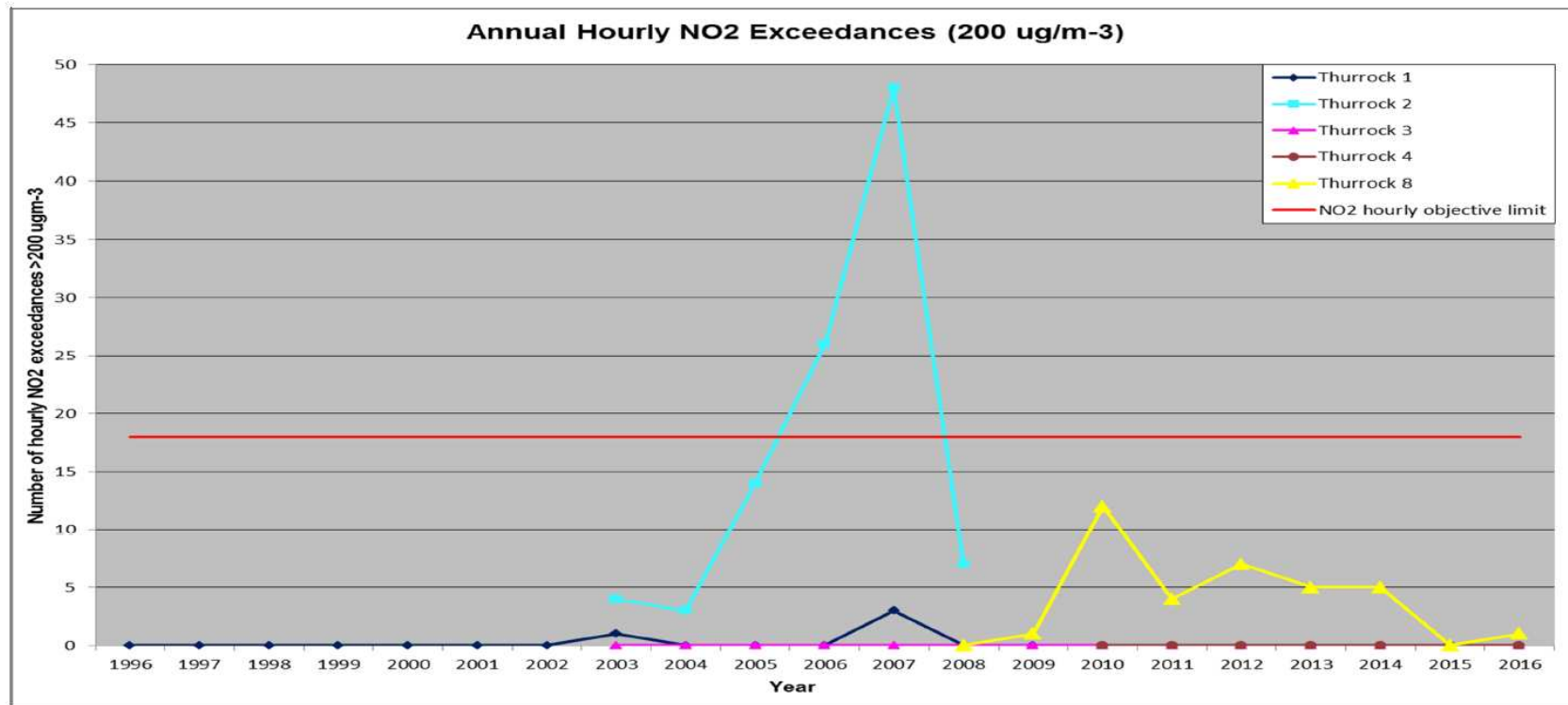
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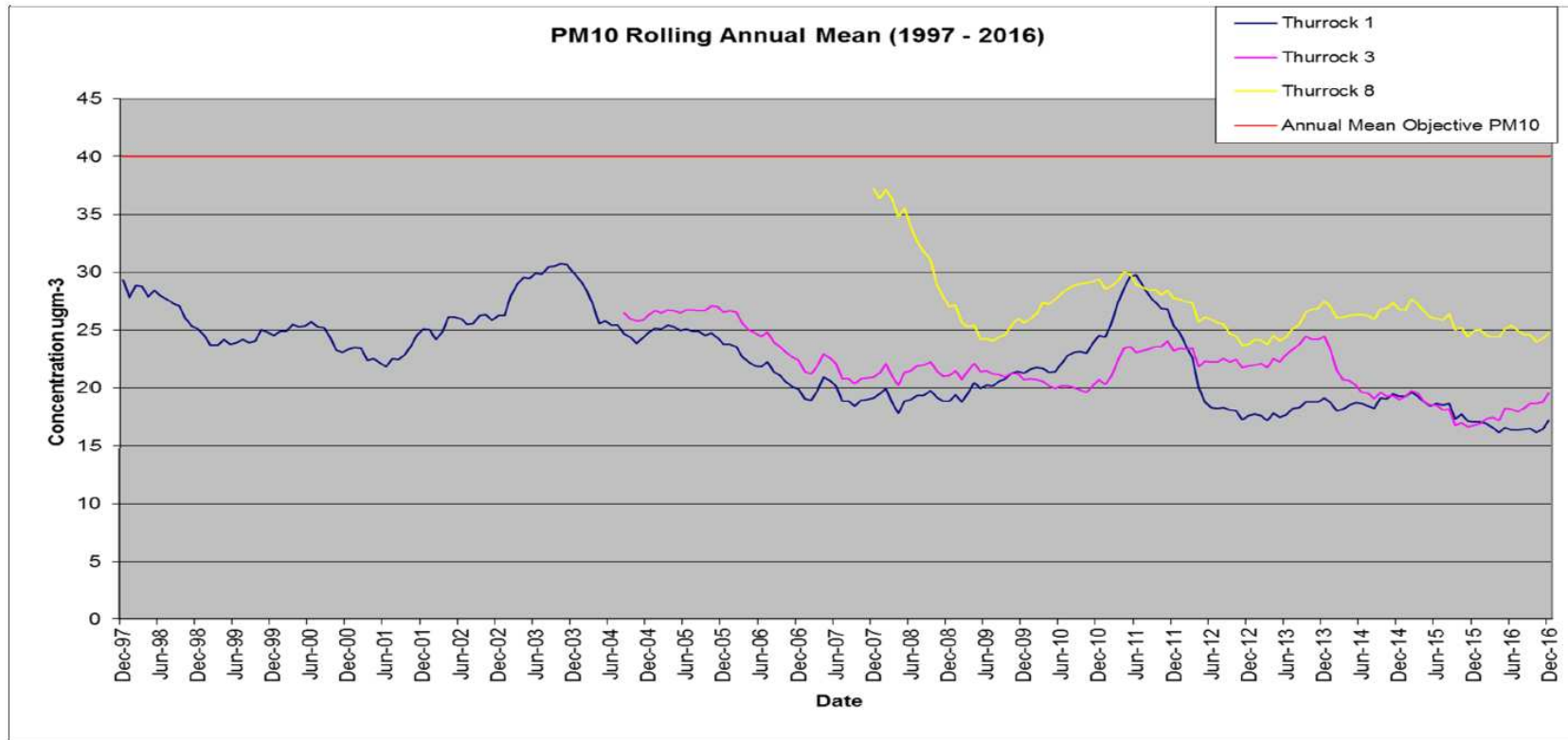
Trends in Annual Mean NO₂ Concentrations



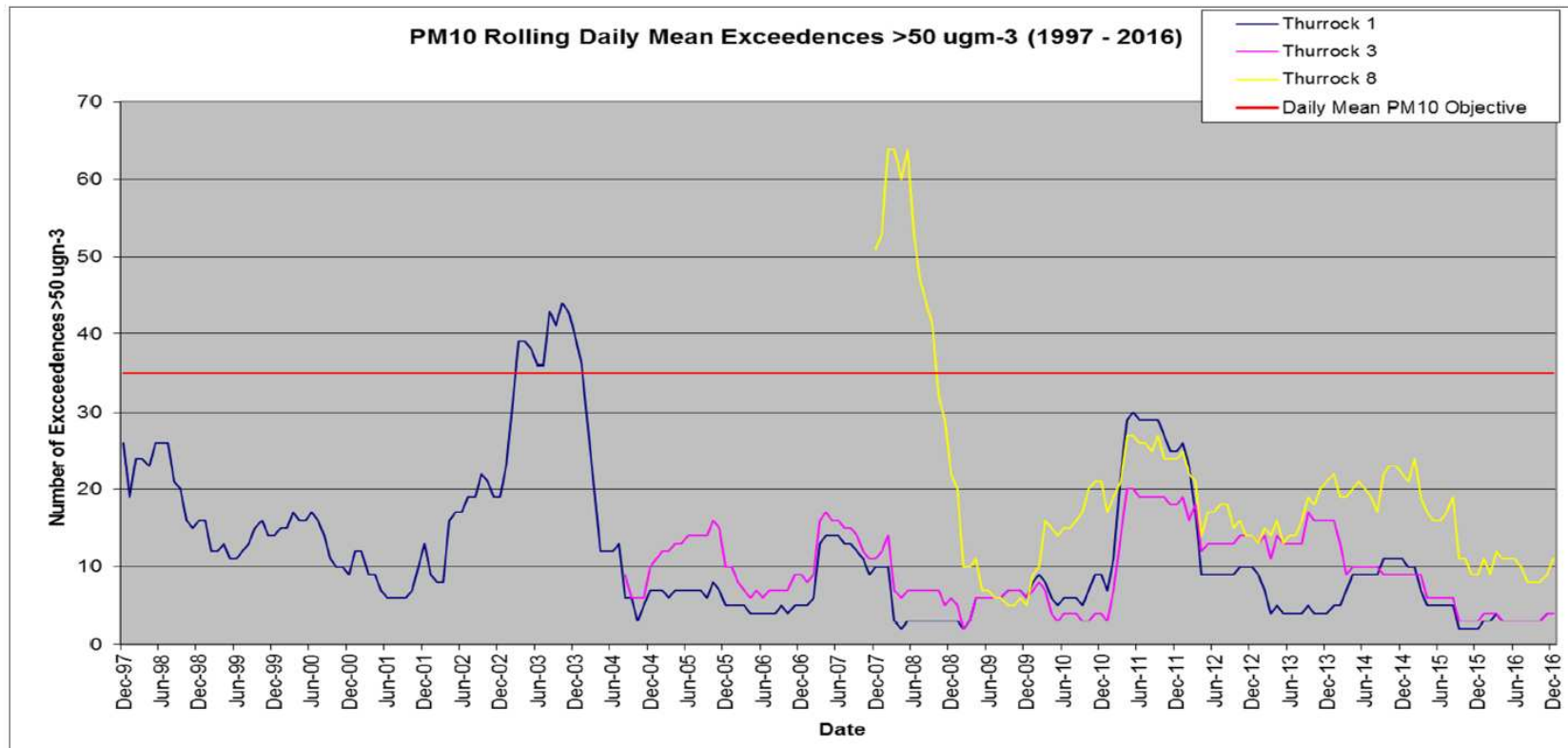
Trends in Number of NO₂ 1-Hour Means > 200µg/m³



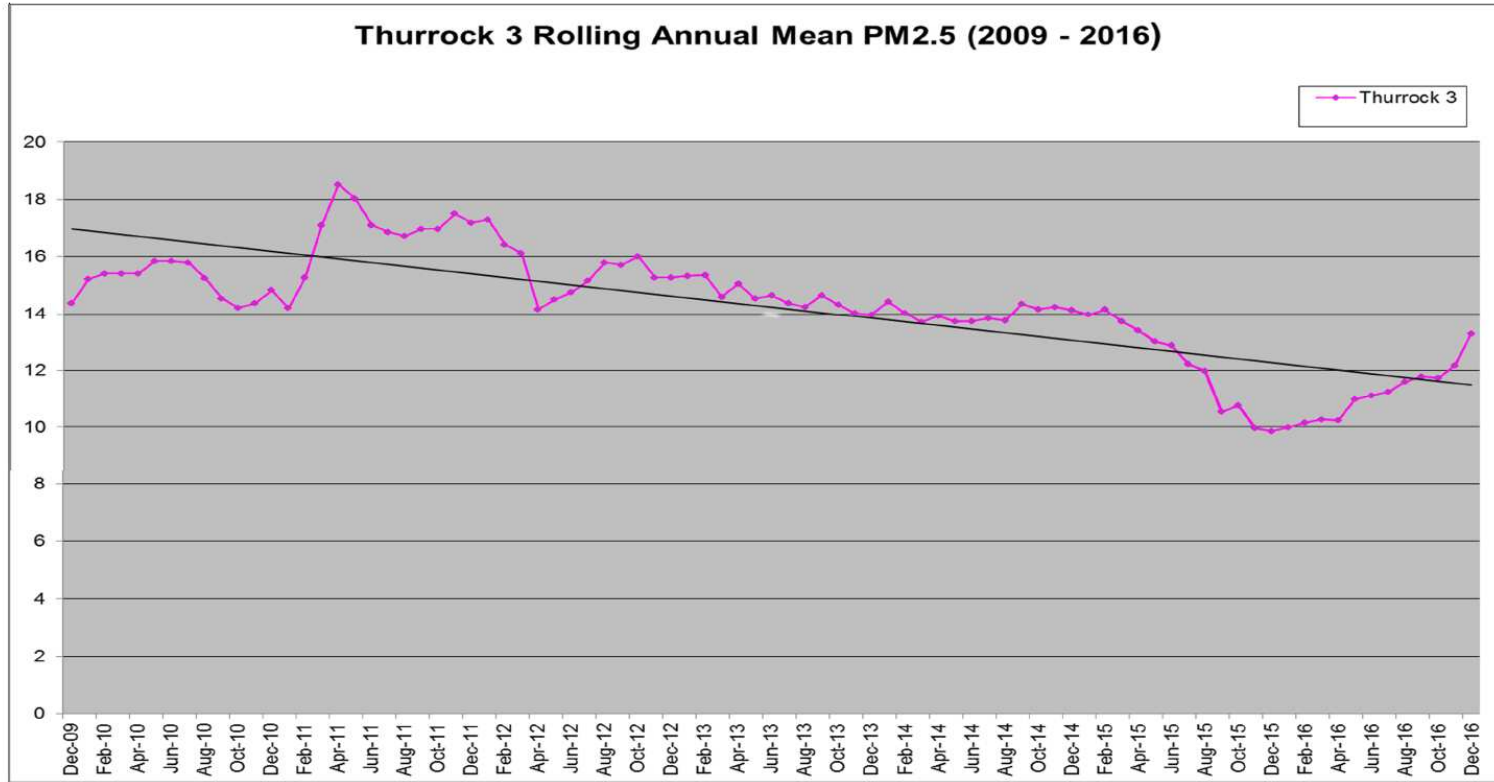
Trends in Annual Mean PM₁₀ Concentrations



Trends in Number of 24-Hour Mean PM₁₀ Results >50µg/m³



Trends in Annual Mean PM_{2.5} Concentrations



Government plans:

- Setting up a £255m implementation fund
- Establishing a Clean Air Fund, which will allow local authorities to bid for additional money to support the implementation of measure to improve air quality
- Assigning £100 million for retrofitting and new low emission buses
- To end the sale of all new conventional petrol and diesel cars and vans by 2040.

Electric vs Diesel



Len Rogers Collection