

Somers Town Neighbourhood Plan

Air Quality recommendations

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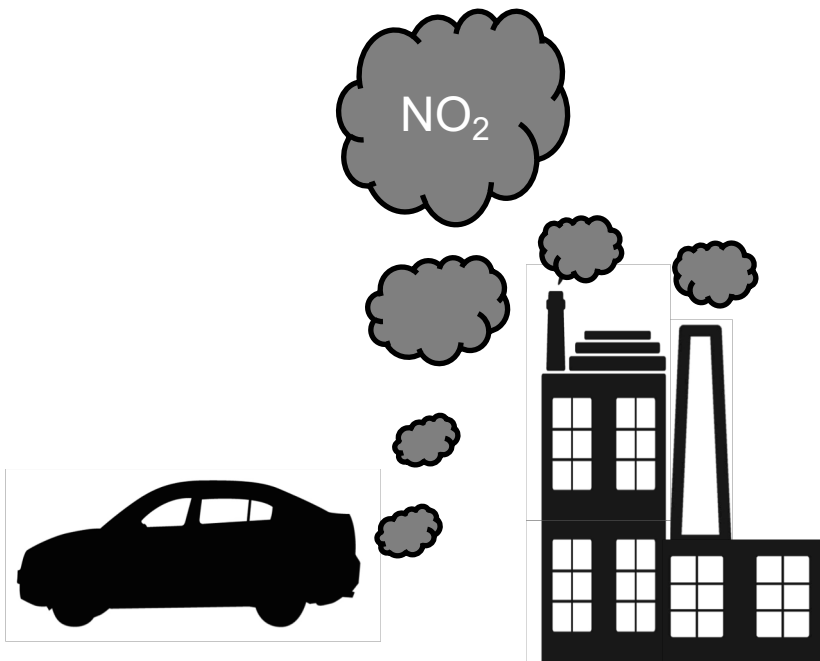
For UCL Engineering Exchange & STNF



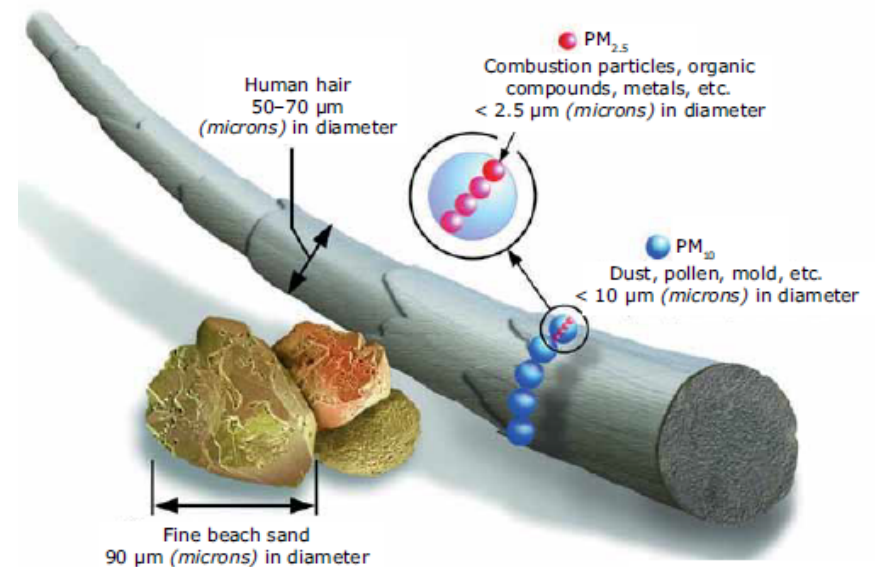
The
Engineering
Exchange

Key Pollutants

Nitrogen Oxides (NO_x)

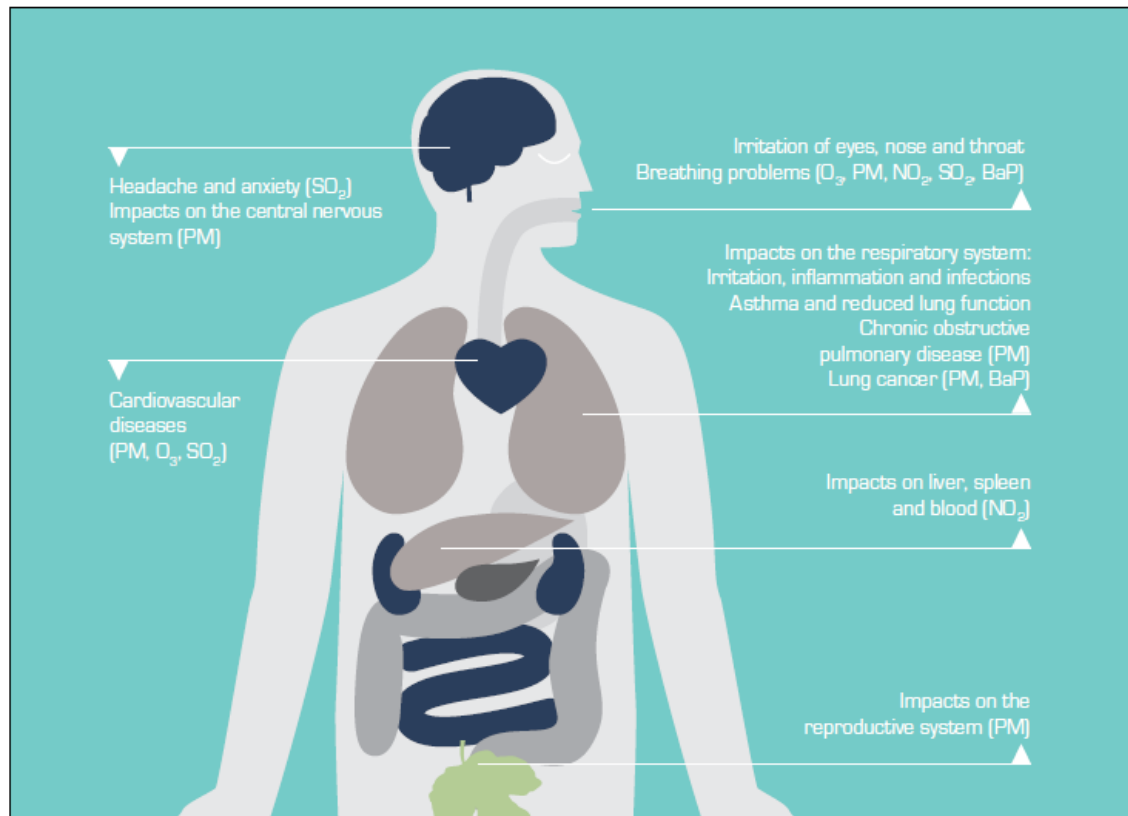


Particulate matter: Illustration of PM_{10} and $\text{PM}_{2.5}$ sizes



(Source: US Environmental Protection Agency 2010)

Key Pollutants & Health Effects



(Source: European Environment Agency (2014).
Air Quality in Europe – 2013)

Health Effects

Health effects occur due to exposure over lifetime



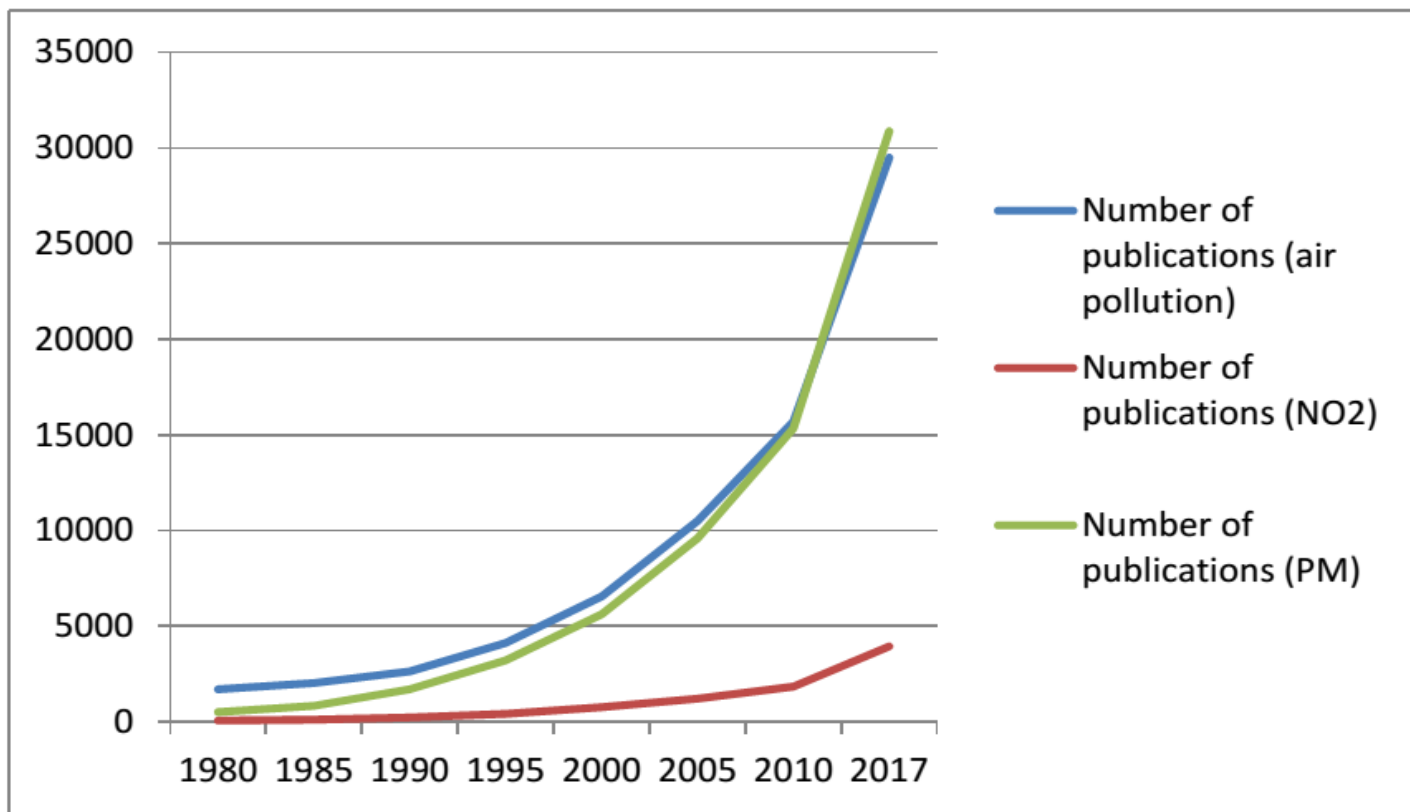
Health Effects

Particularly vulnerable are: young children, elderly, those with pre-existing cardiovascular and respiratory conditions including asthmatics.



Health Effects: PM versus NO₂ Effects

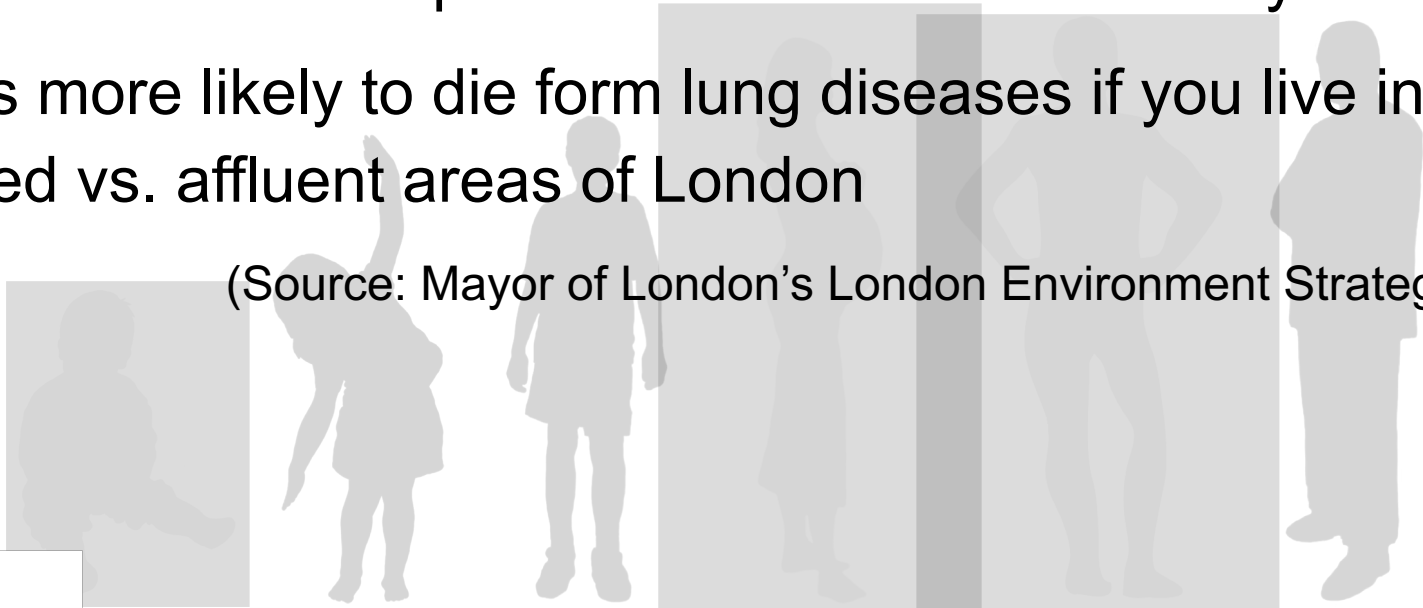
Air pollution publications – PM versus NO₂



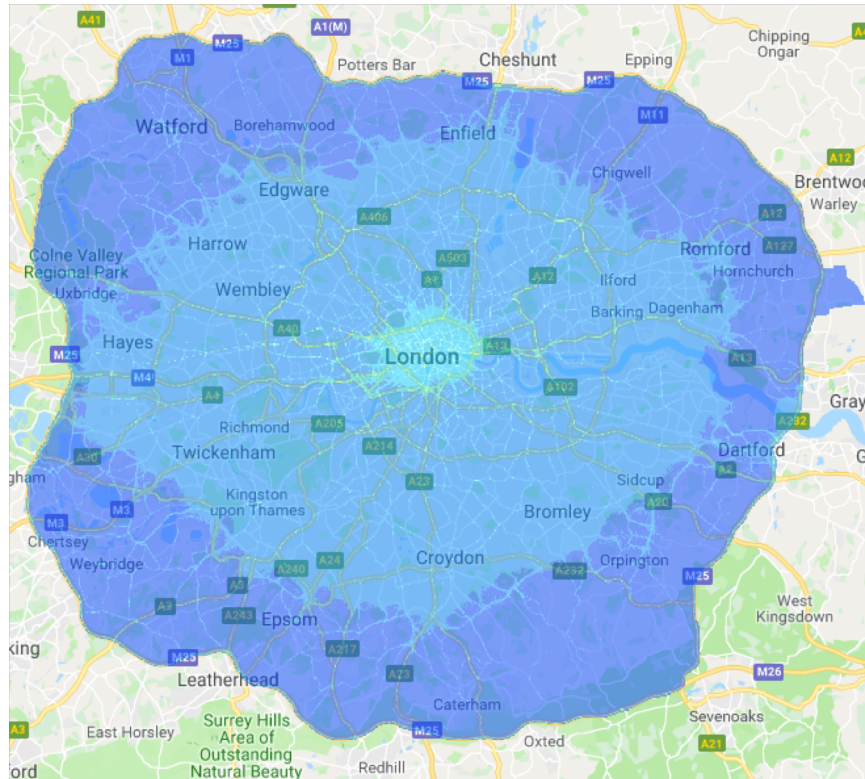
Health Effects

- mortality and morbidity (e.g. more asthma attacks)
- 9000+ Londoners die early every year because of air pollution
- £3.7 billion cost of air pollution to London's economy
- 2 times more likely to die from lung diseases if you live in a deprived vs. affluent areas of London

(Source: Mayor of London's London Environment Strategy 2018)



Targets



Mayor of London committed to setting new concentration targets for $PM_{2.5}$ to meet WHO guidelines by 2030.

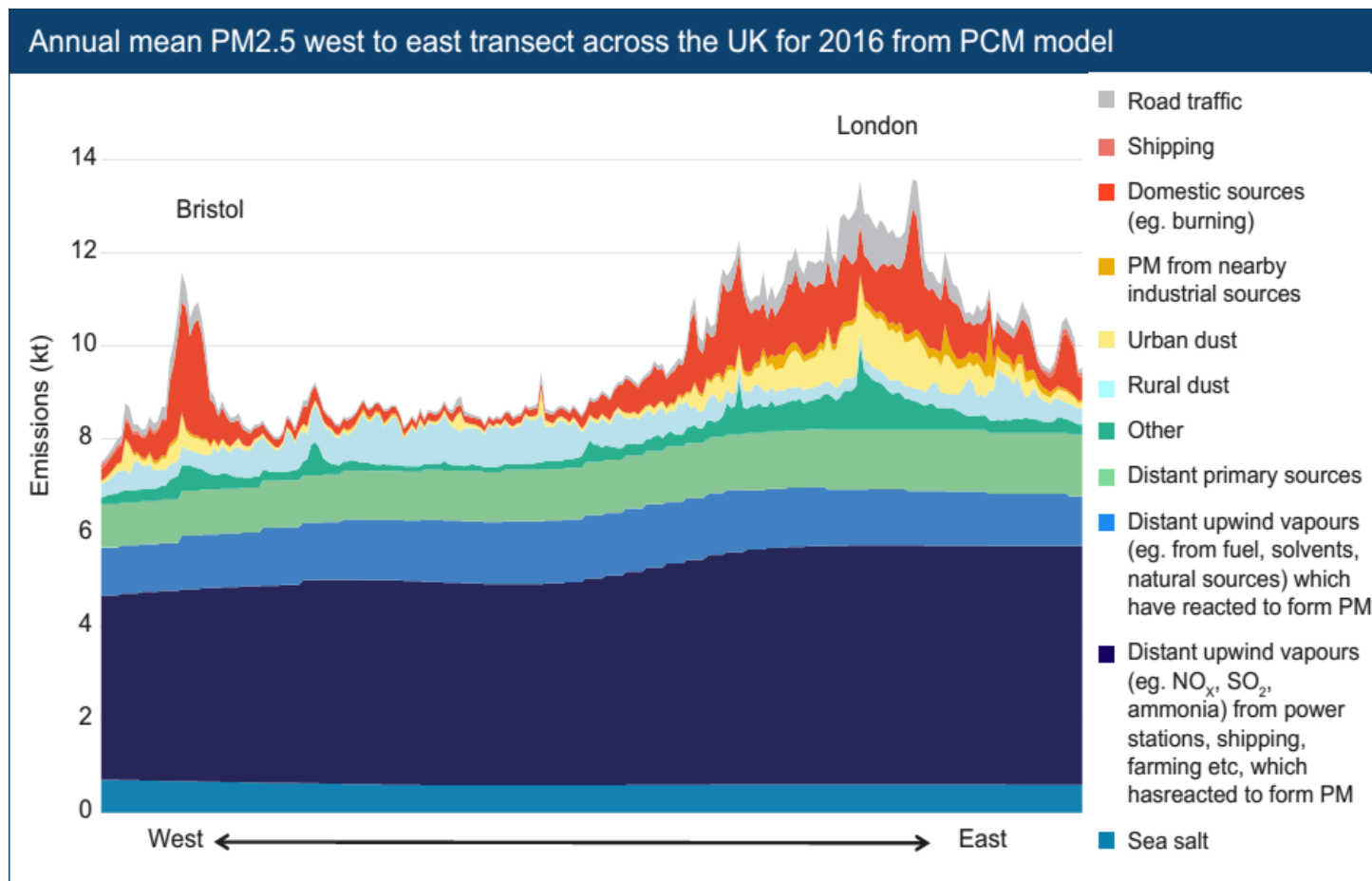
Camden Council has same target.

(Image: Modelled annual mean $PM_{2.5}$ levels, London Air Quality Network)

Key local sources of pollution

Emissions sources	PM _{2.5}	PM ₁₀	NO _x
Construction and Demolition Dust	0%	2%	0%
Resuspension	2%	27%	0%
Other	5%	3%	0%
Domestic and Commercial other Fuels	3%	2%	1%
Rail	4%	2%	2%
NRMM	16%	8%	4%
Domestic and Commercial Gas	8%	4%	12%
Road Transport	62%	53%	82%

Background pollution



Source: Defra's consultation draft clean air strategy, 2018

Monitoring in Somers Town

Diffusion tube

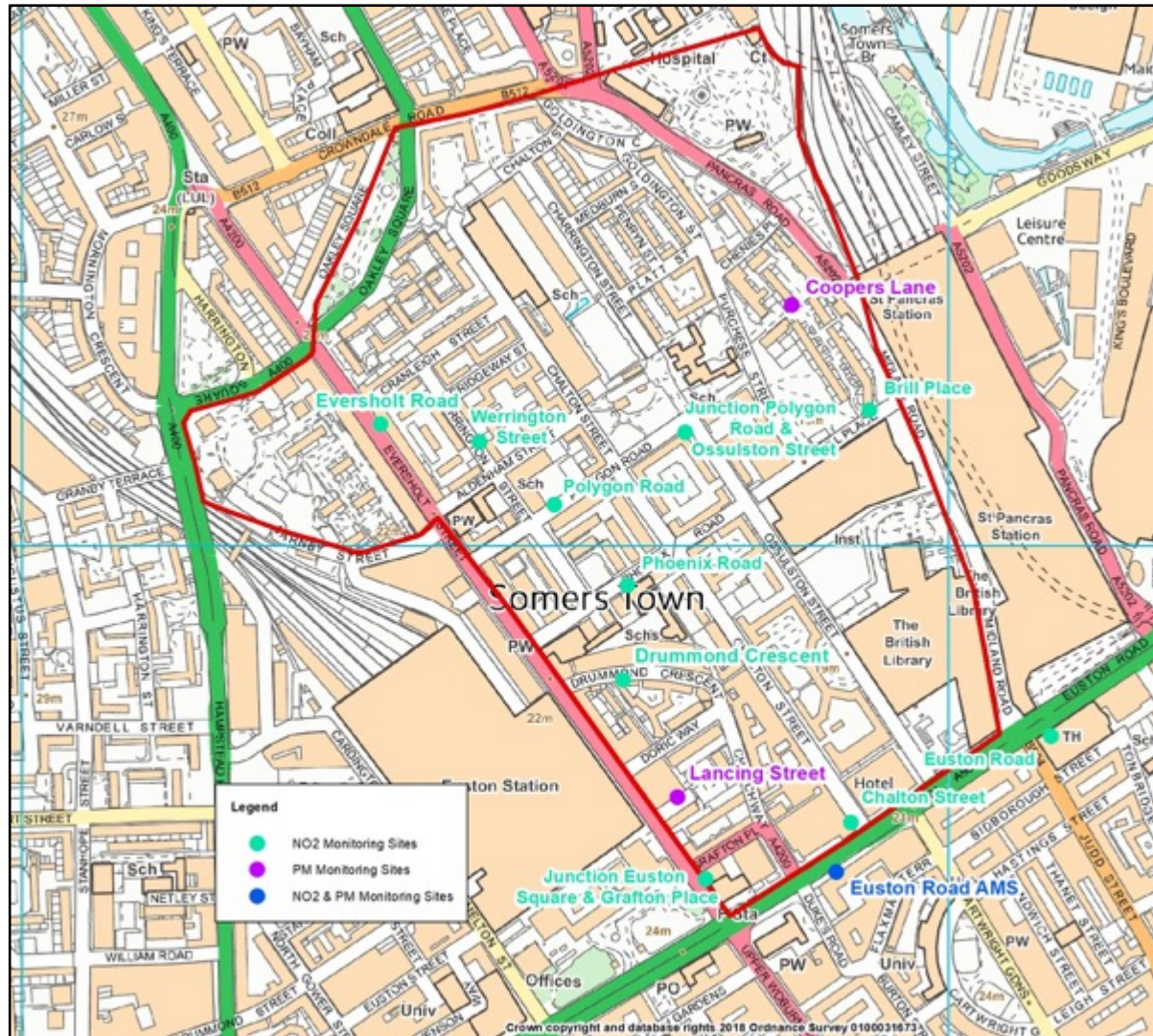


AMS on Euston Rd



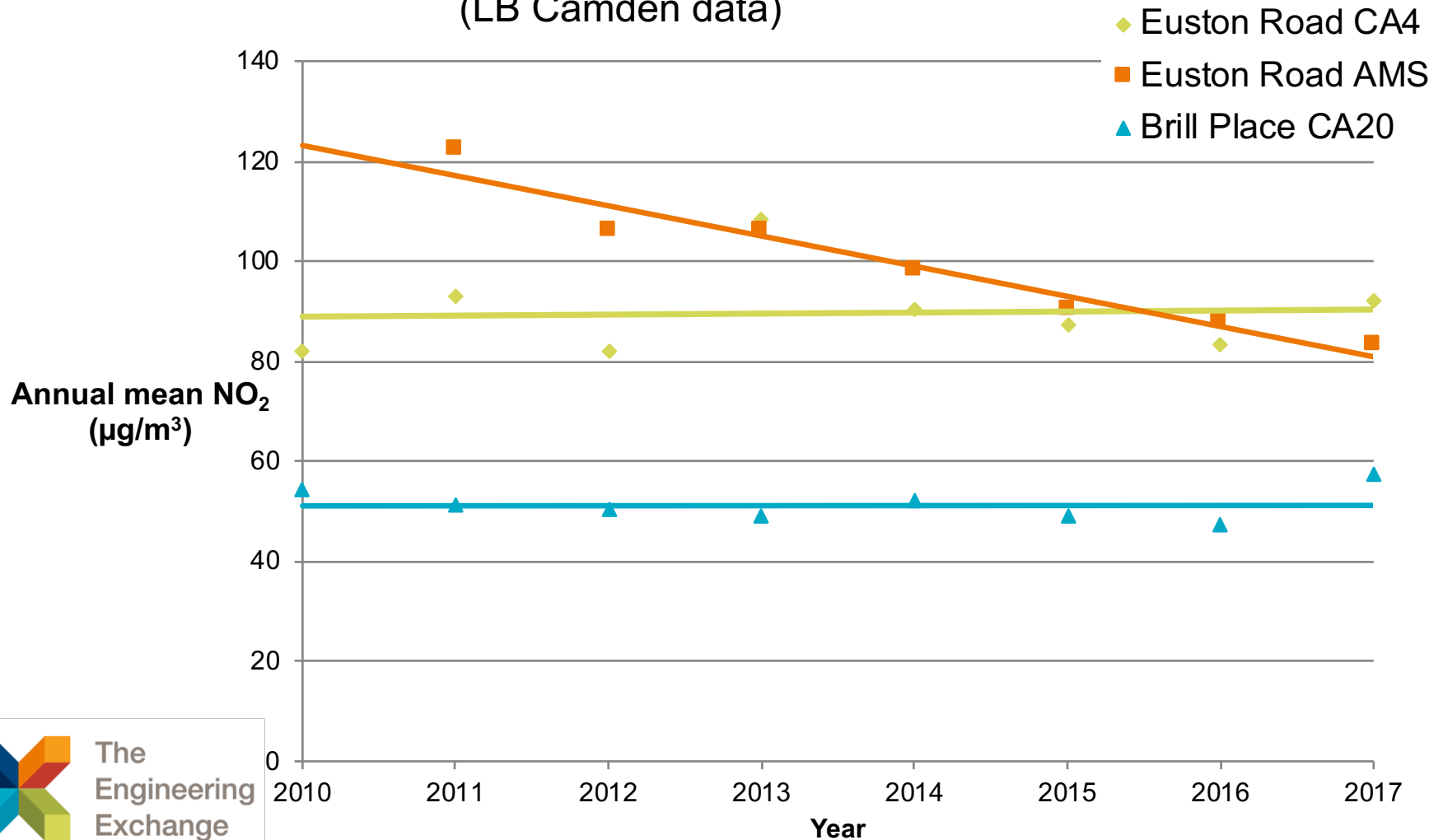
Image credit: London Air

Monitoring in Somers Town



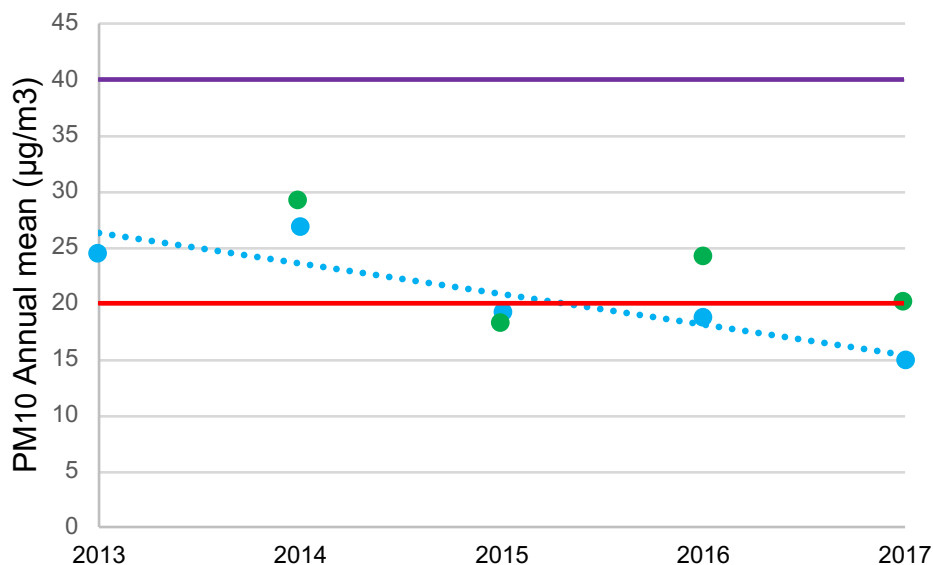
Monitoring in Somers Town

Annual mean NO₂ concentrations 2010 to 2017
(LB Camden data)

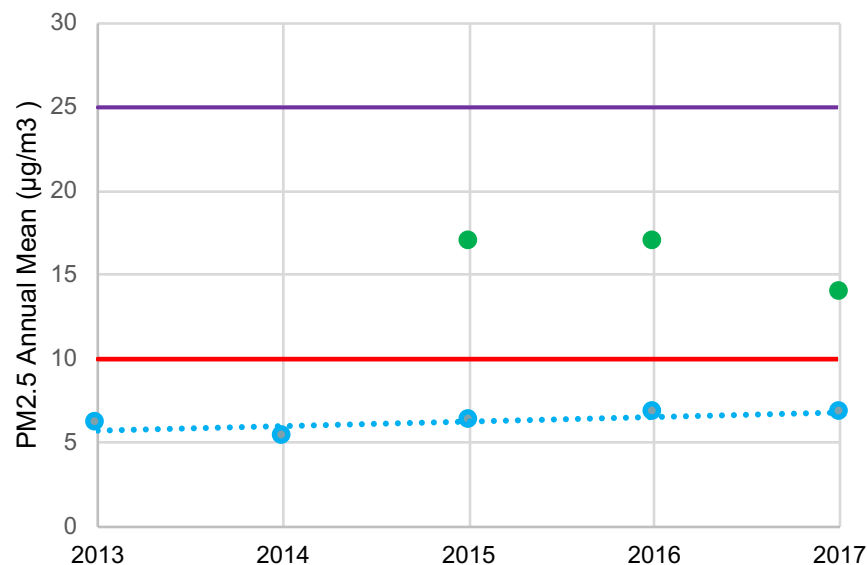


Monitoring in Somers Town

PM₁₀ Annual means ($\mu\text{g}/\text{m}^3$)
(LB Camden & Argent LLP data)



PM_{2.5} Annual means ($\mu\text{g}/\text{m}^3$)
(LB Camden & Argent LLP data)



● Coopers Lane

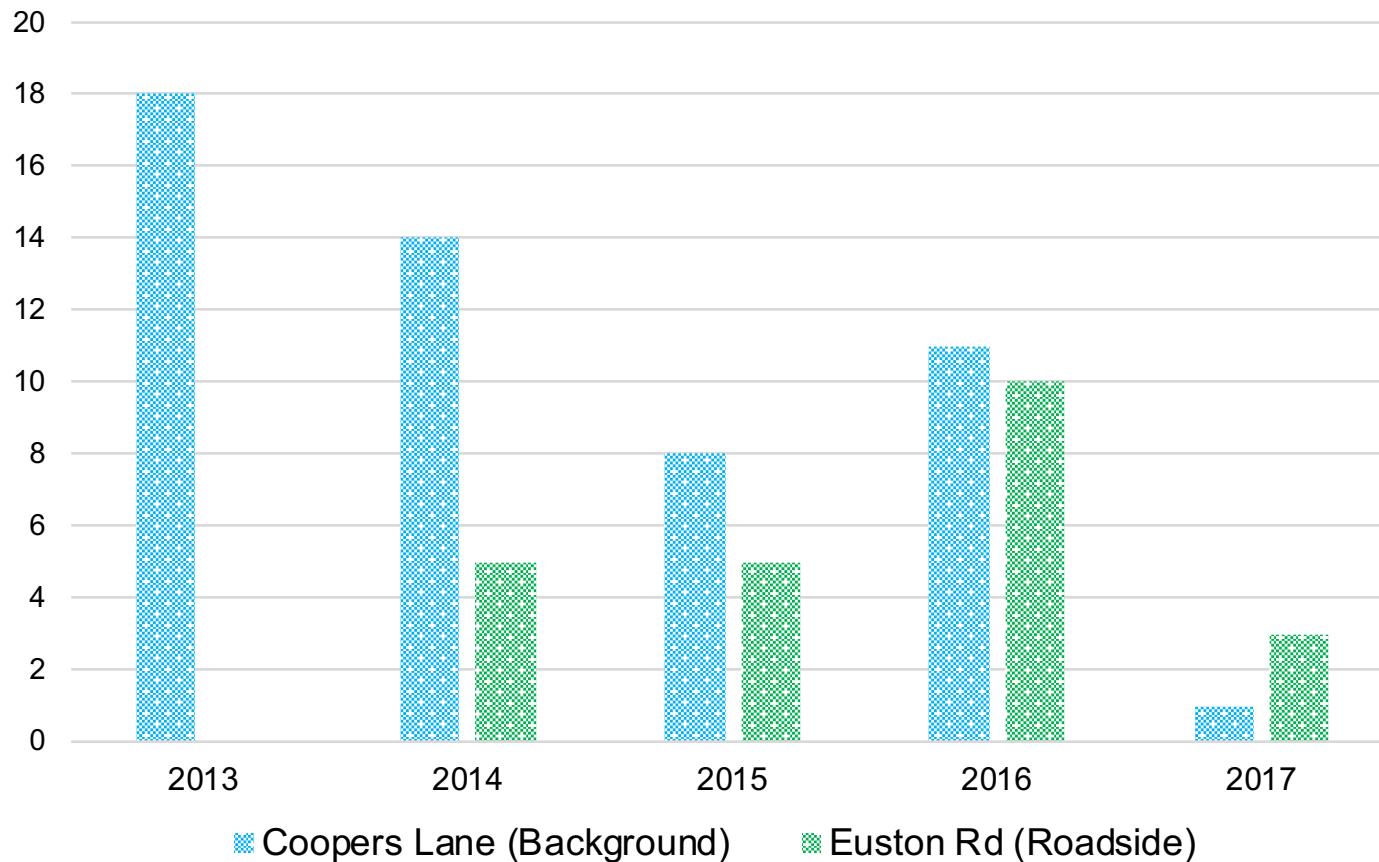
● Euston Road AMS

-- WHO guideline

-- Air Quality Objective

Monitoring in Somers Town

Number of days $\text{PM}_{10} > 50 \mu\text{g}/\text{m}^3$



Monitoring in Somers Town

Eversholt St

Monitored NO₂ (µg/m³) in 2017*

Werrington St

Polygon Rd

Phoenix Rd

Drummond Cr

Polygon Rd & Ossulston St

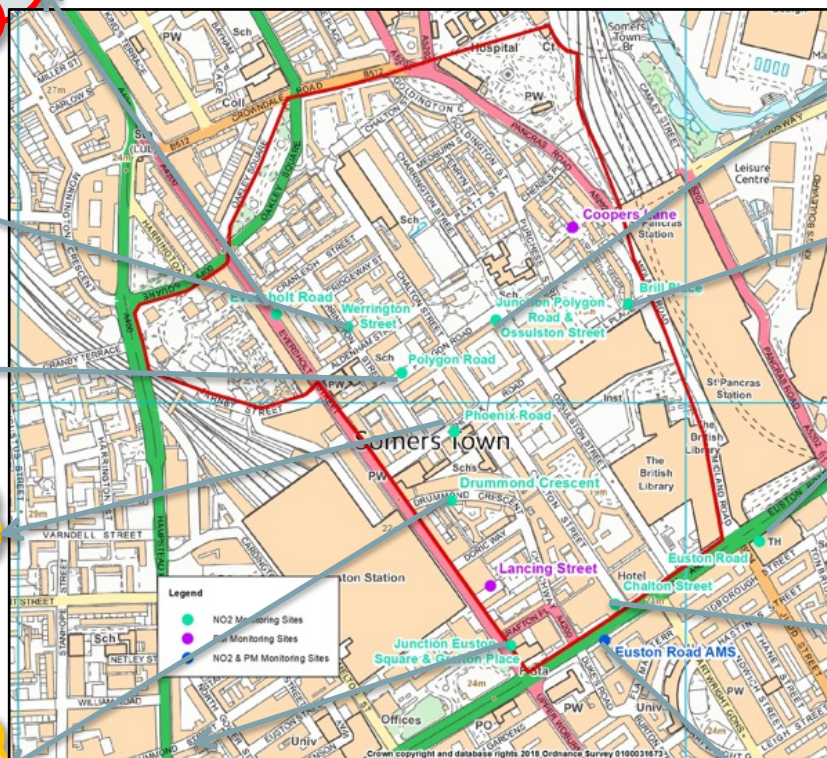
Brill Pl

Euston Rd

Chalton St

Euston Sq & Grafton Pl

Euston AMS



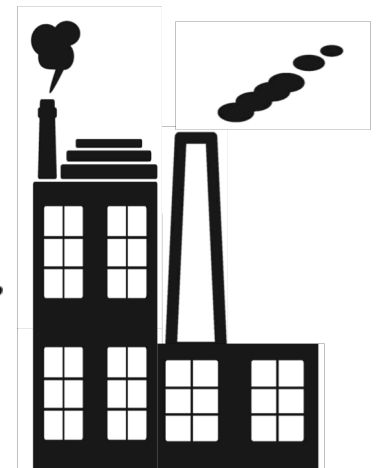
*Levels within Somers Town recorded by HS2 are likely to rise once the bias adjustment categories are revised.

Air Quality Assessments

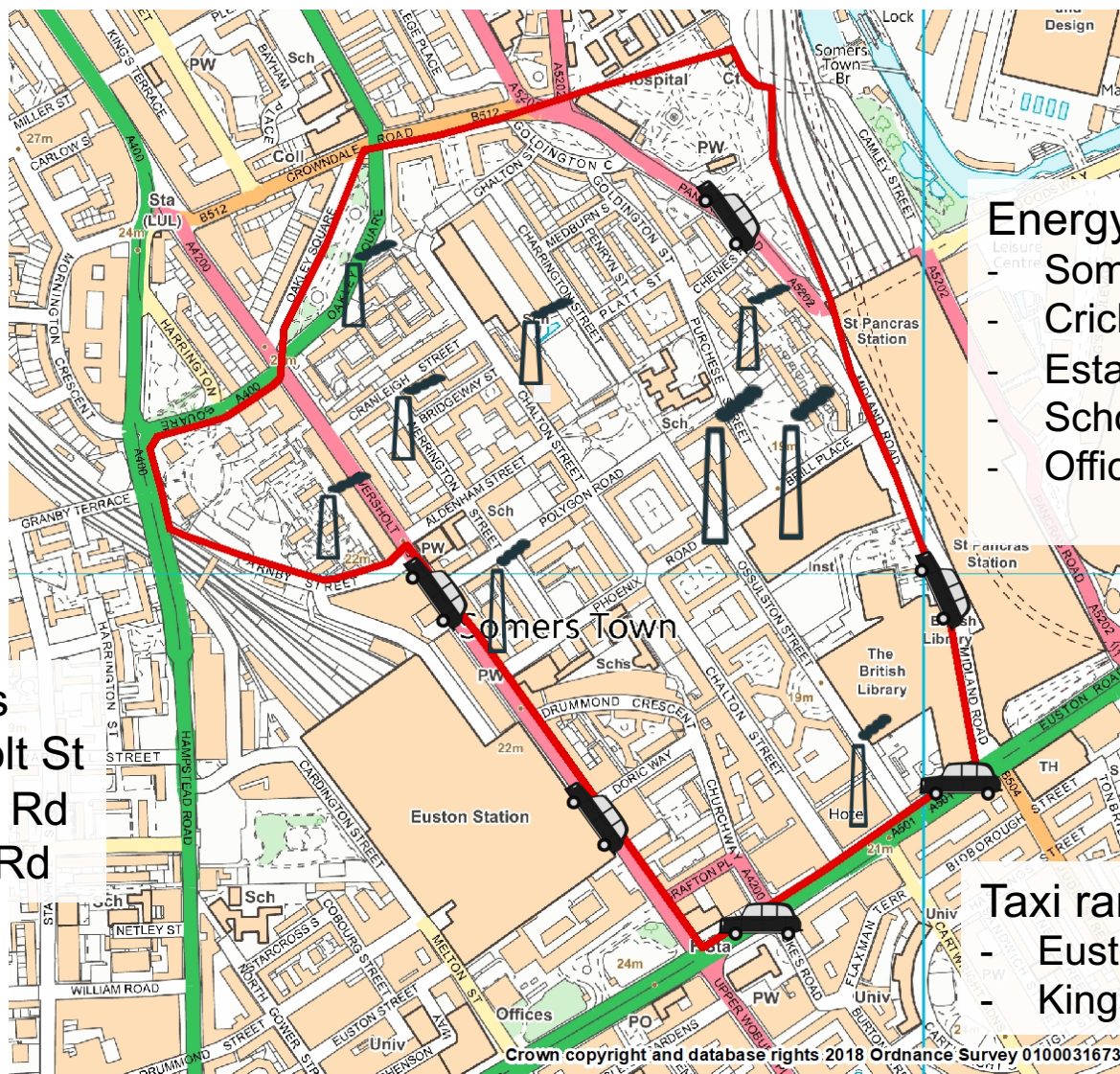
Should include:

- construction dust
- construction traffic (if more than 25 lorries per day averaged over a year)
- impact of traffic on exposure
- Impact of centralised boilers and heating systems and combined heat and power engines

Models need good input data including monitoring data to verify the model result.



Local Sources of Pollution



Busy roads

- Eversholt St
- Midland Rd
- Euston Rd

Energy

- Somers Town Energy
- Crick Institute CHP
- Estate boilers
- School boilers
- Office & hotel boilers

Taxi ranks

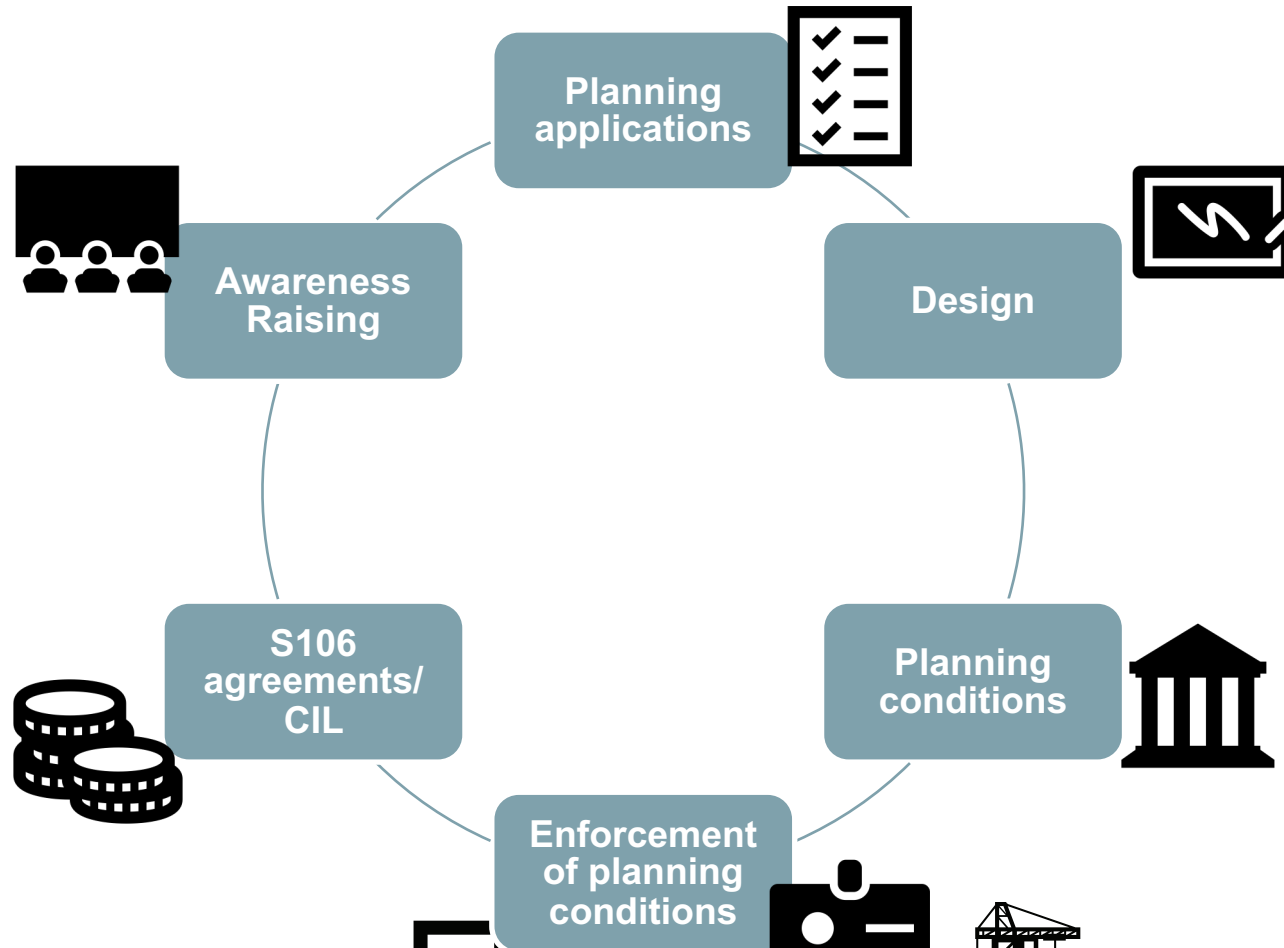
- Euston Station
- Kings Cross Station

London target

- To become the cleanest capital of a developed country by 2050.
- Ban on fossils fuels for transport, construction sites and heating.



Recommendations for STNF Plan



Recommendations



Planning Applications

- **Planning application summaries** - 2 pages written in non-technical language explaining impacts, mitigation measures and assessment methods used.
- **Air quality assessments** – use conservative background concentrations, justify verification method. Major developments' air quality assessments should include construction traffic impacts.
- **Air quality positive-** All major developments should be air quality positive in Somers Town

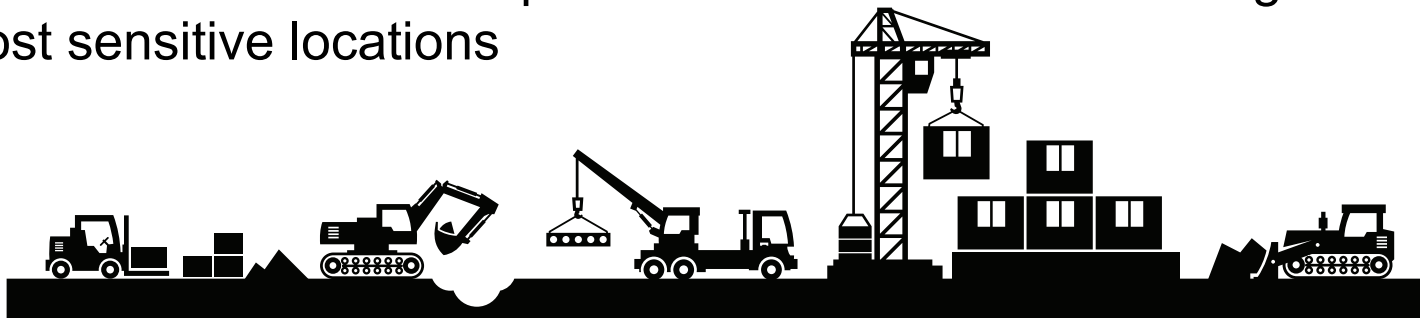


Recommendations



Design

- **Street Canyons** - new development should not create or exacerbate an existing street canyon
- **Space Heating** - electricity including the use of heat pumps would reduce emissions
- **Green Infrastructure** – include advice on where green infrastructure may be a useful mitigation measure
- **Clean Oases** – major developments should include outdoor space where planting is used to reduce very local air pollution levels
- **Sensitive Locations** - Special consideration should be given to the most sensitive locations

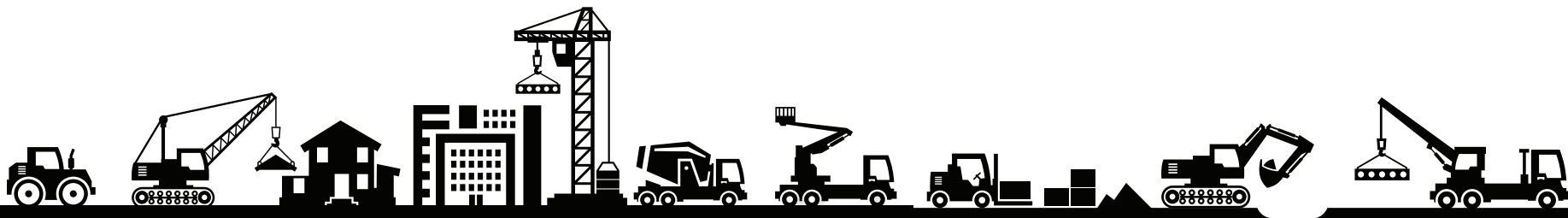


Recommendations

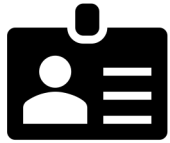


Planning conditions

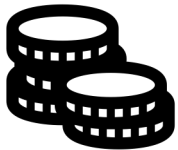
- Ensure that all major development submits an **Air Quality and Dust Management Plan** (AQDMP). Include a ban on construction vehicles during school start and finish times. Adopt Central London NRMM requirements, and consider electric construction equipment
- Require **electric charging provision** in developments with parking
- Monitor and revise **travel plans** annually
- New schools & extensions should **restrict private car access**.
- Require **details of installed boilers or CHP** engines to be submitted for approval prior to first operation or occupation of development



Recommendations



Enforcement of planning conditions – state expectation that residents' concerns of non-compliance are acted on by Camden Council



S106 Agreements / CIL – invest in long term background and roadside air quality monitoring sites



Awareness raising - use S106 / CIL money, or use STNF plan to require developers to raise awareness of health impacts



Overview

