



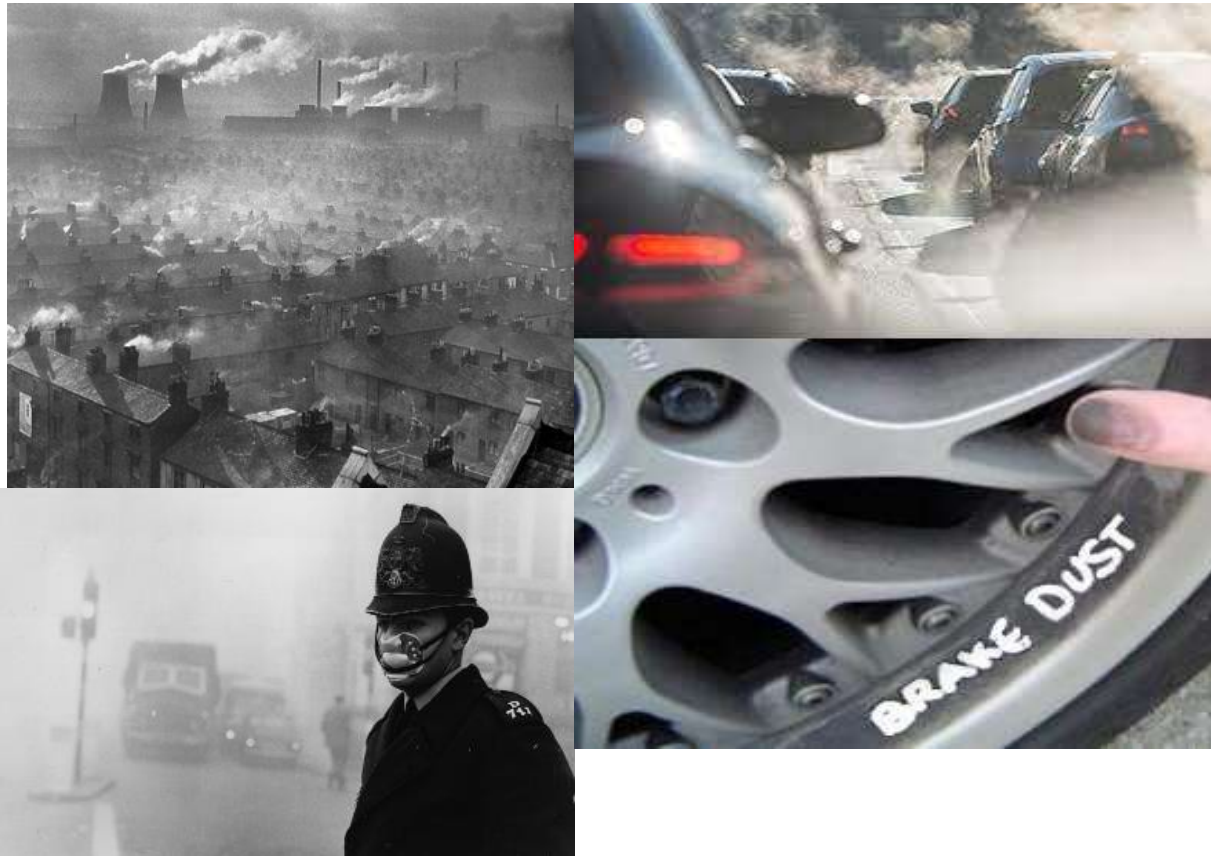
Air Quality in Three Rivers – A general overview.

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Air Quality in Three Rivers District Council

- What is Air Pollution and Air Quality?
- Explain the National Air Quality Objectives
- Discuss the air pollutants measured by Three Rivers District Council
- Discuss locations where pollution is measured
- Explain what pollution is like in TRDC
- Brief overview of some of what TRDC doing about air quality?

What is air pollution.



What is Air Quality

- National Air Pollution Objectives (NAQO) set by Government in law, duplicates EU Directive (Set in 1997)

National air quality objectives and European Directive limit and target values for the protection of human health							
Pollutant	Applies	Objective	Concentration measured as ¹⁰	Date to be achieved by and maintained thereafter	European obligations	Date to be achieved by and maintained thereafter	New or existing
Particles (PM ₁₀)	UK	50µg.m ⁻³ not to be exceeded more than 35 times a year	24 hour mean	31 December 2004	50µg.m ⁻³ not to be exceeded more than 35 times a year	1 January 2005	Retain existing
	UK	40µg.m ⁻³	annual mean	31 December 2004	40µg.m ⁻³	1 January 2005	
	Indicative 2010 objectives for PM ₁₀ (from the 2000 Strategy and 2003 Addendum) have been replaced by an exposure reduction approach for PM _{2.5} (except in Scotland – see below)						
	Scotland	50µg.m ⁻³ not to be exceeded more than 7 times a year	24 hour mean	31 December 2010			Retain existing
	Scotland	18µg.m ⁻³	annual mean	31 December 2010			
Particles (PM _{2.5}) Exposure Reduction	UK (except Scotland)	25µg.m ⁻³	annual mean	2020	Target value 25µg.m ⁻³ ¹²	2010	New (European obligations still under negotiation)
	Scotland	12µg.m ⁻³		2020	Limit value 25µg.m ⁻³	2015	
	UK urban areas	Target of 15% reduction in concentrations at urban background ¹¹		Between 2010 and 2020	Target of 20% reduction in concentrations at urban background	Between 2010 and 2020	
Nitrogen dioxide	UK	200µg.m ⁻³ not to be exceeded more than 18 times a year	1 hour mean	31 December 2005	200µg.m ⁻³ not to be exceeded more than 18 times a year	1 January 2010	Retain existing
	UK	40µg.m ⁻³	annual mean	31 December 2005	40µg.m ⁻³	1 January 2010	
Ozone	UK	100µg.m ⁻³ not to be exceeded more than 10 times a year	8 hour mean	31 December 2005	Target of 120µg.m ⁻³ not to be exceeded more than 25 times a year averaged over 3 years	31 December 2010	Retain existing

What is Air Quality Cont.

Particulate Matter (PM₁₀ and PM_{2.5})

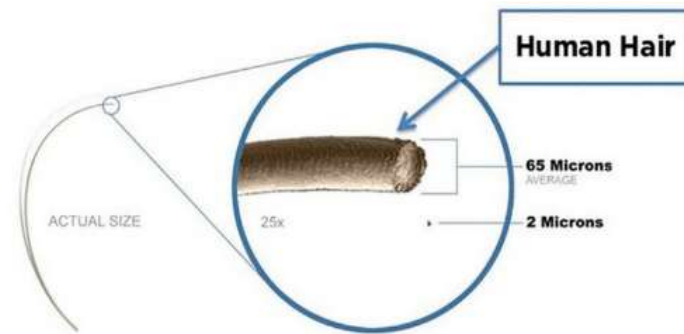
Particle pollution.

PM₁₀ describes inhalable particles, with diameters that are generally 10 microns and smaller.

PM_{2.5} less than 2.5 micromicrons in size.

Sources:

- Human Made Sources, Vehicles (inc tyre and brake wear) Industrial Combustion, Residential Combustion, Smoking.
- Industrial Processes including mining and construction/demolition
- Natural Sources, dust, wildfires, volcanic ash, pollen and spores, resuspension.



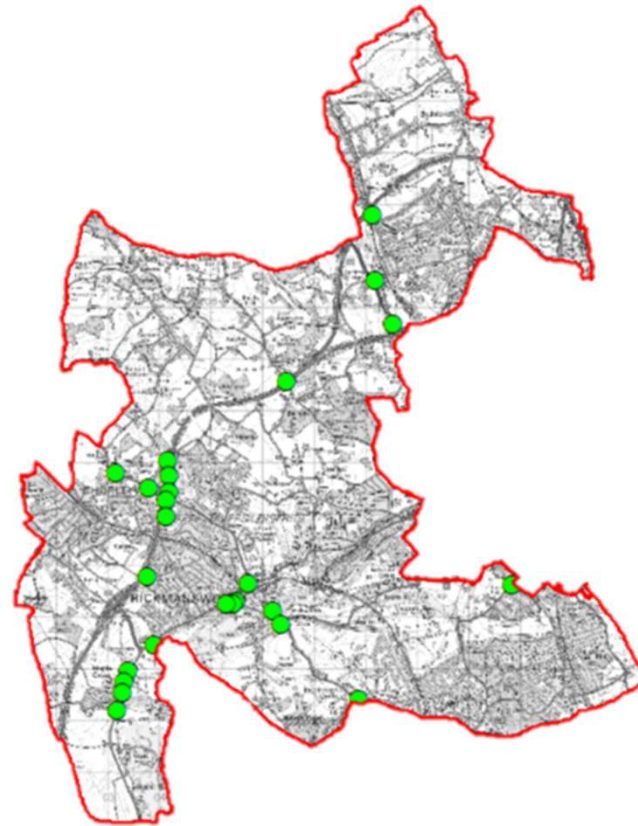
What is Air Quality and how is it measured

- **Nitrogen Dioxide (NO₂)**
- A gas air pollutant produced as a result of road traffic and other fossil fuel combustion processes. Its presence in air contributes to the formation and modification of other air pollutants, such as ozone and acid rain (Nitric Acid) .
- NO₂ is monitored as it is a good indicator of pollution, rather than specifically direct health impacts from NO₂. This is important when considering the monitoring undertaken by TRDC and most local authorities.
- Monitoring is normally carried out using automatic continuous monitors or passive (diffusion tubes).



What is Air Quality and how is it measured

- Three Rivers District Council undertook non-automatic (i.e. passive) monitoring of NO₂ at 25 sites.
- These sites are focused around areas of congestion, busy roads and near relevant receptors. Inc residential, work places, schools and locations where people are likely to spend significant time outdoors.
- *All data is reported annually in our Annual Status Reports (ASR) available at:
<https://www.airqualityengland.co.uk/local-authority/hnb-reports>



Health Impacts

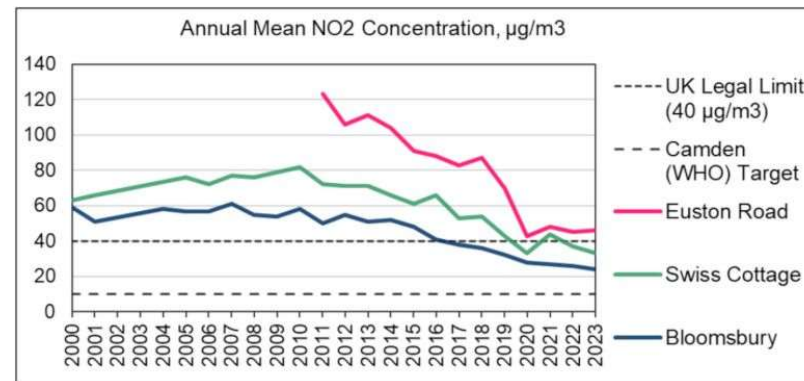
Particulate matter (PM)

- Is everything in the air that is not a gas.
- Due to the small size may enter lungs, the bloodstream and be transported around the body, lodging in the heart, brain and other organs.
- Can result in serious impacts to health, especially in vulnerable groups of people such as the young, elderly, and those with respiratory problems.
- National Air Quality Objective levels based on evidence on the effects of PM to health.

Health Impacts Cont.

Nitrogen Dioxide

- Increased levels on NO₂ has been linked to reduced life expectancy
- But unclear if effects caused by NO₂ itself or by other pollutants emitted by the same sources (such as traffic).
- Reduced lung function and lung function growth, increases in respiratory symptoms, asthma prevalence and incidence, cancer incidence, adverse birth outcomes and mortality
- National Air Quality Objective levels based on evidence on the effects of NO₂ to health.
- *Just for perspective in Camden objective still exceeded AQO's (Post 2019 (ULEZ) levels can be seen to drop. 2011 >120ugm3. - 46ugm3).*



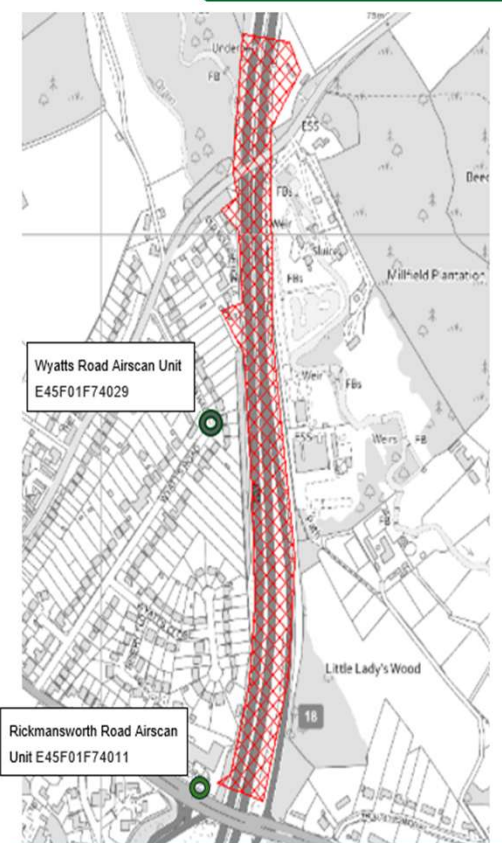
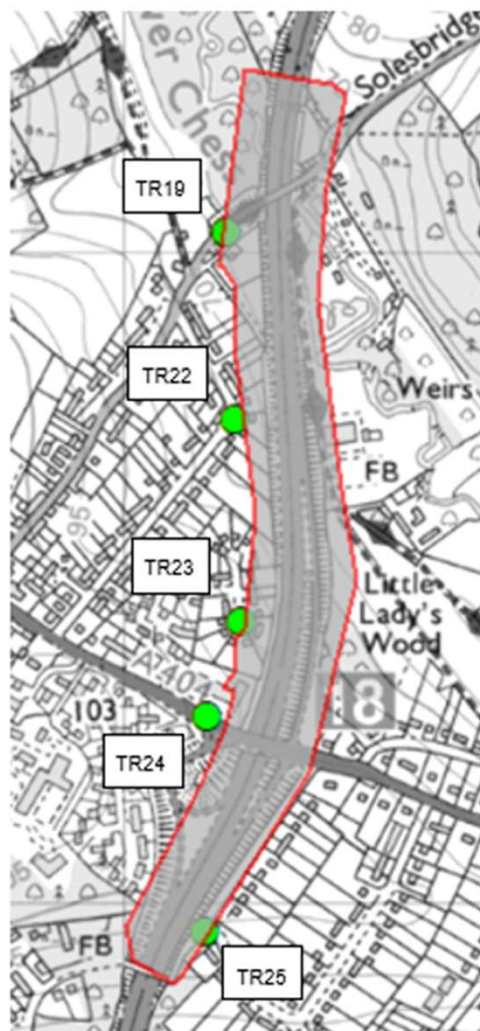
Air Quality in TRDC

Where Air Quality Objective levels are exceeded a local authority must declare an Air Quality Management Area.

Three Rivers District Council has 2 AQMA's based in a similar location.

Chorleywood NO₂ AQMA was declared in April 2001. The NO₂ AQMA is an area along the M25 south of Junction 18 to just north of where the motorway crosses the River Chess.

Chorleywood PM₁₀ AQMA was declared in April 2001. The PM₁₀ AQMA is a slightly narrower area from just north of Junction 18, along the M25 to just north of where the motorway crosses the River Chess.



Air Quality in TRDC

AQMA Name	Pollutant	AQ Objective Level (Micrograms per m3)	Last years data	No of years compliant
Chorleywood NO ₂ AQMA	NO ₂	40	22.5	2 (This years data will be 3 years).
Chorleywood PM ₁₀ AQMA	PM ₁₀	50 on more than 35 occasions per year	Two Airscan Units have been deployed with the AQMA	Unable to advise.

Air Quality in TRDC

- In 2023, NO₂ concentrations did not exceed the annual mean objective at any of the Council's diffusion tube sites. There is a general trend of reduction over the last 2 years. There were no exceedances of the 1-hour objective.
- The highest annual mean NO₂ concentration recorded within the Chorleywood NO₂ AQMA was at Old Solesbridge Lane (23.86ug/m³). * (note higher than previous slide as average of 4 locations in AQMA)
- All NO₂ results significantly below AQO's
- Data from the airscan units needs to be reviewed, but as a provisional review data is showing in the order of 7ug/m³ i.e. significantly below the National limit value.

Actions Taken by TRDC

- Local Plan- Sets out future growth and development
- Climate Emergency & Sustainability Strategy 2023-2027 – Sets out plans to deliver substantial carbon emission reductions to reduce their own emissions by 2030, and support the District in reaching net-zero carbon by 2045.
- Other examples include:
 - Reduce impact of Travel by reviewing own fleet,
 - Encouraging and promoting more sustainable modes of transport, coordination of public transport via Intalink partnership
 - Planned EV charge facilities.
- (More detail of actions in 2023 ASR and will be updated in 2024 ASR).

Thank you

Any Questions?