

Kent State of the Environment Report: Air Quality Update

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Next update: Winter 2020

This data is published by the Sustainable Business and Communities Team of Kent County Council

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Key facts

Poor air quality is a major health challenge for the UK, wider EU and global community, causing both long and short-term effects on health. Annually it is estimated that 40,000 deaths are attributable to exposure of outdoor air pollutants, adding an additional £20 billion in costs and loss of productivity every year.

The main pollutants of concern in the UK and wider Europe are particulate matter (PM), oxides of nitrogen (NO_x), and ozone (O₃), with PM being the most significant in terms of health impacts.

The assessment of air quality levels is carried out by each local authority as part of the Local Air Quality Management Local Authorities section of the 1995 Environment Act. The EU has also set legislation which sets limits for concentrations of major outdoor air pollutants. When these levels are exceeded, local authorities are required to declare these areas and work towards achieving the air quality objectives through measures specified in a local Air Quality Action Plan (AQAP).

Kent and Medway Air Quality Monitoring Network (KMAQMN) Annual Report 2018

In 2018, there were 17 monitoring sites with automatic instruments across Kent and Medway. There is a data capture target of 90%, and this was achieved at all stations that monitored throughout the year.

The Air Quality Strategy (AQS) objective for the **Nitrogen Dioxide Annual Mean** ($40\mu\text{g m}^{-3}$) was exceeded at Maidstone Upper Stone Street with an annual mean of $65\mu\text{g m}^{-3}$ and at Tonbridge Roadside 2 with an annual mean of $47\mu\text{g m}^{-3}$ ($3\mu\text{g m}^{-3}$ less than in 2017). The highest hourly mean Nitrogen Dioxide concentration was $214\mu\text{g m}^{-3}$ at Maidstone Upper Stone Street – but all stations were below the target annual allowance of 18 hours.

The **annual mean PM₁₀ concentrations** at all monitoring stations was less than the AQS Objective of $40\mu\text{g m}^{-3}$. However, all PM₁₀ monitoring stations measured daily mean concentrations greater than $50\mu\text{g m}^{-3}$, Tunbridge Wells A26 Roadside measured 13 days greater than this limit, but no station exceeded the AQS Objective which has an annual allowance of 35 days.

All stations measured **PM_{2.5} annual mean concentrations** as less than the AQS Objective than $25\mu\text{g m}^{-3}$ - the highest PM_{2.5} annual mean concentration was $18\mu\text{g m}^{-3}$ measured at Maidstone Upper Stone Street. But **ozone** exceeded the AQS Objective on the Canterbury AURN monitoring station on 36 days and Rochester Stoke AURN on 35 days. There is an annual allowance of 10 days, and there were many more ozone episodes during the summer of 2018 compared to 2017.

As defined by the Daily Air Quality Index (DAQI) there were 3 days of Very High air quality with PM_{2.5} at the St Pauls Street Station in December, ranging from 145µg m⁻³ to 160µg m⁻³. High PM₁₀ days were recorded at Swale Ospringe Roadside 2, Thanet Birchington Roadside and Thanet Ramsgate Roadside.

There were 78 days across the year that were classed as air pollution episodes for at least 1 pollutant, and 29 other separate episode periods. More episode days were due to Ozone, followed by PM₁₀, PM_{2.5}, and Nitrogen Dioxide.

Summary

Looking at the long-term trends, Nitrogen Dioxide, PM₁₀ and PM_{2.5} annual mean concentrations are falling in line with the national trends – this includes a slight increase in 2018 for PM₁₀ and PM_{2.5}. This was also the case when looking at the trends for local monitoring stations, but there remains to be no long-term trend available for Ozone peak concentrations.

It has been estimated that 922 deaths were associated to PM_{2.5} in Kent and Medway in 2017. To reduce the incidence of these negative effects it is crucial to keep monitoring Kent's air quality, as well as continuing to improve the rural and urban air quality for all residents.

Further reading

- 1995 Environment Act: Local Air Quality Management Local Authorities <http://www.legislation.gov.uk/ukpga/1995/25/part/IV>
- Local Air Quality Management Technical Guidance LAQM (TG16) <https://laqm.defra.gov.uk/technical-guidance>
- Air Quality Action Plan (AQAP) <http://www.kentair.org.uk/>
- Clean Air Strategy <https://www.gov.uk/government/publications/clean-air-strategy-2019>

Data sources

Kent and Medway Air Quality Monitoring Network (KMAQMN) Annual Report 2018
<http://www.kentair.org.uk/Pagesfiles/KMAQMN%20Annual%20Report%202018.pdf>

The Kent and Medway Energy and Low Emissions Strategy – under public consultation until 23rd September 2019
<https://consultations.kent.gov.uk/consult.ti/energyandlowemissionconsultation/consultationHome>

Air quality information pack, Kent and Medway Air Quality Partnership – Health Sub-Group
<http://healthsustainabilityplanning.co.uk/wp-content/uploads/2014/12/Air-Quality-Impacts-Information-Pack.pdf>

Every breath we take – the lifelong impact of air pollution, Royal College of Physicians and the Royal College of Paediatrics and Child Health, February 2016
<https://www.rcplondon.ac.uk/projects/outputs/every-breath-we-take-lifelong-impact-air-pollution>

Report to European Commission DG Environment, Cost–benefit analysis of final policy scenarios for the EU Clean Air Package (corresponding to IIASA TSAP report no 11), Holland, M. (2014)
<http://ec.europa.eu/environment/air/pdf/TSAP%20CBA.pdf>

Air Quality in Europe – Report 2016, European Environment Agency
<https://www.eea.europa.eu/publications/air-quality-in-europe-2016>