

CHART OF THE MONTH: AIR QUALITY AND NO₂ POLLUTION

1. What is NO₂ and what are the health effects associated to it?

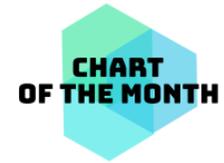
- Nitrogen Dioxide (NO₂) is a brown gas that forms part of polluting gases produced from fossil fuel combustion mainly from road traffic and other industrial emissions.
- Air pollution is the biggest environmental threat to health in the United Kingdom, with between 28,000 and 36,000 deaths attributed to long-term exposure.
- Short-term and long-term exposure to NO₂ emissions can cause serious harm to health. Short-term exposure to NO₂ can be associated with throat irritation, inflammation of airways and respiratory infections in the form of cough and shortness of breath. Long-term exposure can cause severe damage to both the respiratory and cardiovascular systems
- Oxfordshire is taking measures to reduce NO₂ emissions, particularly from transport pollution in key isolated pockets near busy roads which contribute to the overall pollution in cities and rural areas.

2. Air Quality Management areas (AQMAs) in Oxfordshire

- Air Quality Management Areas are zones where local authorities have identified that air quality objectives are not likely to be achieved by the relevant deadlines.
- Local authorities have implement Air Quality action plans to improve the health and the environment in the local communities. There are currently 13 AQMAs in Oxfordshire and each one of them has its own action plan to reduce pollution.

Please see a list of districts and their AQMAs bellow.

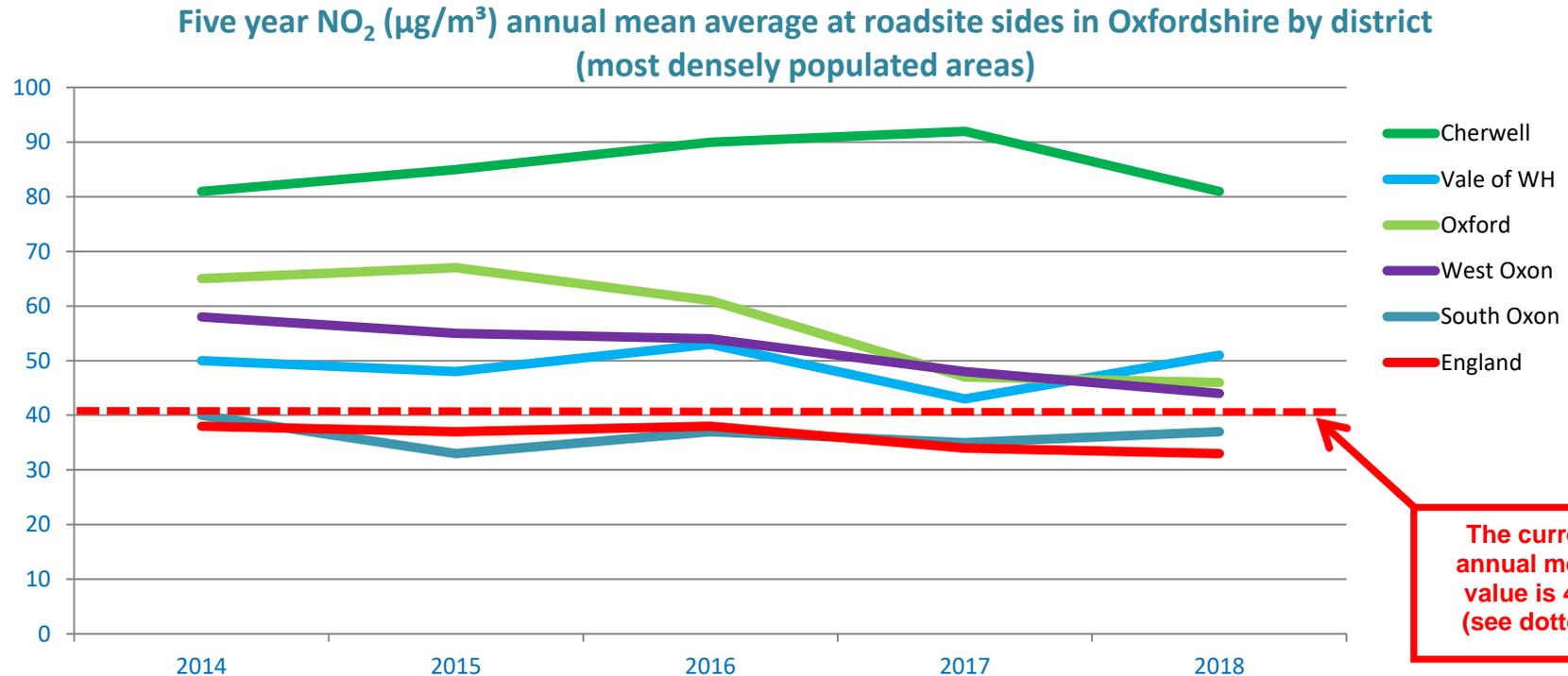
- **Cherwell:** Banbury 1 & 2, Bicester, Kidlington.
- **Oxford:** Oxford city.
- **South Oxon:** Henley, Wallingford, Watlington.
- **Vale of WH:** Abingdon, Botley, Marcham.
- **West Oxon:** Chipping Norton.



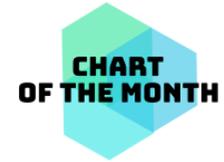
3. How is NO₂ measured in Oxfordshire?

- There is a dedicated team of air quality officers across all districts of Oxfordshire in charge of monitoring changes in air quality and pollution associated to NO₂ and other damaging air pollutants.
- Air quality is measured in Oxfordshire using automatic air quality monitoring stations and passive monitoring techniques (also known as diffusion tubes).

The following chart shows the level of NO₂ emissions at the roadside of most densely populated areas in Oxfordshire over a period of 5 years. These measurements were carried out using a combination of diffusion tubes and automatic monitoring stations. The current NO₂ annual mean limit value is 40µg/m³ (see dotted line below).



Source: District's Air Quality Annual Status reports, 2019



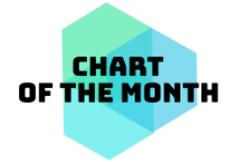
The following table provides the highest annual mean reading for NO₂ of the most densely-populated areas in Oxfordshire (by district).

Figure 2.0 Yearly figures across Oxfordshire AQMA and England mean average.

Year	Cherwell (Hennef Way)	Oxford (St. Clements)	South Oxon (Wallingford)	Vale of WH (Packhorse Ln)	West Oxon (Horsefair)	England Average
2014	81	65	40	50	58	38
2015	85	67	33	48	55	37
2016	90	61	37	53	54	38
2017	92	47	35	43	48	34
2018	81	46	37	51	44	33

Source: Extract from all district's Air Quality Annual Status Reports, 2019

- Since 2014 there has been a downward trend in levels of NO₂ pollution for most of the districts, particularly Oxford City and West Oxfordshire'.
- Cherwell scored the highest levels of pollution between 2014 and 2017. However, it has decreased in 2018 which remains to be seen if this downward trend continues.
- South Oxfordshire is currently the only district that registers NO₂ emissions below national average.
- Oxford city has embarked on a journey towards becoming the world's first Zero Emission Zone by 2035. This project will begin by banning petrol and diesel vehicles from the city centre by December 2020, expanding further by 2021-22 and ultimately covering the whole city by 2035.
- There is still work to be done in Oxfordshire to reach England's average readings of 40 µg/m³
- **Please note** England's average is a combination of both rural and urban NO₂ readings. This limits the way in which each district scores against it, as rural areas are further way from traffic emission sources and therefore, tend to register lower NO₂ readings.



References:

[Air Index EU](#)
[Air Quality England](#)
[AQMA](#)
[Cherwell Air Quality](#)
[Health Matters: Air Pollution](#)
[List of AQMAs](#)
[Oxford Air Quality](#)

[Oxford Zero Emission Zone \(ZEZ\) consultation](#)
[Oxfordshire Air quality service](#)
[South Oxfordshire Air Quality](#)
[Types of sites that measure No2 emissions](#)
[UK Air Quality Statistics](#)
[Vale of White Horse Air Quality](#)
[West Oxfordshire Air Quality](#)

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South Oxfordshire District Council
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Data notes and briefings from this service are available at www.oxford.gov.uk/districtdata