



# air quality

## Nitrogen dioxide down but particulates rise

We first raised the difficulty of how to publicise air quality so as to affect individual behaviour back in 1992<sup>1</sup>. Fifteen years on, it remains a difficult issue to tackle. Whilst our impacts on the environment are now widely publicised, for example through car use, we continue to prioritise other needs first.

Although local authorities have been obliged to monitor air pollutants ever since the UK air quality regulations came into force in 2000, Hertfordshire had actually been measuring air quality forty years prior to that. Whilst quality has improved, for example through the introduction of lead-free fuel, we still resist changing behaviour and find car use essential.

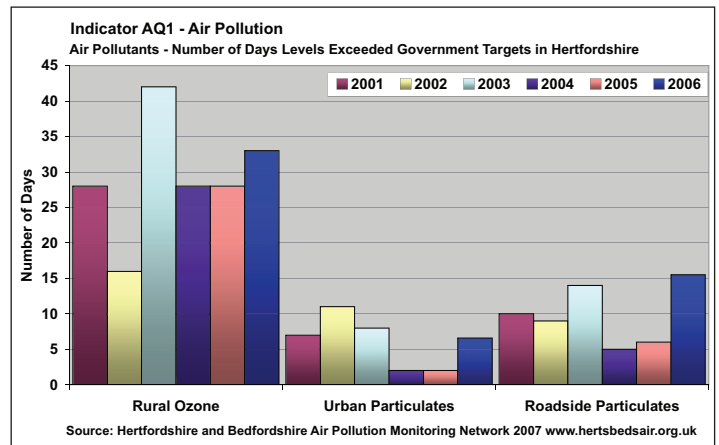
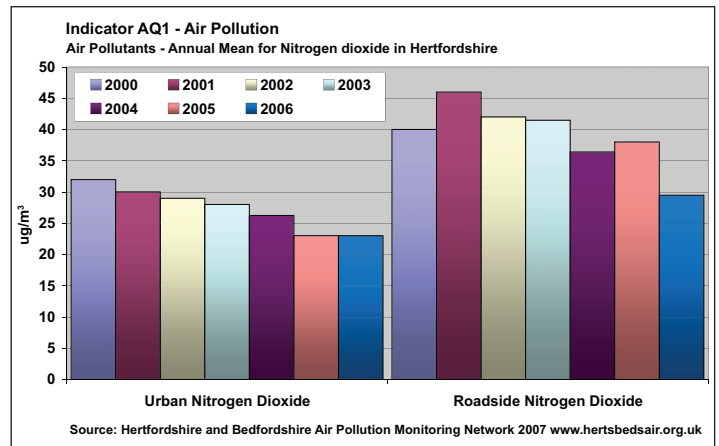
As research continues new issues emerge and the harmful effects of carbon emissions are now extensively published. However, on an average day in the UK a healthy person is unlikely to experience any serious short-term health effects.<sup>2</sup>

### Indicator AQ1 - Air Pollution

This indicator shows the quality of the county's air against the government's five air quality criteria. Despite many days of 'moderate ozone' being recorded across the network, no incidences of 'moderate' carbon monoxide or nitrogen dioxide were recorded by any of the network sites during 2006. There were many days where 'moderate ozone' was recorded across the network. The first widespread incident occurred in May, much later than in 2005 and the last incident was recorded in September. Unlike 2005, where only few incidences of high ozone levels were recorded, several were recorded during June and July in 2006. In 2006 only Broxbourne's continuous monitor failed to meet the provisional annual mean for nitrogen dioxide.

#### Criteria for Measuring Air Quality

1. Number of days when ozone levels in rural areas exceeds the Government's standard
2. Number of days when particulate levels in urban areas exceeded the Government's standard
3. Number of days where particulate levels close to busy roads exceeded the Government's standard
4. Annual mean nitrogen dioxide levels in urban areas
5. Annual mean nitrogen dioxide levels close to busy roads



#### Air Quality Facts

- Ozone occurs at two levels. At 19-30 km above the Earth's surface it occurs naturally and filters out the ultraviolet radiation that causes cancer. At ground level it occurs as a chemical reaction from motor vehicles and can harm the respiratory system. It rises in rural areas during warm, sunny weather, whilst cold, still, weather causes it to rise in urban and roadside areas.
- Whilst nitrogen oxides exist naturally in the ocean, they are also produced by motor vehicles; creating ground-level ozone, smog and lung problems.
- Particulates are less than 10 micrometres wide in diameter, can penetrate deep into the lung and cause more damage than larger particles which are filtered out naturally via the respiratory system. The main source of particulates is from road traffic (25%), especially diesel engines.
- Short-term changes in air quality are affected by the weather as emissions from traffic and other sources often take a long time to change.

<sup>1</sup> Access this report and others from our report website.

<sup>2</sup> See our website for more on health and the government bandings.



## Air Quality Management Areas

Local authorities in Hertfordshire have to regularly make detailed studies of air pollution levels throughout their area. Where it is estimated that the air quality standards set by the government cannot be met by the dates specified, that area is declared an Air Quality Management Area (AQMA) and an action plan must be devised to improve it.

Hertfordshire County Council holds a forum with the district and borough councils to report on air quality. It also provides support to these councils by integrating agreed actions into the Local Transport Plan and once developed, indicators. The current status of the indicators in each of the identified AQMAs in Hertfordshire is outlined below.

### Cars & Air Pollution

- Cars can affect the environment in many ways; reducing air quality, contributing to climate change and causing noise problems.
- The car is one of the UK's biggest polluters. There are currently 24 million on our roads with 2.2 million new and 6 million used cars sold annually.
- County traffic flow is 35% higher than the national average. As its population is split between many small towns people are compelled to use transport.
- Walking, cycling or public transport are the best options environmentally but are not always practical. There are simple steps, however, that everyone can take to make driving a car more efficient and environmentally friendly. See our website for details.

**Status of Air Quality Management Areas (AQMAs) in Hertfordshire**

Council	AQMA	Why Air Standards Not Met	Progress on development of indicator to measure change
BBC	Waltham Cross	Residential area close to M25	The Highways Agency's 'Target Programme of Improvements' includes the widening of the M25 at Junctions 23 to 27. It is also expected that the refurbishment of the Holmesdale tunnel should improve traffic flow and ventilation.
EHDC	Junction at Hockerhill Lights	Traffic volume & traffic signal queues HGVs not using bypass Park and ride underused	A joint East Hertfordshire District / Hertfordshire County Council action plan has been prepared. This will inform the development of targets for air quality at this location.
HBC	A5183 High Street Elstree	Queue length at traffic signals Number of HGVs	Draft action plans are currently being reviewed by Hertsmeare Borough Council. Targets to be developed once plans agreed.
	High Street, Potters Bar	Bus garage with high number of bus movements Traffic volume & traffic signal queues	
	4 either side of M25 & M1	Proximity to M25 & M1	Highways Agency's 'Target Programme of Improvements' includes widening the M1 at Junctions 6a to 10 and widening the M25 at Junctions 16 to 23 and Junctions 23 to 27.
SACD	Peahen Junction	Queuing traffic at Peahen junction Inappropriate routing of HGVs Unnecessary through traffic	A joint St Albans District / Herts County Council action plan has been developed. The councils are currently setting targets.
TRDC	5 related to M25	M25	The Highways Agency's 'Target Programme of Improvements' includes the widening of the M25 at Junctions 16 to 23, and the widening of the M1 at Junctions 6a to 10.
WBC	Pinner Road/ Chalk Hill	Bottlenecks at Bushey Arches Volume of traffic. Junction issues	Watford Council has employed consultants to identify measures to improve air quality in all 4 areas. Watford Council and Herts County Council will then prepare joint action plans based on the consultant's findings to inform target development.
	Chalk Hill	Queue length at traffic signals High traffic volumes	
	Farraline Road	High volumes of traffic and queue lengths at traffic signals.	
	Horseshoe Lane/ A405 junction	Queue length due to stationary traffic at the junction.	
	Properties by M1	Proximity to M1	Action plan not yet available.

Source: LTP 2006/7 – 2010/11 HCC Oct 2007 Note: There were no AQMAs in Dacorum, North Herts, Stevenage or Welwyn Hatfield.