

## Councillors' Briefing Note No. 133

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### **Air Quality – Frequently asked questions for Members**

In response to recent Member and public enquiries this briefing note has been produced to inform Councillors of commonly asked questions surrounding air quality in Wiltshire. Many different officers of the council and Councillors have been attending air quality briefings, community groups and area board meetings. Many similar questions and 'myths' are being asked about air quality, so it was felt necessary to produce a list of our responses which can be included on our website or given out as an information leaflet.

### **Are diffusion tubes an accurate way of measuring air pollution Levels?**

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Diffusion tubes are a convenient means of measuring many air pollutants including nitrogen dioxide; they are small and unobtrusive and, unlike large pollution monitoring stations can be placed virtually anywhere. They are cheap compared with pollution monitoring stations so we are able to distribute them more widely. They are however not as accurate as the pollution sophisticated monitoring stations. The tubes are exposed for a period of a month and the 'raw' results are considered to be +/- 20% accurate- commonly they over estimate nitrogen dioxide levels. Each pollution monitoring station has three diffusion tubes close to the air intake for quality assurance purposes. This means we can ratify our diffusion tube data against the accurate data produced by the monitoring station and produce annual figures that are more meaningful. For this reason we only release annual monitoring data when it has been properly scrutinised and quality assured. All monitoring is undertaken in accordance with DEFRA guidance.

### **Can you monitor air pollution near my house?**

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We will always consider requests for new monitoring sites and will be happy to discuss this with you. Wiltshire Council reviews all of our nitrogen dioxide diffusion tube monitoring locations annually.

## Where is air pollution monitored in Wiltshire?

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We currently have over 90 sites monitoring nitrogen dioxide with passive diffusion tubes. In addition we have 3 automatic nitrogen dioxide monitors and 3 automatic particulate monitors. Locations are reported on in our annual reports to DEFRA

<http://www.wiltshire.gov.uk/communityandliving/publicprotection/pollutionandnoise/airandwaterpollution/airquality/airqualityreportsandsummaries.htm>

## If monitoring equipment shows a high level of nitrogen dioxide does this mean the whole town is equally affected?

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No, not necessarily. For example in 2011 there were 9 diffusion tubes located around Bradford on Avon and only 2 showed exceedances. It should also be borne in mind that we move diffusion tubes around to build a picture of pollutant levels and may cluster diffusion tubes in order to get a idea of the extent of an area affected by exceedances. A large number of tubes with high readings does not mean pollutant levels are increasing, it can mean we are building a better picture of air quality in a particular area.

## Why are there some gaps in the data?

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Gaps in the data (either traffic or air quality) occur usually as a result of a breakdown in the monitoring equipment or planned maintenance of the equipment. We try to keep the equipment in good repair and in operation as much as possible. Any faults are repaired as soon as possible.

## If nitrogen dioxide levels are high at the roadside does it mean they are high at nearby houses?

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Not necessarily. Levels of nitrogen dioxide fall quite rapidly with distance from the roadside. For the mathematically minded there is a formula for calculating this. For example if the level is  $40\mu\text{g}/\text{m}^3$  at the roadside, at a front door 5m away the level would be  $26.5\mu\text{g}/\text{m}^3$

## Have there been any improvements in air quality in Wiltshire?

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Nitrogen dioxide levels across the county have showed some decrease. In 2003 four Air Quality Management Areas (AQMAs) were declared in Salisbury. In 2005 the Salisbury Transport Plan 1 was adopted as the Air Quality Action Plan for the city. The introduction of park and ride schemes, combined with smart traffic management reduced the amount of traffic entering the city with a subsequent improvement in air quality.

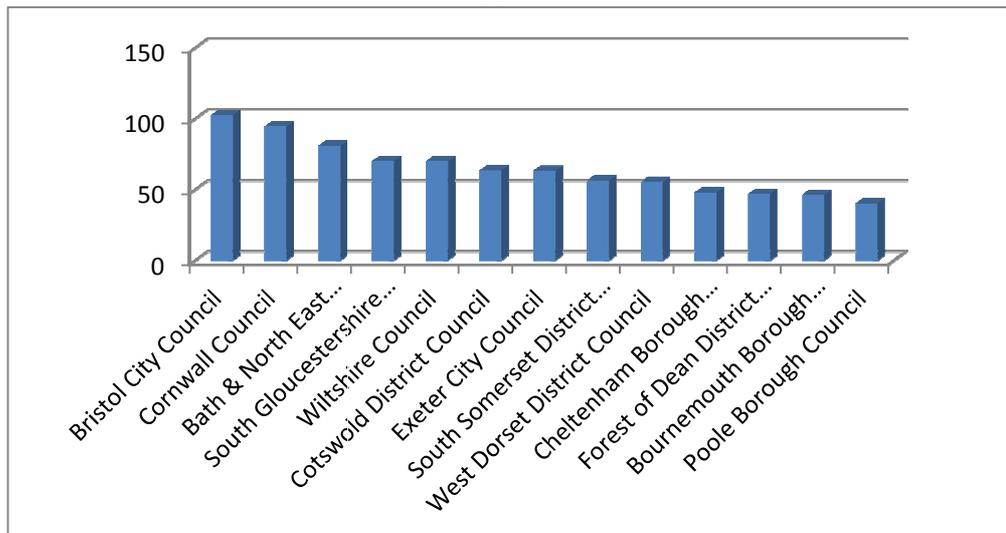
Whilst a small number of locations show some increase in  $\text{NO}_2$  there is an improving trend in  $\text{NO}_2$  levels at most locations.

## Does Bradford On Avon have the worst pollution levels in the country?

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No. The highest levels in Wiltshire have been recorded on a relatively short stretch of Masons Lane in Bradford on Avon. The graph below shows levels in other towns and cities in the south west

## Highest nitrogen dioxide readings from diffusion tubes in 2010 within the South West



## Can Wiltshire Council close roads if pollutant levels become excessive?

No. There have been no exceedances of the hourly nitrogen dioxide limit of  $200\mu\text{g}/\text{m}^3$  within Wiltshire. In addition there are no legal powers contained in the local Air Quality Management Regime to impose road closures. However highway improvement schemes could alter any aspect of road usage as part of an air quality action plan.

## Why is Wiltshire Council not involving local people in working to reduce air quality problems?

There are currently 7 Air Quality Management Areas in Wiltshire and we are in the process of either reviewing the existing plans or developing new action plans. If action planning is to be a success it needs the input and support of the local community from each of the areas involved.

Wiltshire Council's vision is to create stronger and more resilient communities. We want to encourage and support local communities to get involved and work with us to strengthen their ability to deal with local challenges. The community can utilise local knowledge and links with other community groups and projects that are going on within the community.

Air Quality working groups that report to their local Area Board have been set up in each area to address air quality. The composition of the groups varies according to the aspirations of each of the community areas involved. Approaches taken have varied considerably, however they all have the common goal of improving air quality. There is already a lot of work being undertaken by communities. For example, Bradford on Avon have a Lorry watch scheme and have developed Active Travel Maps to encourage alternative means of transport to the private car.

This is very much a living process and each community group is at a different stage in the process. Where projects are identified that require funding we will submit bids to DEFRA or the EU life Fund.

## Does air pollution affect health?

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Yes it can. Air pollution has a range of effects on health. However, air pollution in the UK does not rise to levels at which people need to make major changes to their habits to avoid exposure; nobody need fear going outdoors. It is known that, when levels of air pollutants rise, adults suffering from heart conditions, and adults and children with lung conditions, are at increased risk of becoming ill and needing treatment. Only a minority of those who suffer from these conditions are likely to be affected and it is not possible to predict in advance who will be affected. Some people are aware that air pollution affects their health: adults and children with asthma may notice that they need to increase their use of inhaled reliever medication on days when levels of air pollution are higher than average. Defra publish an Air Pollution Index which provides information on air quality and practical advice for those concerned about potential effects. This can be accessed via the link below. <http://uk-air.defra.gov.uk/air-pollution/daq?view=no2#pollutant>

## Does pollution from nitrogen dioxide cause asthma?

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In 2010, the Committee on the Medical Effects of Air Pollution (COMEAP) reviewed all available evidence and up-dated it's expert advice on the links between asthma and air pollution. The Committee concluded:

- i. Evidence from studies comparing communities (i.e. at a city or administrative area level) suggests that the induction of asthma does not appear to be associated, at a population level, with levels of air pollutants.*
- ii. Evidence from studies on traffic-related air pollution suggests that it is possible that air pollution plays a part in the induction of asthma in some individuals who live near busy roads, particularly roads carrying high numbers of heavy goods vehicles.*
- iii. Our examination of the mechanistic evidence bearing on the possible interaction between exposure to air pollutants and the induction of asthma leads us to think that a causal explanation for conclusion (ii) above is plausible.*
- iv. The contribution of exposure to air pollutants to the induction of asthma in those in whom it plays a part is likely to be small in comparison with those from other contributory factors. The proportion of the population so affected is also likely to be small.*

These conclusions represent a modest change from the conclusions we reached in 1995. Then we were generally not persuaded that exposure to air pollutants played a part in the induction of asthma. Now we think it might do so but, if so, only amongst those living close to busy roads with a lot of truck traffic."

## Will Wiltshire Council be fined by the EU for failing to meet pollution targets?

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No. Governments are fined not Local Authorities (LA's). In theory fines could be passed onto LA's. Current Guidance from DEFRA indicates that local air quality is considered to be outside the direct control of local councils. Provisions in the Localism Act allow government to pass down fines from the EU to a local level however there are a number of factors that would have to be considered. This includes a need to show that a local authority has not taken steps to improve air quality.

## How does EU legislation on air quality relate to the 'Local Air Quality Management' regime?

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### EU and air quality

Action to manage and improve air quality is largely driven by EU legislation. The 2008 ambient air quality directive (2008/50/EC) sets legally binding limits for concentrations in outdoor air of major air pollutants that impact public health such as particulate matter (PM<sub>10</sub> and PM<sub>2.5</sub>) and nitrogen dioxide (NO<sub>2</sub>). As well as having direct effects, these pollutants can combine in the atmosphere to form ozone, a harmful air pollutant (and potent greenhouse gas) which can be transported great distances by weather systems

EU limit values are EU parameters that must not be exceeded are legally binding on the UK government. They cover the same pollutants as UK objectives, and in many cases are set at the same levels, sometimes with different target dates for achievement. Local authorities have no direct responsibilities for delivering them

The UK is divided into 43 zones and agglomerations for the purposes of assessing compliance with EU air quality limits. The UK meets these limits for most air pollutants. In London and other major urban centres where some of the limits are not currently met in full the government is committed to working towards full compliance as soon as possible. Where compliance is not achieved, the UK is required to produce air quality action plans detailing the measures that will achieve compliance, and submit those plans to the European Commission on an annual basis.

### National Policy

The National Air Quality Strategy establishes the framework for air quality improvements. Measures agreed at the national and international level are the foundations on which the strategy is based. It is recognised, however, that despite these measures, areas of poor air quality will remain, and that these will best be dealt with using local measures implemented through the LAQM regime. The role of the local authority review and assessment process is to identify all those areas where the air quality objectives are being or are likely to be exceeded. Experience has shown that such areas may range from single residential properties to whole town centre's.

### Local Air Quality Management

Local authorities in the UK have statutory duties for managing local air quality under Part IV of the Environment Act 1995

They are required to carry out regular reviews and assessments of air quality in their area against standards and objectives prescribed in regulations for the purpose of local air quality management (LAQM) before undertaking Action Planning if air quality is found to breach the regulations.

The following regulations apply:

**England:** The Air Quality (England) Regulations 2000 (SI 928), The Air Quality (England) (Amendment) Regulations 2002 (SI 3043),

## Are Local Authorities legally required to achieve the prescribed air quality objectives in their areas by the given target dates?

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Local authorities are not legally obliged to achieve the national air quality objectives. They are, however, required to work towards the objectives by drawing up action plans setting out the measures they intend to take in pursuit of them.

Section 84 of the Environment Act 1995 and article 13 (b) of the Environment Order 2002 provides that, once it has designated an air quality management area (AQMA):

"...a local authority ... shall be under a duty ...to prepare a written plan...for the exercise by the authority, in pursuit of the achievement of air quality...objectives in the designated area, of any powers exercisable by the authority."

The explanatory note to the Air Quality Regulations 2000, Air Quality (Amendment) Regulations 2002 state that:

"...an action plan...will have to be prepared setting out how the authority intends to exercise its powers in relation to the designated area in pursuit of the achievement of the prescribed objectives".

The legislation was framed in this way because, in the Government's view, it would be unreasonable to put a legal requirement on local authorities to achieve the objectives, because so many of the sources of emissions are outside their direct control. This is particularly the case where a likely exceedence is due to traffic on a trunk road or motorway, or to emissions from an industrial process regulated by the environment agencies.

## Do weather conditions affect air quality?

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Yes, different meteorological conditions can affect air quality. Wind aids the dispersion of pollutants, rain can wash pollutants out of the atmosphere, temperature inversions (a temperature inversion is a thin layer of the atmosphere where the normal decrease in temperature with height switches to the temperature increasing with height). An inversion acts like a lid so preventing dispersion of pollutants.

Pollutant levels will also vary with the season as light intensity and temperature increase or decrease

Public Protection and Public Health officers are working together to develop a texting/messaging service which will alert those with asthma and other respiratory conditions to changes in the weather which might affect air quality and lead to an

exacerbation of symptoms. Early warning of atmospheric and temperature changes enable people to adapt their activities and prevent acute episodes.

## Does the architecture or geography of a road affect air quality?

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Yes, it can do. Streets with narrow roads and high sided buildings can inhibit dispersal of pollutants and traffic travelling up a steep hill can emit higher levels of pollutants.

## There is a brand of paint & paving slabs that absorb nitrogen dioxide; why not paint buildings and repave the streets in areas where high levels of nitrogen dioxide exit?

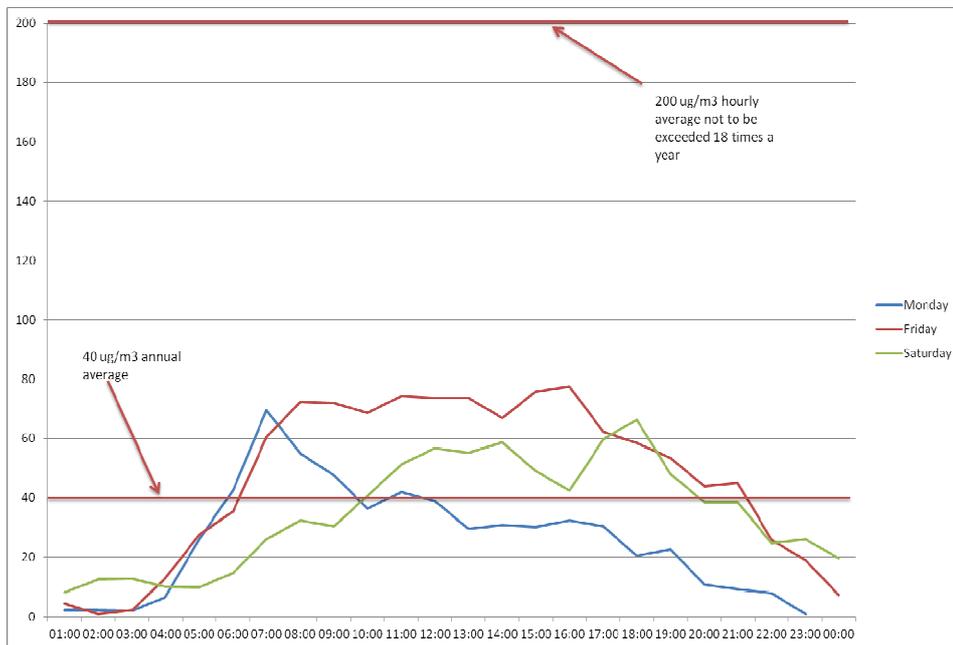
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This is dependent on quantity of surface area given over to the paint or paving, air movement across the surface, the surface must be kept clean, aesthetic acceptability in conservation areas, and only works in daylight etc. It is understood that they have been of limited impact but the merits can be considered further as part of action planning

## Are pollutant levels consistent through the day?

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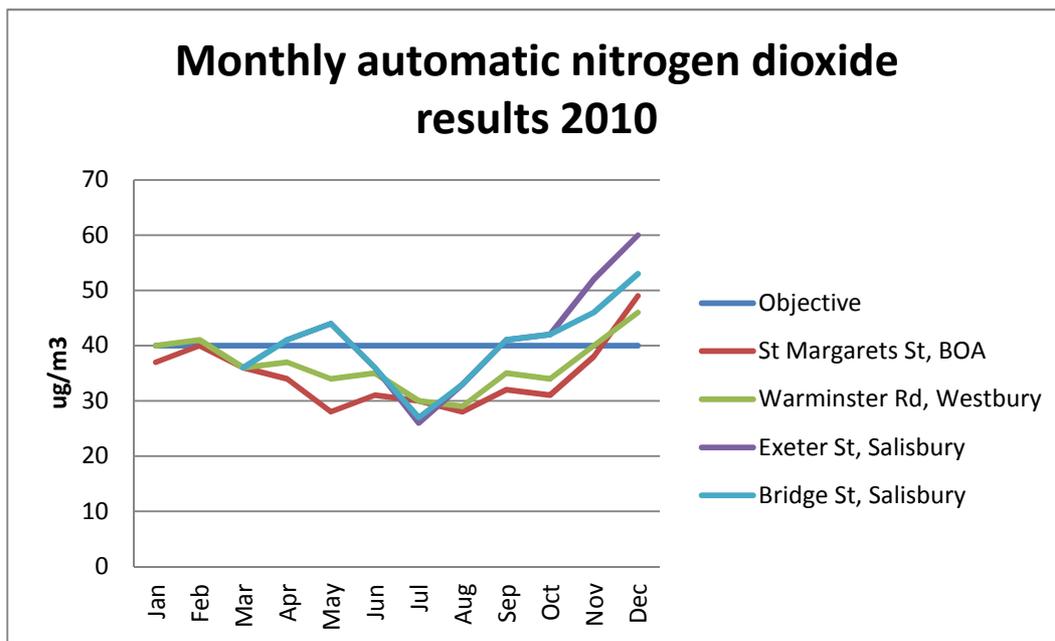
No. The graph below for example shows the variation in nitrogen dioxide over a 24 hour period on different days of the week in Devizes.



## Are pollutant levels the same through the year?

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No, it can be seen below that nitrogen dioxide levels show similar trends across the county, with higher levels being experienced in December and the lowest in July.



## Does the NHS or Public Health collect data which can be used to estimate the effects of air quality on asthma & cardio-pulmonary disease?

No. Asthma and cardio-pulmonary disease are both long term conditions and data are routinely collected at practice and hospital level to ensure that people with these conditions are properly monitored, and supported to live at home with these conditions, minimising hospital in-patient stays wherever possible. Given the very limited relationship between the effects of air pollution and these conditions, the data could not be used for this purpose.

## Does Nitrogen Dioxide pollution come from vehicles?

Nitrogen dioxide is a by product of burning fossil fuels such as coal, oil, petrol and diesel in vehicles, power plants and industrial sources. In Wiltshire traffic has been identified as the primary source of nitrogen dioxide.

## Are there any smoke control areas within Wiltshire?

There are currently no smoke control areas within the Wiltshire Council's area.

## Are there controls on when I can have a bonfire?

There are no specific controls on when you are able to have a bonfire, although it is good practice to think carefully about the wind direction and time of day in order to avoid causing a nuisance to your neighbours.

The Council has powers it can exercise against people causing a statutory nuisance and will investigate all allegations of nuisance made.

Under Section 34 of the Environmental Protection Act 1990 it is illegal to dispose of waste that is not from your property - for example from your workplace or from a neighbour. For example, small tradesmen must not burn waste from site at home.

Residents must not burn their own household waste. Wiltshire Council recommends that only garden waste is burnt on domestic bonfires.

Most garden waste can easily be composted at home or by using Wiltshire Councils green waste service. Larger amounts can be taken to one of the household waste recycling centres in the county.

## Further information

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For further information or advice please contact Public Protection Services on 0300 456 0100

Or visit our website:

[www.wiltshire.gov.uk](http://www.wiltshire.gov.uk) and search "air quality" or:

<http://www.wiltshire.gov.uk/communityandliving/publicprotection/pollutionandnoise/airandwaterpollution/airquality.htm>