

## Air Pollution: a wider determinant of health

### Introduction: why is this important?

Rural areas of Shropshire enjoy some of the best air quality in the UK, however, our urban centres, and areas near to the strategic road network and within some town centres are affected by elevated concentrations of pollutants that have a significant impact on health. In addition the more socially disadvantaged an area is the bigger the health impact – placing air pollution as not only a considerable feature in inequality in health but also inequity as those who are less socially disadvantaged often produce the most pollution.

The two components of exhaust gases that are of most concern for human health are nitrogen dioxide (NO<sub>2</sub>) and particulate matter (PM). In the UK the biggest polluting sector is road vehicles<sup>1</sup> and Shropshire is no different. Both of these pollutants can also be attributed to other sources such as domestic heating, industrial processes and open burning. One emerging issue is a return to burning solid fuels for domestic heating contributing around a third of fine PM pollution in the UK<sup>2</sup>.

Air pollution doesn't simply make us cough, it also causes much more serious conditions such as:

- premature death
- respiratory issues such as COPD and the development of asthma in children
- heart attacks and strokes
- cancer
- low birth weight, pre-term birth and developmental problems in children
- links to dementia and type 2 diabetes – significant public health problems of the time.

It is estimated that around 40,000 equivalent deaths occur in the UK annually due to poor air quality<sup>3</sup>. Public Health England figures state 130 annual deaths are attributed to fine PM air pollution in the Shropshire Council area annually<sup>4</sup> representing a significant public health challenge, not just in terms of early deaths, but reductions in quality of life and the associated health costs of treating residents whose health is affected.

Shropshire Council has areas where pollution exceeds legal limits set in the Air Quality (England) Regulations 2007. The UK is now in breach of the EU Air Quality Directive and infraction proceedings have commenced. The level of fines could reach 400 million Euros. Under the reserve powers of the Localism Act 2011<sup>5</sup> fines can be passed down to local authorities whose act or omission contributes to a breach. There is uncertainty around what may become of these fines when the UK leaves the European Union however where Local Authorities do not contribute to improving air pollution in areas that breach legislation or allow air pollution to reach a point where legislation is breached there remains the possibility of fines from central government. There is a financial risk in not addressing the issue as well as the financial cost of treating those who suffer ill health as a result.

---

<sup>1</sup> DEFRA (2011). *Causes of pollution*. [Online]. Available at: [https://uk-air.defra.gov.uk/assets/documents/What\\_are\\_the\\_causes\\_of\\_Air\\_Pollution.pdf](https://uk-air.defra.gov.uk/assets/documents/What_are_the_causes_of_Air_Pollution.pdf)

<sup>2</sup> Robinson D. L, (2016). *Air pollution in UK: the public health problem that won't go away*. British Medical Journal: BMJ 2015;350:h2757. [Online]. Available at: <http://www.bmj.com/content/350/bmj.h2757/rr-1>

<sup>3</sup> Royal College of Physicians, (2016). *Every breath we take: the lifelong impact of air pollution*. [Online]. Available at: <https://www.rcplondon.ac.uk/projects/outputs/every-breath-we-take-lifelong-impact-air-pollution>

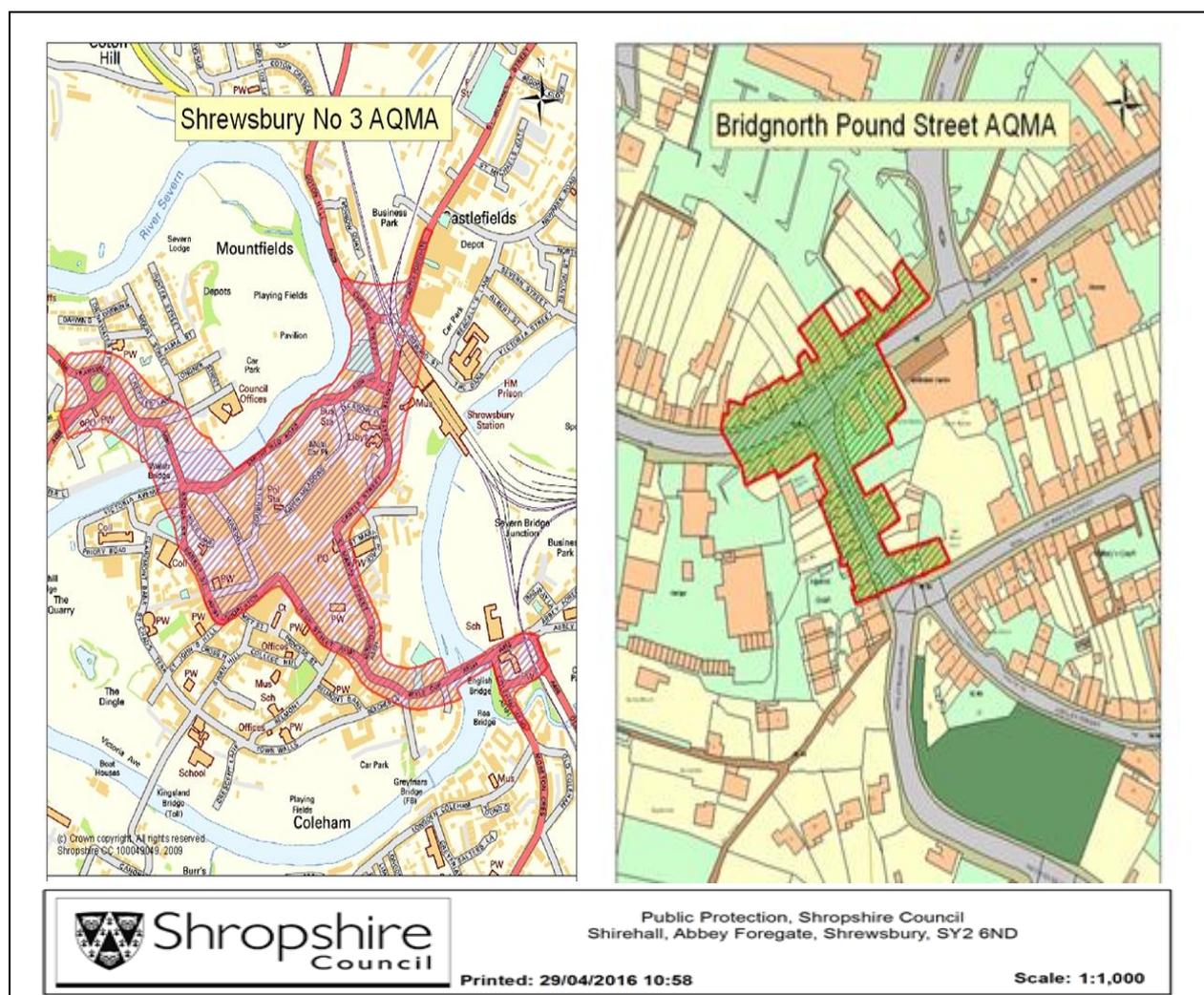
<sup>4</sup> PHE, (2014). Estimating local mortality burdens associated with particulate air pollution. Public Health England. [Online]. Available at: [https://www.gov.uk/government/uploads/system/uploads/attachment\\_data/file/332854/PHE\\_CRCE\\_010.pdf](https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/332854/PHE_CRCE_010.pdf)

<sup>5</sup> Localism Act 2011. Available at: <http://www.legislation.gov.uk/ukpga/2011/20/contents/enacted>

## What is the extent of the challenge locally?

An Air Quality Management Area (AQMA) is declared when there are breaches of legislative levels of pollution. Shropshire Council historically had 5 AQMAs. Three of these were revoked in 2017/18. The remaining two AQMAs cover Bridgnorth and Shrewsbury town centre areas. Figure 1 below shows the extent of the AQMAs.

Figure 1: AQMA in Shrewsbury Town Centre and Bridgnorth

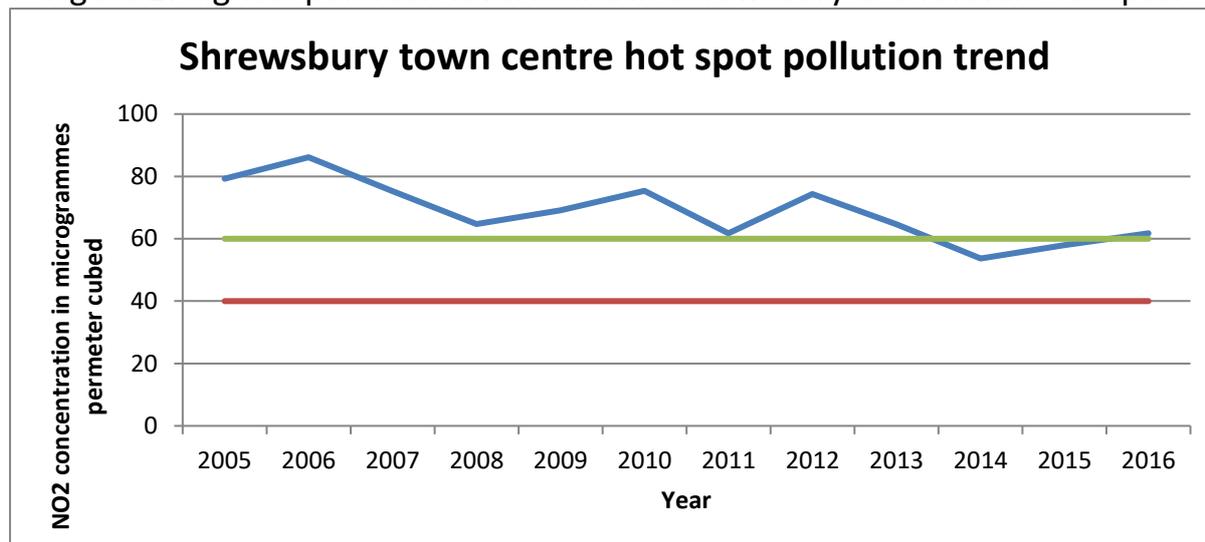


Within the Shrewsbury AQMA 12 properties exist which are considered likely to still exceed the nationally set objective levels. Many other people will be affected via short term exposure when in the area. In Bridgnorth there are a predicted 37 properties currently considered to be exposed to levels of air pollution above acceptable limits. There are also businesses within these areas. Although the national air quality regime does not consider business premises to be receptors in respect of the declaration of AQMAs local knowledge suggests that people working in these areas are often in the business premises during peak pollution times of day associated with peak traffic times and are therefore likely to be affected by air pollution in these areas.

## What is the scale of the challenge locally?

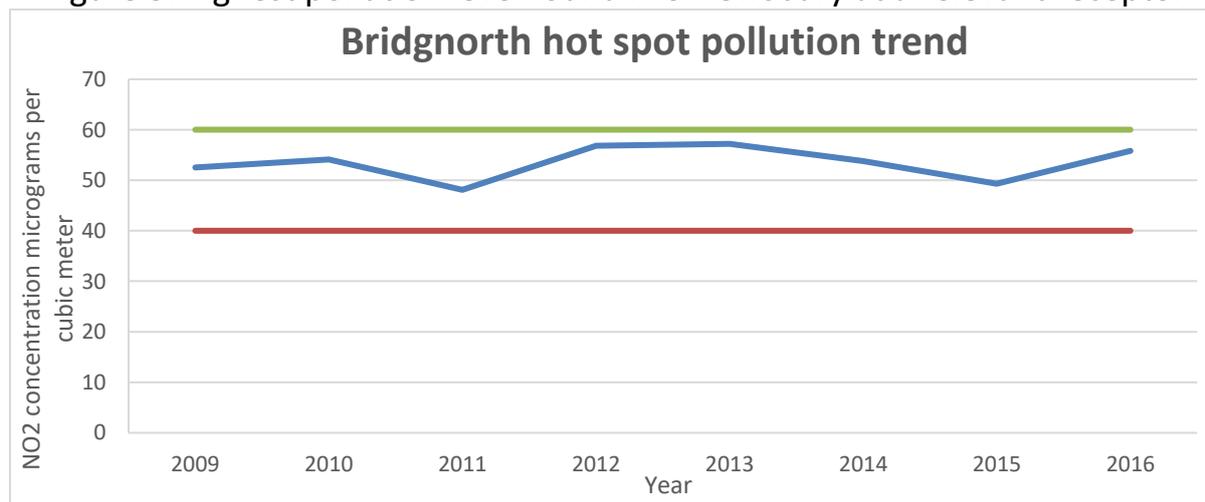
In Shrewsbury town centre residents are exposed to air pollution which exceeds the legislative level by up to 50%. Figure 2 shows a graph of recorded air pollution levels at this hot spot. The red line represents the legislative level that should be a maximum pollution level target. The green line represents a level above which it is likely that vulnerable people exposed for a short amount of time could suffer health impacts including the onset of a heart attack.

Figure 2: highest pollution level found in Shrewsbury at a relevant receptor



In Bridgnorth air pollution is 35% above the legislative level. Significant improvements are required to achieve legislative levels in these areas.

Figure 3: highest pollution level found in Shrewsbury at a relevant receptor



There is promising news for Shrewsbury where monitoring data suggests a general downward trend in pollution levels over time. In Bridgnorth however this is not the case with levels in 2016 similar to those recorded in 2009.

## What are the local causes of air pollution?

Air quality legislative breaches in Shropshire are primarily due to vehicle emissions. Shropshire town's identity are that of historic market towns located in defensible positions. This creates bottlenecks at entry points to the towns where roads designed for horse and cart are now congested with ever increasing numbers of motorised vehicles.

Shropshire's air quality concerns are found where several factors combine: where residential properties are close to the road, where there is a high volume of traffic, where there is a junction impeding traffic flow and congestion is likely, where there is an urban canyon (high buildings which enclose the street and stop pollution from dispersing).

## What do our stakeholders tell us?

Recent consultation with Defra over proposed plans to reduce air quality has suggested monitoring continues in key locations and actions are taken to resolve exceedances of legislative limits.

In 2017 Shropshire Council received more than 4 times as many queries from residents about air quality in comparison to 2016. It is clear that air quality is in the national consciousness and that this has filtered down locally. Residents want to know if they are being exposed to illegally high levels of pollution and if so what steps the Council and partners are taking to reduce pollution levels.

## What strategies, policies and best practice could be applied locally and nationally?

Where an AQMA is declared and Air Quality Action Plan is required to identify the local actions that can generate betterments in air quality. AQAPs will be updated to take into consideration up to date information. The following range of initiatives are likely to be highlighted as potential actions:

### 1. Integrated Policy and Strategy

Improving air quality involves action Council wide. It is important that air quality improvement is given suitable weight and considered during any Council Policy and Strategy to ensure that improvements are made where possible.

By aligning policies around key themes such as air quality it is envisaged that policies and strategies in all areas will find additional synergies which will help Council service areas pull forward together to fulfil Shropshire Council's vision and aims.

Key policy and strategy areas where it is imperative that air quality is considered include:

- The Joint Strategic Needs Assessment
- Planning policy documents such as the Local Plan
- Parking Strategy
- Economic Growth agenda documents, policies and visions
- Climate Change documents
- Air Quality Action Plans and Annual Status Reports
- Local Transport Plans

## 2. Infrastructure improvements

By investing in infrastructure air quality betterments can be achieved. For example:

- roads and highways management controls to reduce congestion create betterments in air pollution
- introducing Electric Vehicle Charging points to encourage zero electric vehicles
- Infrastructure to encourage active transport through cycling and walking can provide alternative means of travel to polluting vehicles
- green infrastructure can also be considered as a way forward to tackle our air pollution challenge.

Many of these aspects have added value by making town centres more pleasant places to be in turn promoting the businesses within them and encouraging people to spend more time within them.

## 3. Incentivise drivers not to travel through polluted areas

Encouraging people to avoid congested, polluted areas is not only good for that individual's health but to those living and working in the area. Incentives such as cheaper parking on the periphery of towns, a competitive, reliable and fit for purpose Park and Ride service and improved travel times around town centre areas can all incentivise people to stay out of congested town centre areas.

Reducing speed limits in town centres to promote active transport, reduce traffic accidents and discourage drivers from using these slower routes to cross our towns can help to address poor air quality and has been implemented in Shrewsbury Town Centre.

There is a natural progression from the measures above to a consideration of pedestrianised areas. This would reduce air pollutants, noise and odour in any pedestrianised area helping to encourage people to spend more time in our towns providing business with the potential to consider on street sales to increase revenue from a larger floor space.

## 4. Improve the fleet

Shropshire Council can improve the vehicle fleet by encouraging cleaner vehicle use where possible. The Council can contribute to this through:

- Licensing vehicles: where a vehicle needs a licence to operate and standards can be expressed by the Council newer cleaner vehicles should be promoted e.g. through the Private Hire and Hackney Carriage Policy and licensing regime.
- Commissioning services: where a company that will use road vehicles as a major part of their role the tender process should favour bids from parties that can provide the cleanest vehicles.
- Procurement: when procuring vehicles for its own use the Council should ensure that it favours the use of the cleanest vehicles.
- The grey fleet: many of the Shropshire Council workforce commute to work by car and carry out visits around the county in their own vehicles. By providing a Car Club with low polluting vehicles work visits could be carried out in less polluting vehicles. Encouraging alternative modes of transport for people to get to work e.g. car share, walking, cycling and bus could reduce the impact that Shropshire Council's staff have on local air pollution.

## 5. Change behaviours

Working to promote the air quality challenges the Council faces and advocating behaviours that actively promote betterments can result in reduced congestion, improved travel times, additional health benefits to the individual and additional opportunities for economic growth.

Work to empower individuals, communities, businesses and other partners to take up active transport, public transport, car share and avoid areas of high pollution is welcomed. If every person travelling into polluted areas changed to one of the above options just once a week a significant reduction in pollution levels could be achieved.

Encouraging drivers to turn off their engines when at traffic light junctions is considered a cheap and effective way of reducing pollution at no cost or inconvenience to the driver. This is particularly important in congested polluted areas such as around the train station in Shrewsbury.

Encouraging car buyers to consider the emissions of the vehicles they are purchasing. Awareness raising and providing information to potential car buyers could reduce pollution by promoting cars which produce the least pollution.

## The National Strategy

A new air quality strategy was released in the Summer of 2017. It makes it mandatory for several areas to implement Clean Air Zones (CAZ) where the most polluting vehicles are discouraged from the area. The knock-on effect of this on surrounding areas is that these dirtier vehicles will be diverted to areas that do not have a CAZ. Shropshire could fall foul to this should it not consider suitable policies, procedures and action to avoid an influx of more polluting vehicles that may counteract any positive interventions that may take place.

Other national strategies are likely to focus around a reduction in the most polluting vehicles including diesel vehicles, particularly older ones. Encouragement of zero emission vehicles such as electric vehicles is central government policy with grants available for charging infrastructure. In order to ensure Shropshire can adopt best practices it is advised that its policies and strategies are aligned to this national agenda in order that should grant funding be available for interventions in future that Shropshire Council can demonstrate a commitment to the national strategy and ensure it fulfils the criteria required for a successful application.

## Recommendations – staying ahead of the curve

Shropshire Council is considering reviewing Air Quality Action Plans which set out the multidisciplinary approach required to improve air quality. The Council must ensure this document is kept up to date and that the principles within it are followed whenever decisions are made which have potential to impact on air quality. There must be continuation of our work with health partners to increase public awareness and the provision of the data to key partners to ensure that air quality messages are delivered widely.

We must ensure that policies and strategies are translated into local action to drive change. Not all of the solutions that improve air quality are equally palatable and some require significant investment. However, with air quality considered a public health emergency in the UK all options must be considered. Everyone has a role to play and the strategy asks for everyone in Shropshire to do their bit to help reduce air pollution, including residents, businesses, Shropshire Council, town councils, other public sector organisations, bus and train companies and visitors to the region.

Should no action be taken to ensure that the Council has a robust set of policies, procedures and strategies in place to combat air pollution it may be exposed to a backdrop of worsening air quality as the proposed nation strategy is implemented in other areas. This would be unacceptable for the health of our communities and go against the grain of Council visions of a flourishing Shropshire. This document recommends action in all the areas identified to ensure that Shropshire stays a clean and green place to live, work and play where the health of its communities and businesses can thrive.

By adopting a range of positive air quality interventions Shropshire Council will be leading the way forward on the prevention front. A shift to prevention of ill health is cost effective in comparison to the cost of treating the ill health caused by air pollution. Prevention over cure is the favoured direction of travel for public health interventions and is the only method to address the air quality challenges faced in the Shropshire Council area today.

## Further information

- Visit Shropshire Council's [air quality webpages](#) for more information. Here you can find maps showing locally collected air quality data, Action Plans and reports and information on how you can help to be part of the air pollution solution.
- The national [UK Air Pollution Forecast](#) provides a five-day forecast of air pollution - a useful tool for those who may be vulnerable to increased air pollution which could be used to help these individuals plan their activities to avoid the most highly polluted days.
- Details of Shropshire Councils Park and Ride service for Shrewsbury can be found here: <https://shropshire.gov.uk/public-transport/park-and-ride/>
- To find out where you can park including parking restrictions and tariffs please visit <https://www.shropshire.gov.uk/parking/find-my-nearest-car-park/>  
Please note: a progressive car parking strategy aimed at promoting edge of town car parks comes into force in 2018/19. Charges are expected to change and be reviewed annually where necessary to encourage parking on edge of town rather than driving into more highly polluted areas.