



# 2018 Air Quality Annual Status Report (ASR) Executive Summary

August 2018

## Executive Summary: Air Quality in Our Area

Air pollution is associated with a number of adverse health impacts. It is recognised as a contributing factor in the onset of heart disease and cancer. Additionally, air pollution particularly affects the most vulnerable in society: children and older people, and those with heart and lung conditions. There is also often a strong correlation with equalities issues, because areas with poor air quality are also often the less affluent areas<sup>1,2</sup>.

The annual health cost to society of the impacts of particulate matter alone in the UK is estimated to be around £16 billion<sup>3</sup>.

The Council has a duty to review and assess air quality within its district under the Part IV of the Environment Act 1995 and this Annual Status Report has been prepared to fulfil this requirement.

Air pollutants can arise from a variety of sources, including transport and industry. Pollutant levels are assessed against health-based national air quality objectives. Where the objectives are not met, Air Quality Management Areas (AQMAs) must be declared and an Action Plan put in place to improve the air quality in these areas.

## Air Quality in South Gloucestershire

South Gloucestershire lies to the north and east of the city of Bristol with the River Severn forming the western boundary. The area is a diverse mix of urban and rural areas, including major residential, industrial and commercial developments. The road network within South Gloucestershire contains the major junction of the M4 and M5 motorways. The 2017 mid-year population estimate for South Gloucestershire is 279,027<sup>4</sup> and has grown by 13.6% on the number recorded in the 2001 census (245,600). The population is projected to continue to rise, meaning that managing future development and providing vital transport infrastructure is a key challenge.

The main air pollutant of concern locally is nitrogen dioxide (NO<sub>2</sub>), which originates primarily from road traffic emissions.

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<sup>1</sup> Environmental equity, air quality, socioeconomic status and respiratory health, 2010

<sup>2</sup> Air quality and social deprivation in the UK: an environmental inequalities analysis, 2006

<sup>3</sup> Defra. Abatement cost guidance for valuing changes in air quality, May 2013

<sup>4</sup> Source: Office for National Statistics (ONS) Mid-year estimate 2017 (published 28 June 2018)

The air quality in South Gloucestershire is generally good. However, the air quality does not meet the annual mean objective for nitrogen dioxide ( $40 \mu\text{g}/\text{m}^3$ ) in some parts of South Gloucestershire. This is mainly in areas where people are in close proximity to busy, congested roads. The volume and type of traffic and the topography of the area, for example, if the area is open or enclosed such as in a “street canyon”, which impacts on the ability of pollutants to disperse, also play an important part.

### **Air Quality Management Areas**

There are three AQMAs currently declared in South Gloucestershire in relation to the annual mean objective for nitrogen dioxide:

- Staple Hill – in the centre around the Broad Street/ High Street/ Soundwell Road/ Victoria Street crossroads
- Kingswood – Warmley – from the Bristol/ South Gloucestershire boundary in Kingswood along the A420 to the junction with Goldney Avenue in Warmley.
- Cribbs Causeway – adjacent to the M5 Junction 17 roundabout (however revocation of this AQMA is proposed)

Full details of these AQMAs are included in Table 2.1 of this report and maps are available in Appendix E. Further information on the AQMAs are available on the Council website at [www.southglos.gov.uk/airquality](http://www.southglos.gov.uk/airquality) and on the Defra website at [https://uk-air.defra.gov.uk/aqma/local-authorities?la\\_id=238](https://uk-air.defra.gov.uk/aqma/local-authorities?la_id=238).

### **Trends in monitored concentrations**

In 2017, decreases in monitored nitrogen dioxide concentrations were observed as a general trend across the majority of the monitoring sites in South Gloucestershire, including at the Yate automatic station and in the Kingswood – Warmley and Staple Hill AQMAs.

The overall trends in nitrogen dioxide concentrations in the Kingswood – Warmley and Staple Hill AQMAs have been relatively stable over the past decade with a slight downward trend in recent years, although there was an upward trend in 2016, mirroring that generally seen across South Gloucestershire as a whole. However, in 2017, concentrations fell at all sites in the AQMAs, apart from the two exceeding sites 139 and 146 in the Kingswood – Warmley AQMA. It is difficult to determine

exactly why concentrations would have increased at these two sites when concentrations decreased at the majority of other sites. However overall, the number of monitoring sites in the AQMAs exceeding the annual mean objective fell from eleven in 2016 to three in 2017. Pollutant concentrations can vary significantly from year to year due to a number of factors, in particular the meteorological conditions, which can affect pollutant dispersion.

The Yate automatic monitoring site shows the annual mean nitrogen dioxide concentrations have generally been stable and in 2017, there was a slight decrease from 24µg/m<sup>3</sup> in 2016 to 23µg/m<sup>3</sup>. The monitored concentrations remain well below the annual mean and 24-hour mean objectives at this site.

Particulate matter is also a pollutant of concern with recent research indicating that there are no safe levels of this pollutant<sup>5</sup>. Particulate matter (PM<sub>10</sub>) is also monitored at the Yate Automatic Monitoring site and in 2017, the annual mean PM<sub>10</sub> concentration was 14 µg/m<sup>3</sup>; the same as in 2016. The trend in PM<sub>10</sub> concentrations shows the annual mean concentrations have overall been slowly declining since 2010 at Yate and remain well below the annual mean and 24-hour mean objectives.

The trends in the data from the Yate Automatic Monitoring station and within the AQMAs are discussed fully in Chapter 3 of the report and trend graphs are available in Appendix A.

### **Pollutant sources**

The following pollutant sources were considered as part of the review of air quality for this report, as detailed in the Defra LAQM Technical Guidance (LAQM.TG16)<sup>6</sup>.

- Road Traffic Sources
- Non-Road transport Sources
- Industrial Sources
- Commercial and Domestic Sources
- Fugitive and Uncontrolled Sources

No new major sources of emissions were identified. Full details are provided in Appendix D of the report.

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<sup>5</sup> <https://laqm.defra.gov.uk/assets/63091defraairqualityguide9web.pdf>

<sup>6</sup> <http://laqm.defra.gov.uk/technical-guidance/>

## **How the Council works to manage local air quality**

South Gloucestershire Council is a unitary authority and Planning, Transport and Environmental Health are all within the same Directorate (Environment and Community Services) enabling close working between these teams. This has particularly allowed close working between Environmental Health, with their responsibilities for local air quality management and the Strategic Transport and Environment Policy Team, who currently lead on air quality action plan development and implementation. Furthermore, there is a close working relationship with the Public Health Team, and their work on the built environment recognises the importance of aligning spatial planning and transport work with its associated impacts on air quality and health.

The Council is continuing to develop a more holistic approach across the Council to address air quality issues through the establishment of an 'air quality expert reference panel' bringing together relevant professionals within the council who have an interest in air quality, either directly, such as environmental health, public health and transport; or indirectly, where there is opportunity for impact, such as planning policy, major development sites, development control and transport assets and maintenance.

South Gloucestershire works closely with other neighbouring authorities in the West of England (Bath and North East Somerset, Bristol City and North Somerset Councils), particularly with regard to regional strategic work areas such as transport and planning, for example on the Joint Spatial Plan<sup>7</sup>, which sets set out a prospectus for sustainable growth to help the Region meet its housing and transport needs in future years until 2036.

The West of England Combined Authority (WECA) was established in February 2017, with its constituent councils being Bath and North East Somerset, Bristol and South Gloucestershire. Through the Combined Authority, more decisions will be made locally on areas such as transport, housing and skills, and crucially more funding will be available to improve transport infrastructure, create new jobs and improve adult education and skills. WECA will continue to also work closely with North Somerset.

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<sup>7</sup> <https://www.jointplanningwofe.org.uk/consult.ti?>

## Actions to Improve Air Quality

Key completed measures to improve air quality are:

- A second successful Clean Bus Technology Fund (CBTF) bid was confirmed for the West of England in February 2018 and will be used to upgrade 81 Euro IV buses to Euro VI standard to reduce NOx emissions. 13 of these vehicles will operate in the AQMAs in South Gloucestershire.
- This follows the Clean Bus Technology Funding awarded in December 2015 following a joint bid by Bristol, South Gloucestershire and Bath and North East Somerset Councils. The funding was used to upgrade 35 of the most polluting Euro II and III local buses by retrofitting Selective Catalytic Reduction Technology (SCRT) to achieve Euro Standard V/VI, thereby reducing tailpipe NOx emissions on those services, all of which operate in the Bristol, Bath and South Gloucestershire AQMAs. The retrofitting was completed in 2017.
- A £4.79m Office for Low Emission Vehicles (OLEV) funding grant was awarded to the four West of England local authorities and First Bus in August 2017. This funding will help unlock a £28m investment by First, to potentially transform a significant part of their fleet (up to 110 vehicles) into bio-methane powered buses. The new buses, which could start running by 2019, will contribute to reducing air pollution levels across the West of England area, including the Staple Hill AQMA.
- Entire fleet of Council pool cars switched to electric in early 2017, with OLEV funding secured to switch 20% of other fleet vehicles to electric by 2021.
- Access funding secured to 2020, to enable the continuation of school, business and community travel planning measures to promote sustainable travel choices.
- Lighting installed along the Bristol/Bath railway cycle path during 2014/15 and 2015/16. These works will significantly improve conditions for cyclists along this major cycling corridor which also serves the Staple Hill AQMA.
- Local Pinch Point Funding has enabled improvements to the M5 motorway junctions 16 and 17, in order to manage the impact of anticipated development and reduce congestion. Works were completed during 2015/16 and should be

of benefit to the Cribbs Causeway AQMA and should help to maintain the nitrogen dioxide concentrations below the air quality objective.

- A signing review of delivery bays was undertaken during 2015 in Kingswood. Implementation of remedial measures following that review were completed in October 2016, which will improve local enforcement.
- The local transport capital programme 2016/17 approved a wider parking management review of the extended Kingswood - Warmley AQMA. Recommendations from the review address parking issues along the A420 Hill Street/Deanery Road and in Warmley, and the two resulting schemes are due to be completed in 2018 and 2019 respectively. This builds on the delivery of measure KS2 already delivered in the former Kingswood AQMA.

Full details of progress in implementing the existing Air Quality Action Plan for Kingswood and Staple Hill are contained in Section 2.2 of this report.

Other actions being progressed on a wider West of England basis aimed at reducing traffic congestion which should contribute to improved air quality include:

- Metrobus - a rapid public transport system which will provide direct routes to key employment, education and leisure destinations around the area<sup>8</sup>. Further information is also provided in Appendix D.
- Cribbs Patchway Metrobus Extension<sup>9</sup> - an extension of the Metrobus scheme to help reduce traffic levels caused by the proposed Cribbs Patchway New Neighbourhood on the former Filton Airfield. It will provide a direct route between Bristol Parkway railway station and The Mall, via the new neighbourhood.
- MetroWest<sup>10</sup> – improved rail services and infrastructure. This project is being delivered in two phases by the West of England councils, working in partnership with Network Rail and Great Western Railway, along with a separate new stations package looking at the potential for future new stations. The Phase 2 project is proposing to re-open the Henbury Line to an hourly spur passenger service and increase train services to Yate to a half-hourly service and the plans include new rail stations at Henbury, North Filton and

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<sup>8</sup> <https://travelwest.info/metrobus>

<sup>9</sup> <https://travelwest.info/projects/cribbs-patchway-metrobus-extension>

<sup>10</sup> <https://travelwest.info/projects/metrowest>

Ashley Down. This project is led by South Gloucestershire Council on behalf of the four West of England Councils

- Cycle Ambition Fund – improvements to cycle routes to provide better door-to-door journeys<sup>11</sup>, including various projects in South Gloucestershire<sup>12</sup>, e.g. Bromley Heath Walking and Cycling Bridge and Mangotsfield Cycle Path Lighting.
- GoUltraLowWest<sup>13</sup> - a grant funded project by OLEV (Office for Low Emission Vehicles) for investment in the promotion of electric vehicles throughout the West of England region. The Government’s aspiration is that by 2040, every new car in the UK will be an ultra-low emission vehicle.
- The Joint Local Transport Plan (JLTP) for the West of England region, currently JLTP3 covering the period 2011 -2026, is being updated to produce a new Joint Local Transport Plan (JLTP4) to take strategic transport planning beyond 2026. Goal 3 within the existing JLTP3 is to improve air quality in the AQMAs and a greater emphasis will be placed on air quality in the JLTP4.

During 2017 and early 2018, South Gloucestershire Council officers continued to be involved in the Project Steering Group for the Clean Air Feasibility Study with Bristol City Council. However, the project needed to refocus as Bristol developed its Outline Business Case for the Clean Air Plan in line with the Ministerial Direction, so changes to the governance and delivery arrangements of the project were made.

Subsequently, through meetings organised by the West of England Combined Authority (WECA), there has been continued collaboration with Bristol City Council and Bath and North East Somerset Council on their Clean Air Plans, which both consider the implementation of a Clean Air Zone, alongside other measures.

Modelling work has indicated that if a Clean Air Zone were to be introduced in Bristol that this would impact sufficient “through” vehicle trips to also improve air quality in the Kingswood – Warmley and Staple Hill AQMAs. Further information about the Bristol Clean Air Plan is available on the [Clean Air for Bristol](https://www.cleanairforbristol.org/) website<sup>14</sup> and for the Bath Clean Air Plan, on the [Bath Breathes](http://www.bathnes.gov.uk/bath-breathes-2021) website<sup>15</sup>.

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<sup>11</sup> <https://travelwest.info/projects/cycle-ambition-fund>

<sup>12</sup> <https://travelwest.info/projects/cycle-ambition-fund/south-gloucestershire>

<sup>13</sup> <https://travelwest.info/drive/electric-vehicles/go-ultra-low-west>

<sup>14</sup> <https://www.cleanairforbristol.org/>

<sup>15</sup> <http://www.bathnes.gov.uk/bath-breathes-2021>



In February 2018, South Gloucestershire Council was also mandated by the Government to undertake a Targeted Feasibility Study into possible actions to bring forward compliance with nitrogen dioxide EU limit values on a 1.27 km section of the A4174 Ring Road between the Bromley Heath and M32 Junction 1 roundabouts. This section of the A4174 was predicted to exceed the EU annual mean Limit Value for nitrogen dioxide ( $40 \mu\text{g}/\text{m}^3$ ) until 2020 by national Pollution Climate Mapping (PCM) modelling used by Defra to report to the EU on UK air quality. This was the only local authority road link in South Gloucestershire where an exceedance was predicted beyond 2017.

The study concludes that it would be possible to bring forward compliance of the identified section of the A4174 from 2020 to 2019 if the following measures were implemented:

- Removal of westbound A4174 right-turn to B4058 Bristol Road towards Winterbourne and northbound B4058 Bristol Road right-turn to A4174 from Frenchay at the A4174 Hambrook crossroads.
- In addition to the above, the use of 'soft gating' to limit traffic movements from Bromley Heath roundabout to be implemented by adjusting the peak traffic timings to ensure that additional trips are not generated by the additional capacity provided.

The Feasibility Study has been submitted to the Joint Air Quality Unit (JAQU); a new joint unit formed between Defra and the Department for Transport (DfT), and is currently being reviewed. South Gloucestershire Council was one of 33 local authorities mandated in the so-called "Third wave" of authorities required to achieve compliance with air quality limits in the shortest possible time and the approved studies will be included in the supplement to the 2017 UK Air Quality Plan<sup>16</sup> due in October 2018. It is also intended to publish each study alongside the Supplement.

## Conclusions and Priorities

Some exceedances of the nitrogen dioxide annual mean objective remain, albeit fewer (3) than in 2016 (11), with two exceedances occurring in the Kingswood – Warmley AQMA and one in the Staple Hill AQMA, confirming the AQMAs are still

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<sup>16</sup> <https://www.gov.uk/government/publications/air-quality-plan-for-nitrogen-dioxide-no2-in-uk-2017>

currently required. However, following a review of the monitoring site locations in the Staple Hill AQMA in 2017 and the setting up of six additional monitoring sites at the facades of properties that better represent relevant exposure, only one site (61) from the existing sites in the AQMA remains borderline (within 10% of the annual mean objective i.e.  $>36 \mu\text{g}/\text{m}^3$ ) following distance adjustment to the nearest façade and only one of the new sites set up at worse-case façades of relevant exposure is borderline (site 165). On this basis, the AQMA would no longer be required, however, we are mindful that as pollutant concentrations can vary significantly from year to year, it would be appropriate to review the situation over time to ensure it is sustained before revocation of the AQMA can be considered.

There were no exceedances within the Cribbs Causeway AQMA or outside of the AQMAs.

Since the declaration of the Cribbs Causeway AQMA in 2010, the monitoring results have shown the nitrogen dioxide concentrations are below the annual mean objective at the façade of the single residential property within the AQMA. Defra recommended in their appraisal of the 2016 Air Quality Annual Status Report that revocation of the AQMA should be considered. This report confirms that there was no exceedance in 2017 within this AQMA, demonstrating compliance for the last seven years. We propose to revoke the Cribbs Causeway AQMA and will consult shortly on this.

The monitoring results showed a fall in nitrogen dioxide concentrations at the majority of the Council's monitoring sites in 2017, including at the majority of sites within the AQMAs. However, as already mentioned, pollutant concentrations can vary significantly from one year to another due to a number of factors, in particular, the meteorological conditions. Further discussion of the monitoring results is provided in Chapter 3.

South Gloucestershire Council's priority for the coming year continues to be to review and update the Air Quality Action Plan for Kingswood and Staple Hill in order to incorporate the extension of the Kingswood AQMA to Warmley. The progress on this in 2017/18 has been limited due to the Joint Air Quality Unit mandated Feasibility Study we have been involved in.

We will continue to collaborate with Bristol City Council, Bath and North East Somerset Council on their Clean Air Plans and share progress on each of our mandated JAQU projects via regular WECA Clean Air Zones progress meetings to

deliver improvements and compliance with air quality objectives and limit values in the shortest timescale possible.

However, the Council faces major challenges at a time of significant pressure on public finances, particularly in relation to local government funding, which could impact on delivering air quality improvements. We will be relying upon a commitment from national government to provide the required funding to implement the measures to bring forward compliance in NO<sub>2</sub> levels on the section of the A4174 considered in the Targeted Feasibility Study, should the study outcomes be approved.

The transport system is subject to significant pressure within South Gloucestershire, due to the sheer level of travel demand generated by the current population and by people coming into the area on a daily basis to work, shop and for leisure reasons. These pressures are shown through traffic congestion on South Gloucestershire's road network and capacity problems on local rail services.

The provision for the housing requirement of 105,500 new homes by 2036 for the West of England area has been made in the Joint Spatial Plan<sup>17</sup> (JSP) which has been developed by the four West of England authorities. 32,500 of these new homes are likely to be built in South Gloucestershire.

Alongside the JSP, the four councils developed a Joint Transport Study (JTS)<sup>18</sup>. The JTS is designed to help the region meet the growing travel demands that new growth will bring, as well as tackling existing pressure on road and public transport networks. This includes providing the key transport infrastructure needed to reduce reliance on cars and tackle congestion and measures to improve walking and cycling, better access to public transport and, where necessary, highway capacity improvements. This joint approach to planning and transport will ensure that future growth decisions are made with an understanding of the necessary transport investment needed to achieve sustainable communities.

## **Local Engagement and How to get Involved**

Engagement work to raise public awareness of air quality locally was undertaken by the Council's Public Health Team through the 'Air Quality on the School Journey' project developed jointly with the University of the West of England in 2017. This

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<sup>17</sup> <https://www.jointplanningwofe.org.uk/consult.ti?>

<sup>18</sup> <https://www.jointplanningwofe.org.uk/consult.ti/JTSTransportVision>

used public participatory research to raise awareness of air pollution, specifically particulate matter, its effects on health and opportunities to reduce it. The project was carried out in partnership with a school adjacent to the Kingswood – Warmley AQMA in early 2018, together with the Council's Road Safety Team and also linked in with projects run on their behalf by the national charity 'Living Streets' which encourage active travel methods. The project concentrated on raising awareness of air pollution; its causes, effects and solutions, among children in year 7 who are at the stage where they may begin to have choices about how they travel to school. The project included indicative monitoring of PM<sub>2.5</sub> using personal monitors to record levels of pollution to which children were exposed during travel to and from school.

Children using a variety of travel modes were measured; walking, cycling and travel by car; and the monitoring was carried out over several days. The results were used to highlight the differences in exposure to PM<sub>2.5</sub> pollution by using different modes of transport. During the project relevant travel messages such as 'no parking on zig zags' and 'anti idling' were also provided to parents via the school's normal communication channels; email and social media, in addition to placing banners on railings outside the school. The project also included use of questionnaires and two assemblies to the year group to both introduce the project and present the findings. There was an increase in awareness of air pollution and its effects on health over the course of the project and the children learned that they could make positive choices in relation to their travel modes, to both increase their active travel and help to reduce air pollution. Following the success of this project, consideration is being given to rolling the project out to other schools in South Gloucestershire, depending on resources.

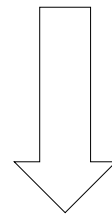
### **What you can do to reduce air pollution?**

Everyone can help to improve air quality in South Gloucestershire and beyond. By making informed personal choices, particularly with regard to travel, we can help to improve air quality and improve our own health in the process.

- Substituting car use, if and when possible, with a bus or train journey, or preferably by walking or cycling, not only reduces air pollution but improves your health and wellbeing.
- If possible, sharing lifts with colleagues to work will save you money as well as reducing the number of cars on the road.

- Chose to travel outside peak hours if possible or work from home if that is an option.
- When looking to change your vehicle, take air pollution in consideration and opt for the cleanest vehicle you feasibly can. Low emission electric and /or hybrid vehicles are becoming more affordable and government funding and grants are available. As a general rule, the hierarchy below can be followed to identify which types of vehicles have the lowest emissions of pollutants which are harmful to health:

- Electric vehicles                      Lowest emissions
- Plug in petrol hybrid
- Petrol hybrid
- Gas or petrol
- Plug in diesel hybrid
- Diesel hybrid
- Diesel                                      Highest Emissions



- However, some vehicle manufacturers and models perform better than other in terms of pollutant emissions. Measurements of the level of pollution emitted under real-world driving conditions have shown large discrepancies with the required Euro emissions standards for vehicles. To check the emissions of your vehicle or the performance of a vehicle that you are considering purchasing, there is an [online vehicle checker](#)<sup>19</sup> that has been launched by the Mayor of London to enable consumers to get the latest data on real world vehicle emissions, compiled through robust independent emissions tests by Emissions Analytics and the International Council on Clean Transportation.
- We recommend you visit the [Travel West](#)<sup>20</sup> website as this provides live information on public transport for journey planning as well as route information for walkers and cyclists. It also provides traffic reports, information on electric vehicle charging infrastructure and other information that simplifies travel choices.

<sup>19</sup> <https://www.london.gov.uk/what-we-do/environment/pollution-and-air-quality/cleaning-londons-vehicles>

<sup>20</sup> <https://travelwest.info/>

While most air pollution in South Gloucestershire is caused by road traffic, domestic heating, in particular wood-burning, is another source of pollution, especially particulates (PM<sub>10</sub> and PM<sub>2.5</sub>). Measures that could be considered to reduce pollution from domestic heating, include:

- Upgrading boilers to newest and most efficient gas condensing boilers with lowest NO<sub>x</sub> (and carbon) emissions.
- “Clean” renewable energy generation, for example via solar photovoltaics.
- If you are currently using a wood burner or open fire make sure that you are using it correctly and not breaking the Smoke Control Area regulations. Some of South Gloucestershire is covered by a smoke control area<sup>21</sup> which allows only approved fuels and appliances to be used.
- Should you plan to install a stove, then the lowest emission stoves currently on the market are those that are ‘Ecodesign Ready’. These will meet the future EU standards for all new stoves in the UK set to be introduced in 2022.
- While the type of solid fuel appliance used is an important factor in determining the level of pollution emitted, the way in which they are used is equally as important. Understanding the right fuels and the right way to use them is explained within the “[Open fires and wood-burning stoves](#)” guidance leaflet<sup>22</sup> issued by Defra.
- However, from an air pollution perspective, if you do not own an existing stove or open fireplace, the best option is not to install one as recent research shows that even the lowest emitting wood burning appliance emits an order of magnitude more particulate matter than a gas oil appliance and two orders of magnitude more than a gas appliance.

There are decisions we can all make to reduce air pollution. Even relatively small changes can add up and make a real difference to the quality of the air we all breathe.

Further information is available on our website [www.southglos.gov.uk/airquality](http://www.southglos.gov.uk/airquality)

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<sup>21</sup> <https://www.southglos.gov.uk/environment-and-planning/pollution/pollution-control-clean-air-act-approval/smoke-control-areas/>

<sup>22</sup> [https://consult.defra.gov.uk/airquality/domestic-burning-of-wood-and-coal/supporting\\_documents/open%20fires%20wood%20burning%20stoves%20%20guideA4update12Oct.pdf](https://consult.defra.gov.uk/airquality/domestic-burning-of-wood-and-coal/supporting_documents/open%20fires%20wood%20burning%20stoves%20%20guideA4update12Oct.pdf)