



2023 Air Quality Annual Status Report (ASR)

Executive Summary

Date: August 2023

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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, the elderly, and those with existing heart and lung conditions. There is also often a strong correlation with equalities issues because areas with poor air quality are also often less affluent areas^{1,2}.

The mortality burden of air pollution within the UK is equivalent to 29,000 to 43,000 deaths at typical ages³, with a total estimated healthcare cost to the NHS and social care of £157 million in 2017⁴.

Air pollution can arise from many different sources, including transport, industry and commercial and domestic heating, in particular solid fuel burning. Pollutant levels are assessed against national air quality objectives (shown in Appendix E) and 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.

Air Quality in South Gloucestershire

South Gloucestershire lies to the north and east of the city of Bristol with the River Severn on the western boundary and the Cotswold escarpment to the eastern edge. The area is a diverse mix of urban and rural areas, including major residential, industrial and commercial developments. The major junction of the M4 and M5 motorways (the Almondsbury Interchange) is within South Gloucestershire.

The population estimate for South Gloucestershire from the 2021 Census is 290,400⁵, which is an increase of 10.5% compared to the recorded population in the 2011 census

¹ Public Health England. Air Quality: A Briefing for Directors of Public Health, 2017

² Defra. Air quality and social deprivation in the UK: an environmental inequalities analysis, 2006

³ Defra. Air quality appraisal: damage cost guidance, January 2023

⁴ Public Health England. Estimation of costs to the NHS and social care due to the health impacts of air pollution: summary report, May 2018

⁵ [Census | BETA - South Gloucestershire Council \(southglos.gov.uk\)](https://southglos.gov.uk/census-beta)

(262,800). The growth in population over the last 10 years in South Gloucestershire is higher than in all of its neighbouring authorities, Bristol, Bath and North East Somerset, North Somerset and Gloucestershire⁶. Most of the population lives within the urban areas on the north and east fringes of Bristol and in the towns of Yate and Thornbury, while the remainder live in the villages and more rural areas of South Gloucestershire. The population is projected to continue increasing to 354,300 by 2043⁷ so managing future development and providing vital transport infrastructure is a key challenge.

The main air pollutant of concern locally is nitrogen dioxide (NO₂), which mostly arises from road traffic (34%, rising to 80% near roadsides)⁸. Particulate matter is also a pollutant of concern. Sources of particulate matter (PM₁₀ and PM_{2.5} which are described by the particle size) include domestic wood and coal burning (38%), industrial combustion (16%) and road transport (12%)⁹.

Air Quality Management Areas

There are two AQMAs currently declared in South Gloucestershire in relation to exceedances, or likely exceedances, of the annual mean objective for nitrogen dioxide (40 µg/m³):

- Kingswood – Warmley – from the Bristol/ South Gloucestershire boundary in Kingswood along the A420 to the junction with Goldney Avenue in Warmley.
- Staple Hill – in the centre around the Broad Street/ High Street/ Soundwell Road/ Victoria Street crossroads and the High Street/ Acacia Road/ Pendennis Road crossroads.

Details of the current AQMAs are included in **Error! Reference source not found.** of this report and maps are available in Appendix D. Further information on the AQMAs is available on the Council website [Air quality | BETA - South Gloucestershire Council \(southglos.gov.uk\)](https://southglos.gov.uk/air-quality/beta) and on the Defra UK-AIR website [Local Authority Details - Defra, UK](https://uk-air.defra.gov.uk/details-by/la).

⁶ [Key facts and figures about the area | BETA - South Gloucestershire Council \(southglos.gov.uk\)](https://southglos.gov.uk/air-quality/beta)

⁷ [Subnational population projections for England - Office for National Statistics](https://www.ons.gov.uk/peoplepopulationandcommunity/ethnicityandnationality/bulletins/subnationalpopulationprojectionsforengland)

⁸ Defra Clean Air Strategy 2019 [Clean Air Strategy 2019 \(publishing.service.gov.uk\)](https://publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/791247/clean-air-strategy-2019.pdf)

⁹ Defra Clean Air Strategy 2019 [Clean Air Strategy 2019 \(publishing.service.gov.uk\)](https://publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/791247/clean-air-strategy-2019.pdf)

The former Cribbs Causeway AQMA adjacent to the M5 Junction 17 roundabout was revoked in July 2020 as nitrogen dioxide concentrations within the AQMA have consistently been below the annual mean objective since 2010. Further information is provided in Section 2.1 of the report.

Trends in monitored pollutant concentrations

South Gloucestershire Council carried out automatic (continuous) monitoring at the following three sites during 2022 (the pollutant(s) monitored at each site are shown in brackets):

- Yate – Station Road (NO₂ and PM₁₀) – a long standing site
- Stoke Gifford A4174 Ring Road near Coldharbour Lane and the University of West England (NO₂, PM₁₀, PM_{2.5} and Ozone (O₃)) – began operating in August 2021
- Hambrook A4174 Ring Road (NO₂) – a new site from April 2022.

The key outcomes from the automatic monitoring in 2022 are:

- NO₂ concentrations were below the annual mean objective of 40 µg/m³ and the 1-hour objective (200 µg/m³ not to be exceeded more than 18 times a year) was met at all three automatic sites.
 - The annual mean concentration at Hambrook was 29.6 µg/m³. As monitoring began part way through 2022, the result was “annualised” (adjusted from short to long-term) to reflect the whole year.
 - There were slight decreases in the annual mean NO₂ concentrations at Yate (13 µg/m³) and Stoke Gifford (21 µg/m³) compared to 2021.
 - The Yate annual mean showed a 31% decrease from the pre-pandemic 2019 annual mean of 19 µg/m³. This follows a similar trend across the national automatic urban and rural monitoring network (AURN) roadside sites where the average 2022 NO₂ annual mean concentration also decreased slightly from the 2021 concentration and remained 24% lower than the concentrations in 2019¹⁰.
 - The long-term trend data for Yate shows an overall continuing decline in annual mean NO₂ concentrations over the last decade from 27 µg/m³ in 2012.

¹⁰ [Nitrogen dioxide \(NO₂\) - GOV.UK \(www.gov.uk\)](https://www.gov.uk/government/statistics/nitrogen-dioxide-no2-statistics)

- PM₁₀ concentrations were below the annual mean objective of 40 µg/m³ and met the 24-hour mean objective (50 µg/m³ not to be exceeded more than 35 times a year) at both the Yate and Stoke Gifford sites.
 - The annual mean concentration at Yate was 12 µg/m³ and 20 µg/m³ at Stoke Gifford.
 - The longer-term data at Yate shows a slight decrease compared to pre-pandemic annual mean of 13 µg/m³ in 2019 but the levels remain slightly higher than the 2020 annual mean of 11 µg/m³. This follows the trend in annual average PM₁₀ concentrations at the national AURN roadside sites which have remained relatively stable between 2015 and 2022, although overall, roadside PM₁₀ pollution has reduced in the longer-term¹¹.
 - This is mirrored at Yate where overall, the annual mean PM₁₀ concentrations have been slowly declining over the last decade from 16 µg/m³ in 2012.
 - There were 3 exceedances of the 24-hour daily mean at Stoke Gifford, however 35 exceedances are allowed so the objective was met. There were no exceedances of the daily mean at Yate.
- PM_{2.5} concentrations monitored at Stoke Gifford were below the annual mean limit of 20 µg/m³ and the new annual mean concentration target of 10 µg/m³ to be met by 2040 (and the interim target of 12 µg/m³ by 2028) introduced under the Environment Act 2021.
 - The annual mean concentration in 2022 was 9 µg/m³ at Stoke Gifford, which is a slight increase on the annualised mean of 7.4 µg/m³ in 2021.
- Ozone (O₃) concentrations monitored at Stoke Gifford exceeded the ozone objective (100 µg/m³ not to be exceeded more than 10 times a year) in 2022, as there were 22 days when the maximum running 8-hour mean was above 100 µg/m³. However, the responsibility for meeting this objective sits with national government because of the transboundary nature of ozone. Nevertheless, it is useful to monitor ozone as reducing levels of NO₂ are invariably accompanied by an increase in ozone levels. This is of concern due to the health impacts of ozone¹² and because ozone is a greenhouse gas in the lower atmosphere.

¹¹ [Particulate matter \(PM10/PM2.5\) - GOV.UK \(www.gov.uk\)](https://www.gov.uk/government/topics/particulate-matter)

¹² [Ozone \(O3\) - GOV.UK \(www.gov.uk\)](https://www.gov.uk/government/topics/ozone)

There was also extensive monitoring of nitrogen dioxide at the 92 non-automatic (passive) diffusion tube monitoring sites that formed the local air quality management (LAQM) network across the district in 2022.

The key outcomes from the diffusion tube monitoring are:

- NO₂ concentrations were below the annual mean objective of 40 µg/m³ so there were no exceedances at the LAQM diffusion tube monitoring sites in South Gloucestershire, including within the Kingswood – Warmley and Staple Hill AQMAs.
- The 2022 annual mean NO₂ concentrations slightly increased by an average of 1% across the LAQM diffusion tube sites compared to 2021. However, overall since 2019, the NO₂ concentrations across the long-term sites reduced by 17% on average. This compares reasonably well with the trend across the national automatic roadside monitoring sites where the average 2022 NO₂ annual mean was 24% lower than in 2019.
- In the Kingswood – Warmley AQMA, annual mean NO₂ concentrations decreased by an average of 1.7% from 2021 to 2022. There were no exceedances of the annual mean NO₂ objective or any “borderline” sites (within 10% of the annual mean objective, so greater than 36 µg/m³) in this AQMA. From 2019 to 2022, the NO₂ concentrations reduced by an average of 21.5% in the AQMA.
- At the single previously exceeding site pre-pandemic in 2019 (and 2018) in South Gloucestershire within the Kingswood – Warmley AQMA (Site 146 Kingswood - Hill Street), the NO₂ concentration decreased by 23% from 2019 (42.3 µg/m³) to 2022 (32.8 µg/m³). The 2022 NO₂ concentration monitored at this site was the highest in either of the AQMAs.
- In the Staple Hill AQMA, NO₂ concentrations increased very slightly by an average of 0.25% from 2021 to 2022 at the monitoring sites in the AQMA. Overall, from 2019 to 2022, the NO₂ concentrations have reduced by an average of 18% in this AQMA. There were no exceedances of the annual mean NO₂ objective or any “borderline” sites in this AQMA.
- Outside of the AQMAs, there was one marginally “borderline” site (once adjusted for distance to the façade of the nearest residential property to reflect relevant exposure) in Patchway on the A38 Gloucester Road close to Hayes Way (Site 188). The same site was marginally borderline in 2021. This indicates a potential area of concern away from the AQMAs.

The details of the monitoring sites and results are provided in Appendix A. The monitoring results and trends in the data are discussed fully in Section 3.2 of the report and trend graphs are available in Appendix A. The monitoring data from the South Gloucestershire automatic sites is available to view on the [Air Quality in the United Kingdom \(ukairquality.net\)](https://ukairquality.net) website.

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 Directorate for Place enabling close working between these teams. There is also a close working relationship with the Public Health Team in the Directorate for People, 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 development of a council-wide approach to air quality has brought services which have an interest and/or impact on air quality, including Public Health, Environmental Health, Transport Policy, Environmental Policy and Climate Change, Spatial Planning, Development Control, Street Care and Highways and Strategic Communications, together into a Board. The Clean Air and Climate Change Board is co-chaired by the Director for Place and the Director of Public Health. With the Board also covering Climate Change, this ensures there is a joined-up approach across the two work areas, which are closely interlinked with often the same sources and interventions and secures alignment with the Council's Climate Emergency Strategy and Action Plans¹³.

Public Health led on the development of a South Gloucestershire Clean Air Strategy, which was approved by the Council in July 2020. Subsequently, a new Clean Air Action Plan (CAAP) has been developed to implement the visions and priorities contained within South Gloucestershire's Clean Air Strategy and to fulfil the Council's statutory local air quality management duties to update the 2012 Air Quality Action Plan for the Kingswood and Staple Hill AQMAs.

Public Consultation was carried out on the draft Clean Air Action Plan between 6 December 2022 and 31 January 2023 to seek the views of the public and businesses on

¹³ [Climate and nature emergency in South Gloucestershire | BETA - South Gloucestershire Council \(southglos.gov.uk\)](https://southglos.gov.uk)

the 30 proposed actions designed to improve air quality within the AQMAs and across South Gloucestershire. Further information, including the consultation findings, is available on the [Clean Air Action Plan - South Gloucestershire Online Consultations](https://southglos.gov.uk/clean-air-action-plan) (southglos.gov.uk) webpage. The feedback from the consultation is being considered and will help shape the final Clean Air Action Plan.

South Gloucestershire works closely with other neighbouring authorities in the West of England (Bath and North East Somerset, Bristol City and North Somerset Councils), and also with the West of England Combined Authority (WECA), to develop, implement and refine schemes with cross-boundary characteristics and particularly with regard to regional strategic work areas such as transport, e.g. the Joint Local Transport Plan (JLTP4¹⁴) and the Travel West¹⁵ brand which acknowledges commuters do not think in terms of Council boundaries.

Actions to Improve Air Quality

Whilst air quality has improved significantly in recent decades, there are some areas where local action is needed to protect people and the environment from the effects of air pollution.

The Environmental Improvement Plan¹⁶ sets out actions that will drive continued improvements to air quality and to meet the new national interim and long-term PM_{2.5} targets. The National Air Quality Strategy¹⁷, published in 2023, provides more information on local authorities' responsibilities to work towards these new targets and reduce PM_{2.5} in their areas. The Road to Zero¹⁸ details the approach to reduce exhaust emissions from road transport through a number of mechanisms; this is extremely important given that the majority of Air Quality Management Areas (AQMAs) are designated due to elevated concentrations heavily influenced by transport emissions.

¹⁴ [Joint Local Transport Plan - Combined Authority \(westofengland-ca.gov.uk\)](https://westofengland-ca.gov.uk/jltp4)

¹⁵ [Homepage - Travelwest](https://travelwest.co.uk)

¹⁶ Defra. Environmental Improvement Plan 2023, January 2023

¹⁷ [The air quality strategy for England - GOV.UK \(www.gov.uk\)](https://www.gov.uk/government/publications/the-air-quality-strategy-for-england)

¹⁸ DfT. The Road to Zero: Next steps towards cleaner road transport and delivering our Industrial Strategy, July 2018

The key completed measures to improve air quality are:

- Under the second round of the Clean Bus Technology Fund, First Bus and CT Plus (while it was operating) have retrofitted nearly 150 buses with emissions-reducing technology.
- 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 has enabled the delivery of 98 bio-methane buses and two re-fuelling stations in the area. The new buses will contribute to reducing air pollution levels across the West of England area, including in the Staple Hill AQMA.
- Entire fleet of Council pool cars switched to electric in 2017, with OLEV funding secured to switch 20% of other fleet vehicles to electric in 2021.
- Capability funding was secured, which ran from July 2021 until June 2022 and replaced the previous Access funding, to continue providing support to encourage sustainable and active travel modes across South Gloucestershire. This has since been replaced by Capability and Ambition funding which supports a range of activities, including Dr Bikes and Roadshow events being delivered to Workplaces and Communities, community cycle training and specific immersive young adult cycle training and cycle maintenance training across South Gloucestershire.
- The Road Safety Team continues to work with schools to promote active travel, including school street schemes; one of which was introduced at Kings Oak Academy, Kingswood, close to the Kingswood – Warmley AQMA, in September 2020¹⁹.

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

Other actions progressed in South Gloucestershire and on a wider West of England regional basis aimed at reducing traffic congestion and improving air quality include:

- Kingswood Town Centre Regeneration²⁰ - West of England Combined Authority (WECA) funding from the “Love our High Streets” programme enabled investigation into the redevelopment potential of Kingswood High Street, including the possibility

¹⁹ [Active travel to school | BETA - South Gloucestershire Council \(southglos.gov.uk\)](https://southglos.gov.uk/active-travel-to-school/)

²⁰ [Kingswood Masterplan | BETA - South Gloucestershire Council \(southglos.gov.uk\)](https://southglos.gov.uk/kingswood-masterplan/)

of re-routing traffic in Kingswood town centre. A masterplan was subsequently developed and consulted on during 2021 and work is ongoing to refine the proposals. The ability to improve local air quality will be one of the specific considerations for the final scheme.

- Metrobus - an express bus service, which aims to relieve congestion, reduce pollution, improve journey times and access to key employment, education and leisure destinations²¹. The Metrobus services began operating in 2018 and there are currently four metrobus routes in operation; three of which run between South Gloucestershire and Bristol (M1, M3 and M4 services).
- Cribbs Patchway Metrobus Extension²² - this extension of the Metrobus network in South Gloucestershire provides an alternative, fast, direct route between The Mall at Cribbs Causeway and Bristol Parkway railway station (and onto Bristol City centre via the University of West of England). It benefits communities in Stoke Gifford, Patchway and the forthcoming Cribbs Patchway New Neighbourhood on the former Filton Airfield site. Passenger services on the M4 service began in January 2023.
- MetroWest²³ – improved rail services and infrastructure being delivered in two phases by the West of England councils, working in partnership with Network Rail and Great Western Railway. In South Gloucestershire, Phase 1 proposes to enhance local passenger train services on the Severn Beach line to an hourly service to Bristol Temple Meads. Phase 2 proposes to re-open the Henbury Line to an hourly spur passenger service and increase train services between Bristol Temple Meads and to Gloucester via Yate to a half-hourly service; the latter commenced from May 2023. Plans for new rail stations at Henbury, North Filton, Ashley Down and Charfield²⁴ are being developed with WECA funding.
- Cribbs Patchway New Neighbourhood Cycle Links – a £3.125m package of walking and cycling schemes has been delivered ahead of the completion of the first phase

²¹ [Metrobus - Travelwest](#)

²² [m4: Cribbs Causeway to City Centre - Travelwest](#)

²³ [MetroWest - Travelwest](#)

²⁴ [Charfield train station | BETA - South Gloucestershire Council \(southglos.gov.uk\)](#)

of the development to encourage more people to choose a sustainable travel mode from the outset.

- GoUltraLowWest²⁵ - completion of a £7m project funded by Office for Low Emission Vehicles (OLEV) to accelerate the purchase of electric vehicles and provision of charge points across Bristol, South Gloucestershire, North Somerset and Bath & North East Somerset.
- A38 and Bradley Stoke Way improvements – development of a scheme along the Thornbury to Bradley Stoke Way corridor to improve conditions for people walking, cycling, and travelling by bus to encourage mode shift. Funding has been secured to advance the scheme to detailed design and it is envisaged to be open by 2026.
- A432 Yate to Ring Road A4174 Corridor – development of a scheme along this corridor to improve conditions for people walking, cycling, and travelling by bus and encourage mode shift. Funding has been secured to advance the scheme to detailed design and it is envisaged to be open by 2026.
- South Gloucestershire Electric Vehicle (EV) Charging Strategy – was adopted in March 2023²⁶. The strategy aims to support residents transitioning to EVs through a variety of measures, including the expansion of public charging infrastructure provision, supporting the creation of e-mobility hubs, encouraging the provision of EV charging at workplaces and requiring new developments to adequately cater for EVs.

Further information on the wider actions is provided in Section 2.2 of this report.

South Gloucestershire Council continues to engage with Bristol City Council and Bath and North East Somerset Council on their Clean Air Plans, both of which include Clean Air Zones, through meetings organised by the West of England Combined Authority (WECA).

The Bath Clean Air Zone (CAZ)²⁷ launched on 15 March 2021 and results show the average 2022 annual mean NO₂ concentrations within the CAZ are 26% lower than in

²⁵ [Go Ultra Low West - Travelwest](#)

²⁶ [Electric Vehicle Charging Strategy \(southglos.gov.uk\)](#)

²⁷ [Bath's Clean Air Zone | Bath and North East Somerset Council \(bathnes.gov.uk\)](#)

2019²⁸ and 27% lower in the area immediately around the CAZ. The Bristol CAZ²⁹ was launched on 28 November 2022 and further information about the Bristol Clean Air Plan is available on the [Clean Air for Bristol](#) website³⁰. The Government's Vehicle Checker tool can be used to check whether there is a charge to drive any vehicle in either CAZ [Check your vehicle \(GOV.UK\)](#).

Conclusions and Priorities

In 2022, there were no exceedences of the NO₂, PM₁₀ and PM_{2.5} pollutant objectives identified at any local air quality monitoring site, including in the Kingswood – Warmley and Staple Hill AQMAs. There was an exceedance of the ozone objective at the Stoke Gifford automatic site, however, the responsibility for meeting this objective sits with national government.

While the 2022 annual mean NO₂ concentrations across the LAQM diffusion tube network slightly increased by an average of 1% compared to 2021, overall since 2019, the NO₂ concentrations across the long-term sites reduced by 17% on average. At the long-standing Yate automatic site, the 2022 NO₂ annual mean concentration decreased by 31% from 2019 and there has been long-term declining trends in both NO₂ and PM₁₀ concentrations over the past decade.

The overall trend of lower NO₂ concentrations than pre-pandemic continued in 2022 at the diffusion tube monitoring sites in both AQMAs with NO₂ concentrations remaining below the annual mean objective and borderline level. Aside from the significant decreases in concentrations in 2020, there has been an overall gradual downward trend in nitrogen dioxide concentrations in the Kingswood – Warmley and Staple Hill AQMAs over the past decade.

As of 2022, the Kingswood – Warmley AQMA has been compliant with both the NO₂ annual mean objective and borderline level for 3 years (2020 – 2022), and the Staple Hill AQMA has been compliant with the annual mean objective for 5 years (2018 – 2022) and the borderline level for 3 years (2020 – 2022), so the AQMAs could potentially be

²⁸ [Bath's Clean Air Zone Annual Monitoring Report 2022 \(bathnes.gov.uk\)](#)

²⁹ [Bristol's Clean Air Zone](#)

³⁰ [Clean Air for Bristol | Clean air for everyone | Bristol Clean Air Zone](#)

considered for revocation. However, because the compliant periods include 2020 and 2021, which were both impacted by the Covid-19 pandemic and associated lockdowns, these years are not considered to be representative of long-term trends in NO₂ concentrations. Also noting that pollutant concentrations can vary significantly from one year to the next due to the influence of meteorological conditions, and with the continuing uncertainties and changes in traffic volumes and travel patterns following the Covid-19 pandemic, we consider that a precautionary approach in reviewing the possible revocation of the AQMAs is appropriate to ensure with reasonable certainty, there would not be further exceedances and that below borderline concentrations would be maintained.

For these reasons, we are not proposing to consider revocation of either AQMA at this point but the 2023 monitoring data will be reviewed and revocation considered in the 2024 Air Quality Annual Status Report, particularly in respect of the Staple Hill AQMA as it has been compliant for longer.

There was one diffusion tube site in 2022 with marginally “borderline” concentrations just above 36 µg/m³ (once adjusted to reflect relevant exposure) outside of the AQMAs in Patchway on the A38 Gloucester Road close to Hayes Way. This indicates a potential area of concern away from the AQMAs and emphasises the need for the new Clean Air Action Plan, which aims to improve air quality across the whole district as well as in the AQMAs.

Continuing improvement in air quality beyond compliance across South Gloucestershire is of key importance as there is no clear evidence of a safe level of exposure to particulate matter (PM) or NO₂ below which there is no risk of adverse health impacts, so further reductions of particulate matter and NO₂ concentrations below current targets is likely to bring additional health benefits³¹.

South Gloucestershire Council's priorities for the coming year are to:

- Produce the final Clean Air Action Plan, taking into consideration the outcome of the public consultation, and seek formal approval of the CAAP to enable implementation of the actions to improve air quality within the AQMAs and across South Gloucestershire as a whole.

³¹ [Air Quality - A guide for directors of public health \(defra.gov.uk\)](https://www.defra.gov.uk/publications/default.aspx?publication=6888)

- Continue to monitor and assess the effectiveness of the JAQU directed scheme on the A4174 at Hambrook in achieving compliance with the annual mean NO₂ limit value, as traffic conditions settle to a “new normal” following the Covid-19 pandemic.

The main challenges and barriers to implementation that South Gloucestershire Council anticipates facing are:

- Significant continued pressure on local government funding, exacerbated by the energy crisis, which could impact on delivering air quality improvements, including funding for the actual Clean Air Action Plan measures themselves.
- Travel patterns and traffic volumes have significantly changed following the Covid-19 pandemic. Many organisations have continued to offer flexible working arrangements to their staff, including the ability to work from home for all or part of their contracted hours. This has helped reduce the pressures on the highway network (with Tuesday, Wednesday and Thursdays typically now being the busiest days similar to pre-pandemic conditions). However, the acceleration in the popularity of home delivery services has increased the number of delivery vehicles on the road. Continuing uncertainties and changes in travel behaviour make future transport trends harder to predict.
- Public transport usage continues to be well below pre-Covid-19 pandemic levels, which is impacting on the commercial viability of some bus routes with operators responding by reducing or withdrawing services. This makes it harder for travellers to choose sustainable modes of transport over the private car.
- With the increased uptake of electric powered vehicles being constrained by cost of living and supply chain issues, the knock-on impacts on fleet composition and future trends in pollutant concentrations is difficult to predict.

Local Engagement and How to get Involved

Some local engagement was carried out through the public consultation on our draft Clean Air Action Plan. One of the questions asked in the consultation survey was “How concerned are you about air quality in South Gloucestershire?”. Just over half (55%) of the people who responded to this question said they were concerned about air quality. However, the number of people who responded was relatively small (115 people) considering the population of South Gloucestershire. Continuing to raise awareness and

understanding of the impacts of air pollution on health is a key focus and measures to address this included in the new Clean Air Action Plan.

What can you do to reduce air pollution?

There are many ways that everyone can help contribute towards improving air quality in South Gloucestershire. By making informed personal choices, particularly around how we travel and heat our homes, we can all reduce our personal contribution to air pollution and help improve air quality and improve our own health in the process.

To reduce pollution when travelling:

- Swap some trips in the car for walking, cycling or taking a bus or train, where possible, as this not only reduces air pollution but also, if walking and cycling, improves your health and wellbeing.
- Consider sharing lifts which will save you money on fuel as well as reducing the number of cars on the road.
- Travel outside peak hours and/or work from home, if possible, to save time spent in traffic and use less fuel, reducing emissions while saving time and money.
- If you are thinking of changing your vehicle, try switching to a less polluting type of vehicle and opt for the cleanest vehicle you feasibly can. As a general rule, electric vehicles have the lowest emissions, and then in order of increasing emissions; petrol hybrids, gas or petrol vehicles, diesel hybrids and lastly, diesels have the highest emissions. Emissions can vary depending on make and model and some perform better than others when the emissions in real world driving conditions are compared to the required Euro standards for vehicles. To check the emissions of your vehicle or a vehicle you are considering purchasing, you can use the Government's on-line Vehicle Checker tool – [Check your vehicle \(GOV.UK\)](#).
- Visit the [Travel West](#)³² and [Better by Bike](#)³³ websites for live information on public transport, traffic reports, routes and journey planning for walkers and cyclists, electric vehicle charge points and other information that simplifies travel choices.

To help reduce pollution from domestic heating:

³² [Homepage - Travelwest](#)

³³ [Homepage - Better By Bike](#)

- If a property does not already have a solid fuel burner, e.g. a stove or fireplace, the best option is not to install one, as even the cleanest wood burning appliance emits significantly more particulate matter pollution than a gas oil or gas appliance.
- Should you still plan to install a stove, then consider using an ‘Eco-design’ stove. They produce lower emissions and are more efficient than non Eco-design stoves and open fires. (Since January 2022 new stoves entering the UK market must be Eco-design compliant).
- If you already own a stove or fireplace and choose to use it, make sure you follow the “[Open fires and wood-burning stoves](#)” advice leaflet³⁴ by using the right fuel on an efficient and well-maintained appliance. Some of South Gloucestershire is covered by a [Smoke Control Area](#)³⁵ which allows only approved appliances and fuels to be used.
- Consider a boiler upgrade to the newest and most efficient gas condensing boiler with lowest NOx (and carbon) emissions, especially if the boiler is more than 10 years old. In many cases, the long-term savings made with a more efficient boiler will cover the outlay.
- Consider installing “clean” renewable energy generation, for example, solar photovoltaics or an air source or ground source heat pump.

There are choices that we can all make to reduce air pollution. Relatively small changes all add up, and if everyone contributes, it can make a big difference overall. Further information is available on our website – [Air quality | BETA - South Gloucestershire Council \(southglos.gov.uk\)](#)

Local Responsibilities and Commitment

This ASR was prepared by the Environmental Health Team of South Gloucestershire Council with the support and agreement of officers from the following teams:

Transport and Environmental Policy

Public Health

³⁴ [Open fires wood burning stoves - guide-A4-update-12Oct \(defra.gov.uk\)](#)

³⁵ [Smoke control areas | BETA - South Gloucestershire Council \(southglos.gov.uk\)](#)

This ASR has been approved by:

Executive Director of Place (Nigel Riglar), Environmental Health and Trading Standards Manager (Shaun Fudge) and Environmental Protection Team Leader (Allison Jay).

This ASR has been signed off by the Director of Public Health (Sarah Weld).

If you have any comments on this ASR, please send them to the Environmental Protection Team at:

Address: South Gloucestershire Council

Department for Place

Environmental Protection

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Bristol

BS37 0DD

Telephone: 01454 868001

Email: environmental.protection@southglos.gov.uk