



2024 Air Quality Annual Status Report (ASR)

Executive Summary

Date: July 2024

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Executive Summary: Air Quality in Our Area

Breathing in polluted air affects our health and costs the NHS and our society billions of pounds each year. Air pollution is recognised as a contributing factor in the onset of heart disease and cancer and can cause a range of health impacts, including effects on lung function, exacerbation of asthma, increases in hospital admissions and mortality. In the UK, it is estimated that the reduction in healthy life expectancy caused by air pollution is equivalent to 29,000 to 43,000 deaths a year¹.

Air pollution particularly affects the most vulnerable in society, children, the elderly, and those with existing heart and lung conditions. Additionally, people living in less affluent areas are most exposed to dangerous levels of air pollution².

Table ES 1 provides a brief explanation of the key pollutants relevant to Local Air Quality Management and the kind of activities they might arise from.

Table ES 1 - Description of Key Pollutants

Pollutant	Description
Nitrogen Dioxide (NO ₂)	Nitrogen dioxide is a gas which is generally emitted from high-temperature combustion processes such as road transport or energy generation.
Sulphur Dioxide (SO ₂)	Sulphur dioxide (SO ₂) is a corrosive gas which is predominantly produced from the combustion of coal or crude oil.
Particulate Matter (PM ₁₀ and µm)	<p>Particulate matter is everything in the air that is not a gas.</p> <p>Particles can come from natural sources such as pollen, as well as human made sources such as smoke from fires, emissions from industry and dust from tyres and brakes.</p> <p>PM₁₀ refers to particles under 10 micrometres. Fine particulate matter or PM_{2.5} are particles under 2.5 micrometres.</p>

¹ UK Health Security Agency. Chemical Hazards and Poisons Report, Issue 28, 2022.

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

Air Quality in South Gloucestershire

South Gloucestershire lies to the north and east of the city of Bristol with the River Severn to the west and the Cotswold escarpment to the east. 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 overall population in South Gloucestershire was recorded as 290,400 in the 2021 Census, which was an increase of 10.5% compared to the 2011 census (262,800)³. The population growth in South Gloucestershire in those 10 years was higher than in all of its neighbouring authorities; Bristol, Bath and North East Somerset, North Somerset and Gloucestershire⁴. The latest population estimate for South Gloucestershire is 299,439 based on the 2023 Mid-Year population estimate from the Office of National Statistics (ONS)⁵. 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 main pollutant of concern locally is nitrogen dioxide (NO₂), with road traffic being the main source (34%, rising to 80% near roadsides)⁶. Particulate matter (PM₁₀ and PM_{2.5}) is also a concern with the main source being domestic wood and coal burning (38%)⁷.

Air Quality Management Areas

There are two AQMAs currently declared in South Gloucestershire in relation to previous 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.

³ [Census | BETA - South Gloucestershire Council \(southglos.gov.uk\)](https://www.southglos.gov.uk/beta/census)

⁴ [Key facts and figures about the area | BETA - South Gloucestershire Council \(southglos.gov.uk\)](https://www.southglos.gov.uk/beta/key-facts-and-figures-about-the-area)

⁵ [Population estimates for England and Wales - Office for National Statistics \(ons.gov.uk\)](https://www.ons.gov.uk/population-estimates-for-england-and-wales)

⁶ Defra Clean Air Strategy 2019 [Clean Air Strategy 2019 \(publishing.service.gov.uk\)](https://www.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/424247/clean-air-strategy-2019.pdf)

⁷ Defra Clean Air Strategy 2019 [Clean Air Strategy 2019 \(publishing.service.gov.uk\)](https://www.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/424247/clean-air-strategy-2019.pdf)

- 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 Table 2.1 of the 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 \(southglos.gov.uk\)](#) and on the Defra UK-AIR website [Local Authority Details - Defra, UK](#).

The former Cribbs Causeway AQMA adjacent to the M5 Motorway 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 2023 (the pollutant(s) monitored at each site are shown in brackets):

- Yate Station Road (NO₂ and PM₁₀) – a long standing site operational since 2000
- 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) – began operating in April 2022.

The key outcomes from the automatic monitoring in 2023 are:

- NO₂ concentrations were well 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.
 - There were decreases in the 2023 annual mean NO₂ concentrations at Yate (12.4 µg/m³), Stoke Gifford A4174 (17.9 µg/m³) and Hambrook A4174 (22.5 µg/m³) compared to 2022.
 - The Yate annual mean showed a 35% 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 2023 NO₂ annual mean concentration was 30% lower than 2019 levels⁸.

- The long-term trend data for Yate shows an overall continuing decline in annual mean NO₂ concentrations over the last decade with concentrations reducing by 52% from 26 µg/m³ in 2013.
- 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 PM₁₀ concentration at Yate was 12.3 µg/m³ (similar to 2022) and 17.9 µg/m³ at Stoke Gifford (an 11% decrease on 2022 levels).
 - 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. Overall, the annual mean PM₁₀ concentrations have been slowly declining over the last decade at Yate from 15 µg/m³ in 2013 but more recently stabilising. This follows the trend in annual average PM₁₀ concentrations at the national AURN roadside sites which have remained relatively stable between 2015 and 2023, although roadside PM₁₀ pollution has generally reduced in the longer-term⁹.
 - There was 1 exceedance of the 24-hour daily mean at Stoke Gifford, however 35 exceedances are allowed so the objective was met. This compares to 3 exceedances of the daily mean in 2022. 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 2023 was 7.6 µg/m³ at Stoke Gifford, which is a 16% decrease from the 2022 annual mean of 9 µg/m³.

⁸ [Nitrogen dioxide \(NO₂\) - GOV.UK \(www.gov.uk\)](https://www.gov.uk)

⁹ [Particulate matter \(PM₁₀/PM_{2.5}\) - GOV.UK \(www.gov.uk\)](https://www.gov.uk)

- Ozone (O₃) concentrations monitored at Stoke Gifford were above the maximum running 8-hour mean objective of 100 µg/m³ on 9 days during 2023, compared to 22 days in 2022. However, the ozone objective (100 µg/m³ not to be exceeded more than 10 times a year) has an allowance of 10 days so this objective was not exceeded in 2023. 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 ozone¹⁰ and because ozone is a greenhouse gas in the lower atmosphere.

There was also extensive monitoring of nitrogen dioxide at the 99 non-automatic (passive) diffusion tube monitoring sites that formed the local air quality management (LAQM) network across South Gloucestershire in 2023.

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 of the objective at any of the LAQM diffusion tube monitoring sites in South Gloucestershire, including in the Kingswood – Warmley and Staple Hill AQMAs.
- The 2023 annual mean NO₂ concentrations decreased by an average of 20% across the LAQM diffusion tube sites compared to 2022. This shows a greater reduction than the trend observed across the national automatic urban and rural monitoring network (AURN) roadside sites where the average 2023 NO₂ annual mean concentration decreased by 7% from 2022 levels. Overall since 2019, the NO₂ concentrations across the long-term sites reduced by 34% on average, which compares well to 30% reduction observed across the AURN roadside sites from 2019 levels¹¹.
- In the Kingswood – Warmley AQMA, annual mean NO₂ concentrations decreased by an average of 18% from 2022 to 2023. 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 2023, the NO₂ concentrations reduced by an average of 36% in the AQMA.

¹⁰ [Ozone \(O₃\) - GOV.UK \(www.gov.uk\)](https://www.gov.uk)

¹¹ [Nitrogen dioxide \(NO₂\) - GOV.UK \(www.gov.uk\)](https://www.gov.uk)

- 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 37% from 2019 (42.3 µg/m³) to 2023 (26.7 µg/m³). The 2023 NO₂ concentration monitored at this site was the highest in either of the AQMAs.
- In the Staple Hill AQMA, NO₂ concentrations decreased by an average of 20% from 2022 to 2023 at the monitoring sites in the AQMA. Overall, from 2019 to 2023, the NO₂ concentrations have reduced by an average of 34% in this AQMA. There were no exceedances of the annual mean NO₂ objective or any “borderline” sites in this AQMA.
- Outside of the AQMAs across the rest of the district, there were no “borderline” monitoring sites with NO₂ concentrations greater than 36 µg/m³. At the previously borderline site in 2022 (Site 188 located next to the A38 Gloucester Road in Patchway), the 2023 annual mean NO₂ concentration decreased to 30.1 µg/m³. This was the highest annual mean concentration monitored at any of the LAQM diffusion tube sites across the district, including in the AQMAs, although the façade of the nearest house is set back further from the road so adjusting the result to take account of the distance to the house façade would further reduce the NO₂ concentration.

The details of the monitoring sites and results are provided in Appendix A. The monitoring results and trends in the data are discussed further 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 (SGC) 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, Environment 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 Executive 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 Plans¹².

The Clean Air and Climate Change Board has overseen the development of the South Gloucestershire Clean Air Strategy¹³, which was approved by the Council in July 2020, and subsequently, the draft Clean Air Action Plan (CAAP), which has been developed to implement the visions and priorities contained within the 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 AQMAs¹⁴.

South Gloucestershire Council continues to work closely with other neighbouring authorities in the West of England (Bath and North East Somerset, Bristol City and North Somerset Councils), and with the West of England Combined Authority (WECA), to develop, implement and refine schemes with cross-boundary characteristics, particularly in key regional strategic work areas such as transport, with the Joint Local Transport Plan (JLTP4)¹⁵ being an example of this.

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 targets for fine particulate matter (PM_{2.5}), the pollutant of most harm to human health. The Air Quality

¹² [Climate and nature emergency in South Gloucestershire | BETA - South Gloucestershire Council \(southglos.gov.uk\)](https://www.southglos.gov.uk/Climate-and-nature-emergency-in-South-Gloucestershire)

¹³ [SGC Clean Air Strategy 2020-2024 \(southglos.gov.uk\)](https://www.southglos.gov.uk/SGC-Clean-Air-Strategy-2020-2024)

¹⁴ [2012 Air Quality Action Plan Kingswood and Staple Hill \(southglos.gov.uk\)](https://www.southglos.gov.uk/2012-Air-Quality-Action-Plan-Kingswood-and-Staple-Hill)

¹⁵ [Joint Local Transport Plan - Combined Authority \(westofengland-ca.gov.uk\)](https://www.westofengland-ca.gov.uk/Joint-Local-Transport-Plan)

¹⁶ Defra. Environmental Improvement Plan 2023, January 2023

Strategy¹⁷ provides more information on local authorities' responsibilities to work towards these new targets and reduce fine particulate matter in their areas.

The Road to Zero¹⁸ details the Government's approach to reduce exhaust emissions from road transport through a number of mechanisms, in balance with the needs of the local community. This is extremely important given that cars are the most popular mode of personal travel and the majority of Air Quality Management Areas (AQMAs) are designated due to elevated concentrations heavily influenced by transport emissions.

A key regional plan is the West of England Joint Local Transport Plan 4 (JLTP4) 2020 – 2036¹⁹. One of the five key objectives within the JLTP4 is to "Take action against climate change and address poor air quality" thereby placing a greater emphasis on air quality and climate change in strategic transport planning through to 2036.

South Gloucestershire Council has prepared a comprehensive, area-wide draft Clean Air Action Plan to replace the 2012 Air Quality Action Plan, which will be the focus of our efforts in future years, once the plan is finalised and approved.

Public Consultation was undertaken on the draft Clean Air Action Plan between 6 December 2022 and 31 January 2023. The consultation sought the views of the public and businesses on a wide range of proposed actions designed to improve air quality within the AQMAs and across South Gloucestershire. Further information, including the draft Clean Air Action Plan itself and a consultation report summarising the responses, is available on the [Clean Air Action Plan - South Gloucestershire Online Consultations \(southglos.gov.uk\)](https://southglos.gov.uk/clean-air-action-plan-south-gloucestershire-online-consultations) webpage. The feedback from the consultation has been considered and will help shape the final Clean Air Action Plan. Work continues to finalise the draft CAAP with completion of the final CAAP anticipated in late 2024.

During 2023, actions progressed in South Gloucestershire and across the wider West of England region aimed at reducing traffic congestion and improving air quality include:

¹⁷ Defra. Air Quality Strategy – Framework for Local Authority Delivery, August 2023

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

¹⁹ [Joint Local Transport Plan - Combined Authority \(westofengland-ca.gov.uk\)](https://westofengland-ca.gov.uk/joint-local-transport-plan-combined-authority)

- Cribbs Patchway Metrobus Extension²⁰ - this extension of the Metrobus network²¹ provides an alternative, fast and 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 Brabazon new neighbourhood on the former Filton Airfield site. Passenger services began in January 2023 on the M4 Metrobus route. There are currently four Metrobus routes in operation; three of which run between South Gloucestershire and Bristol (M1, M3 and M4 Metrobus services).
- MetroWest²² – 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 has enhanced local passenger train services on the Severn Beach line to an hourly service to Bristol Temple Meads from December 2021. Phase 2 proposes to re-open the Henbury Line to an hourly spur passenger service and increase train services between Bristol Temple Meads and Gloucester via Yate to a half-hourly service; the latter commenced in May 2023. Plans for new rail stations are progressing with WECA funding. Planning permission for the new rail station at North Filton was granted in January 2023 and for Charfield²³ station in March 2023. The target for these stations to be opened is 2027²⁴.
- A38 and Bradley Stoke Way improvements – SGC are developing 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 and improve air quality. Funding has been secured to advance the scheme to detailed design and it is envisaged to be open by March 2027.
- A432 Yate to A4174 Ring Road Corridor - SGC are developing a similar scheme along this corridor to the above scheme with the same aim of improving conditions for walking, cycling, and travelling by bus to encourage mode shift and improve air

²⁰ [m4: Cribbs Causeway to City Centre - WEST \(travelwest.info\)](#)

²¹ [metrobus - WEST \(travelwest.info\)](#)

²² [MetroWest - WEST \(travelwest.info\)](#)

²³ [Charfield train station | BETA - South Gloucestershire Council \(southglos.gov.uk\)](#)

²⁴ [MetroWest - West of England Combined Authority \(westofengland-ca.gov.uk\)](#)

quality. Funding has also been secured to progress this scheme to detailed design and it is envisaged to be open by March 2027.

- South Gloucestershire Electric Vehicle (EV) Charging Strategy – this strategy was adopted in March 2023²⁵. The strategy aims to support residents transitioning to EVs through a variety of measures, including the expansion of public charging infrastructure. During 2023/24, SGC completed an On-Street Residential Charging Scheme, which provided 14 fast (22kW) charging points in eight residential locations to satisfy the current or future demand of residents unable to charge at home due to a lack of off-street parking.
- SGC are developing plans with local communities for better active travel facilities in Yate and Thornbury ([Have Your Say Today - Getting About In Thornbury - Commonplace](#)). The aim is to make it easier, safer and more attractive to walk, wheel (using a mobility scooter, wheelchair or pushchair) or cycle, especially for those local everyday journeys to school or the shops. When implemented, it is expected the measures will reduce congestion, make the roads and streets quieter and safer, reduce harmful emissions and improve air quality, and encourage more people to get active, contributing to improved public health.
- SGC continued developing measures to support active travel across the region. The Council set up a new Active Travel Grant with over 40 organisations bidding for a grant, of which 21 organisations were successful. Most successful applicants used their grant for either a pool bicycle/e-bicycle or providing cycle parking. Participating organisations have reported back that the scheme has led to a reduction in vehicular journeys to and from their sites, reducing their carbon emissions and vehicle emissions. SGC have also organised a series of cycle training sessions for residents to improve their skills and confidence to encourage more sustainable travel choices.
- Kingswood Town Centre Regeneration²⁶ - WECA funding from the “Love our High Streets” programme enabled investigation into the redevelopment potential of Kingswood Town Centre. Initial proposals focused on the possibility of re-routing traffic and pedestrianising Regent Street, but detailed technical work uncovered

²⁵ [Electric Vehicle Charging Strategy \(southglos.gov.uk\)](#)

²⁶ [Have Your Say Today - Kingswood Regeneration - Commonplace](#)

significant challenges in being able to deliver a suitable diversion route for traffic to enable pedestrianisation, so the pedestrianisation proposal will not be pursued any further. Alternative measures to deliver improvements are being developed, in consultation with local residents and businesses, and delivered, for example, construction is due to start in Summer 2024 on the first phase of walking and cycling improvements in Kingswood²⁷. Improvements in local air quality will remain a key consideration in future proposals.

- The introduction of the Bristol Clean Air Zone in November 2022, which as a class D CAZ also includes private cars, may have also had a beneficial impact on NO₂ concentrations in South Gloucestershire during 2023 as this was the first full year that the CAZ was in operation. NO₂ levels decreased by 10% on average across Bristol and by almost 13% inside the Clean Air Zone in the first year of operation²⁸. Further information is available on [Bristol's Clean Air Zone](#) webpages and the [Clean Air for Bristol](#) website²⁹. The Government's Vehicle Checker tool can be used to check whether there is a charge to drive any vehicle in any CAZ – [Check your vehicle \(GOV.UK\)](#).

Further information is provided in Section 2.2 of the report. This includes a summary of the A4174 Hambrook Air Quality Scheme that South Gloucestershire Council was legally directed to implement to reduce roadside nitrogen dioxide levels on the A4174 Ring Road between the A4017 Bromley Heath and M32 Motorway Junction 1 roundabouts to meet the annual mean NO₂ concentration limit (40 µg/m³), as set out in the Air Quality Standards Regulations 2010³⁰, in the shortest time possible.

It should be noted that the monitoring data for the Hambrook scheme is not reported in the SGC Air Quality Annual Status Reports (ASRs) as it does not come under our Local Air Quality Management (LAQM) duties. It is reported separately to the Government's Joint Air Quality Unit (JAQU). JAQU are currently assessing the 2022 and 2023 monitoring data and the outcome of this assessment will be published when it is available on the scheme

²⁷ [Community Forum - Kingswood Walking and Cycling Improvements - Commonplace](#)

²⁸ [Bristol's Clean Air Zone Cabinet Report](#)

²⁹ [Clean Air for Bristol | Clean air for everyone | Bristol Clean Air Zone](#)

³⁰ [UK Air Quality Limits - Defra, UK](#)

webpage [Hambrook lights – changes to traffic movements | BETA - South Gloucestershire Council \(southglos.gov.uk\)](#).

Conclusions and Priorities

In 2023, there were no exceedences of the NO₂, PM₁₀, PM_{2.5} and Ozone (O₃) pollutant objectives identified at any of the automatic or non-automatic (diffusion tube) monitoring sites in South Gloucestershire, including in the Kingswood – Warmley and Staple Hill AQMAs. Monitored concentrations of NO₂, PM₁₀, PM_{2.5} in 2023 all decreased from 2022 levels, apart from the PM₁₀ annual mean concentration at the Yate automatic site and the Ozone annual mean concentration at the Stoke Gifford A4174 automatic site, both of which remained similar to 2022 levels.

The 2023 annual mean NO₂ concentrations decreased by an average of 20% across the LAQM diffusion tube sites compared to 2022. Overall since 2019, the NO₂ concentrations across the long-term sites reduced by 34% on average. At the long-standing Yate automatic site, the 2023 NO₂ annual mean concentration decreased by 35% from 2019 and there have been long-term declining trends in both NO₂ and PM₁₀ concentrations over the past decade, although PM₁₀ concentrations have more recently stabilised.

The overall trend of lower NO₂ concentrations than pre-pandemic continued in 2023 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.

The overall reducing trend in NO₂ concentrations since 2019 is likely to be due to the combination of the Covid-19 pandemic restrictions initially and ongoing change in travel behaviour since, along with a cleaner vehicle fleet as newer, cleaner vehicles replace older, more polluting vehicles. The introduction of the Bristol Clean Air Zone in November 2022 may also have had an impact on NO₂ concentrations in South Gloucestershire in 2023 with it being the first full year the CAZ was in operation. However, pollutant concentrations can also vary significantly from one year to the next due to the influence of meteorological conditions.

As of 2023, the Kingswood – Warmley AQMA has been compliant with both the NO₂ annual mean objective and borderline level for 4 years (2020 – 2023), and the Staple Hill AQMA has been compliant with the annual mean objective for 6 years (2018 – 2023) and

the borderline level for 4 years (2020 – 2023). Having reviewed the relevant Defra guidance on when it is considered appropriate to revoke AQMAs, the compliant periods include 2020 and 2021, both of which were impacted by the Covid-19 pandemic and associated lockdowns, so both years are not considered to be representative of long-term trends in NO₂ concentrations.

Noting also 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, a precautionary approach in reviewing the possible revocation of the AQMAs is considered appropriate to ensure reasonable certainty there would not be further objective exceedances, and that below borderline concentrations would be maintained.

For these reasons, and as recommended in the Defra appraisal of SGC's 2023 Air Quality Annual Status Report (Section 2.2, point 1 in the report), we do not propose to consider revocation of either AQMA at this stage but the 2024 monitoring data will be reviewed to ensure that it supports continued compliance before revocation is considered in the 2025 Air Quality Annual Status Report.

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. This 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.

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.
- Continue to monitor and assess the effectiveness of the JAQU scheme on the A4174 at Hambrook in achieving compliance with the annual mean NO₂ limit value.

³¹ [Air Quality - A guide for directors of public health \(defra.gov.uk\)](https://www.defra.gov.uk/air-quality/guidance/)

- Review the 2024 monitoring data to consider whether revocation of either the Kingswood — Warmley and/or the Staple Hill AQMAs would be appropriate.

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

- Significant continued pressure on local government funding, exacerbated by the cost of living crisis and inflationary pressures, which could impact on delivering air quality improvements and funding and resources to implement the final Clean Air Action Plan measures.
- Travel patterns and traffic volumes have changed following the Covid-19 pandemic. Continuing uncertainties and changes in travel behaviour make future transport trends harder to predict.
- Public transport usage continues to be below pre-Covid-19 pandemic levels, which is impacting on the commercial viability of many 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 due to their upfront cost and the improvements needed to ensure reliable, accessible charging infrastructure³², 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 are included in the new Clean Air Action Plan.

³² [Electric vehicles and infrastructure - House of Commons Library \(parliament.uk\)](https://www.parliament.uk/libraries/commons/electric-vehicles-and-infrastructure)

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. Electric vehicles have the lowest emissions and older diesels tend to have the highest emissions. You can check the emissions of a vehicle you are considering purchasing using the Government's [Get vehicle information from DVLA - GOV.UK \(www.gov.uk\)](https://www.gov.uk) website.
- Visit the [West](#)³³ travel information website and the [Better by Bike](#)³⁴ website for live information on public transport, traffic reports, routes and journey planning for walkers and cyclists and other information that simplifies travel choices.

To help reduce pollution from domestic heating:

- From an air quality perspective, 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. Even the cleanest wood burning appliance emits significantly more particulate matter pollution than a gas oil or gas appliance.
- If you already own a stove or fireplace and choose to use it, make sure you use the right fuels in the right way to help reduce the amount of fine particulate matter the

³³ [Homepage - WEST \(travelwest.info\)](https://travelwest.info)

³⁴ [Homepage - Better By Bike](#)

stove or open fire emits, and reduce the negative impacts on health. Further information is available on the Defra [Burn Better, Breathe Better](#) website. Some of South Gloucestershire is covered by a [Smoke Control Area](#) which allows only approved appliances and fuels to be used.

- 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

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

Transport Policy (Department for Place)

Public Health and Wellbeing (Department for People)

The 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).

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

If you have any comments on the ASR, please contact the Environmental Protection Team at:

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