South Gloucestershire Council

Consultation Draft Clean Air Action Plan

In fulfilment of Part IV of the Environment Act 1995

Local Air Quality Management

2022 - 2026

Information	South Gloucestershire Council Details
Local Authority Officer	Andrew Edwards, Sally Radwell and Sophie Hatfield (Environmental Health) Fionna Vosper (Public Health)
Department	Department for Place
Address	Environmental Protection, PO Box 1954, Bristol, BS37 0DD
Telephone	01454 868001
E-mail	environmental.protection@southglos.gov.uk
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Foreword

Approved by Councillor Rachael Hunt (Cabinet Member for Communities and Local Place)

We are pleased to present South Gloucestershire's Clean Air Action Plan. The Action Plan shows how we will tackle sources of air pollution and make our air healthier to breathe, protect nature and boost the economy by identifying strategies to reduce pollution from every source.

Governments around the world are working hard to clean up our air but more still needs to be done to improve our air quality and manage climate change. While the UK has addressed many of the worst impacts of air pollution since the middle of the 20th century through legislation and guidance, investment by industry in cleaner processes and a shift towards cleaner forms of energy, we are still experiencing exposure to air pollution. Poor air quality affects everyone's health, particularly the most vulnerable people in society: those living in areas of deprivation, children, elderly people and those with chronic health conditions for example asthma, heart disease, stroke, some cancers and contributes to premature deaths. The UK has set stringent targets to cut emissions by 2030.

We often think air pollution is caused by cars and transport. But vehicles are not the only source of harmful emissions. Air pollution is a result of the way we currently generate power, heat our homes, produce food, and manufacture goods. Using cleaner technologies and changing our behaviours so that we use less energy, will put less harmful gases and pollution into our atmosphere.

This Action Plan outlines the action we will take to improve air quality in South Gloucestershire from 2022 to 2026. It addresses how we will tackle five of the most important air pollutants and considers these under five themes: Emissions from new development and buildings, emissions from transport, communication and awareness raising, emissions from solid fuel/solid waste disposal, council policy and measures. This Action Plan articulates a clear and compelling vision for all those who live, travel and work in South Gloucestershire with meaningful areas for actions, based on data and evidence and has been co-produced by our Department of Place and Department of People.

The Action Plan has been developed at a time when there have been tangible improvements in air quality as a result of the restrictions put in place to tackle Covid-19. There was a significant reduction in vehicle travel and a move to more active and sustainable travel options such as walking and cycling during the pandemic. We will seek to build on the move some people have made to less polluting options through the Covid-19 pandemic and attempt to address the balance of encouraging economic recovery along with improving in air quality for the benefit of us all.

The actions identified in this Action Plan need to be taken in the short and medium term. It is recognised that the wider improvements will be achieved through the move to electric vehicles (EVs) and greener methods of power generation, however, there is a timing issue that we need to take into account. The ban on the sale of new petrol and diesel cars is planned for 2030. Air quality improvements as a result of the move to EVs may take some years to be realised.

The actions considered in this plan have dual benefits, some for climate change and some for wider health improvements. By reducing air pollution and making our roads more accessible to non-vehicle use, improving our local environments and promoting walking and cycling, we will create long lasting holistic improvements for people's health and well as helping to reduce the burdens on the NHS and wider care services.

Executive Summary

This Clean Air Action Plan (CAAP) has been produced to implement the visions and priorities contained within South Gloucestershire's Clean Air Strategy (2020-2024) and to fulfil the council's statutory duties required by the Local Air Quality Management (LAQM) framework. It outlines the action we will take to improve air quality in South Gloucestershire between 2022 and 2026. This CAAP considers air quality throughout the whole of South Gloucestershire in addition to the Air Quality Management Areas (AQMAs) that have been previously declared in Kingswood, which was subsequently extended to Warmley, and Staple Hill.

This action plan will replace the 2012 Air Quality Action Plan for Kingswood and Staple Hill[1]. Details of the projects delivered through the past action plan can be found in the annual air quality reports produced by South Gloucestershire on the council's website[2].

Air pollution is associated with a number of adverse health impacts. It is recognised as a contributing factor in the onset of heart disease, respiratory disease and cancer. Short term exposure can affect lung function, exacerbate asthma and increase hospital admissions for cardiovascular and respiratory conditions. Whilst it affects everyone, there are inequalities in exposure to air pollution with the greatest impact on the most vulnerable. Children, pregnant women and older people, and those with heart and lung conditions are more susceptible to the health impacts. There is also often a strong correlation with equalities issues because areas with poor air quality are also often the less affluent areas[3,4]. Furthermore, low-income communities are more likely to have existing medical conditions.

[1] 2012 Air Quality Action Plan for Kingswood and Staple Hill https://www.southglos.gov.uk/documents/cos120094.pdf

[2] Air Quality reports on South Gloucestershire Council's website https://www.southglos.gov.uk/environment-and-planning/pollution/pollution-control-air-quality/air-quality-reports/

[3] Environmental equity, air quality, socioeconomic status and respiratory health, 2010

[4] Air quality and social deprivation in the UK: an environmental inequalities analysis, 2006

The annual health cost to society of the impacts of particulate matter alone in the UK is estimated to be around £16 billion[5]. In South Gloucestershire, based on 2017 data, it has been estimated that there are around 217 (range of 172 to 332) deaths per year[6] attributable to the combined effects of exposure to nitrogen dioxide and fine particulate matter; this represents approximately 9.3% (range 7.4% to 14.2%) of all deaths of people over 25.

This makes air pollution a very important issue, and one which continues to gain recognition and momentum. South Gloucestershire Council (SGC) is committed to reducing the exposure of people in South Gloucestershire to poor air quality in order to improve health.

Clean Air Actions have been developed based on the eight principles contained in the South Gloucestershire Air Quality Strategy. These are:

1. It is better to reduce air pollution at source than to mitigate the consequences
2. Different air pollutants should be considered and tackled together
3. Any improvement in air quality will have positive consequences but those with co-benefits should be prioritised (e.g., Active travel options which improve air pollution and increase the amount of physical activity people take)
4. Small effects across the population are likely to bring about greater change than large effects for a few individuals
5. Actions need to be wider than just within AQMAs
6. Effective strategies require a coherent approach
7. Everyone has a role to play
8. As action is taken some groups may need particular support

The actions have been classified under five headings related to either the pollutant source or type of action. These are:

[5] Defra. Abatement cost guidance for valuing changes in air quality, May 2013

[6] South Gloucestershire Council Clean Air Strategy 2020-2024

1. Emissions from new development and buildings
2. Emissions from transport
3. Communication and awareness raising
4. Emissions from solid fuel/solid waste disposal
5. Council policy and measures

The CAAP contains a total of 30 actions under these five headings. All are important but we propose to prioritise actions that will reduce transport emissions, for example, reallocating road space for active travel and public transport and improving the active and public transport offer to maximise usage; and also actions to reduce emissions from domestic solid fuel burning. The aim will be to benefit the most people across the widest area.

In this CAAP, we outline how we plan to effectively tackle air quality issues that South Gloucestershire Council (SGC) can directly control. However, it is recognised that there are a large number of air quality policy areas that are outside of the influence of SGC, such as vehicle emissions standards for example. We will continue to work with regional and central government on policies and issues beyond the Council's direct influence.

Air Pollution and Climate Change

South Gloucestershire Council declared a Climate Emergency in July 2019 pledging to provide the leadership to enable South Gloucestershire to become carbon neutral by 2030, double tree canopy cover and take action to restore nature. Alongside the Climate Emergency the council also recognises the Nature Emergency and the need to take action to protect biodiversity and restore nature. Our approach is to embed tackling the ecological emergency within and alongside the broad Climate Emergency agenda as it is a critical aspect of the wider environmental crisis and to make it clear that we need to act holistically. A Climate Emergency Action Plan[7] has

[7] South Gloucestershire Council Climate Emergency Action Plan https://beta.southglos.gov.uk/climate-emergency-in-south-gloucestershire

been developed to respond to this pledge; South Gloucestershire Council has been ranked in the top-10 councils in the UK on its Climate Emergency Action Plan[8].

The Climate Emergency action plan focuses on actions to reduce carbon dioxide (CO_2) emissions, prepare for the local impacts of a changing climate and to protect and restore nature. CO_2 is one of the main drivers of global heating, which has the potential to impact on health through a range of mechanisms, such as an increase in extreme weather events for example. At concentrations found in the atmosphere however, CO_2 isn't directly harmful to health when breathed in. Pollutants such as nitrogen dioxide and particulate matter are however harmful to health at concentrations found in the atmosphere in parts of South Gloucestershire. Many of the sources of carbon dioxide (CO_2) and other greenhouse gases that are a concern for climate change, are also sources of pollutant emissions that are directly harmful to health. This CAAP has been developed to ensure that the air quality improvement measures and the carbon emission reduction measures are complimentary with co-benefits maximised, whilst avoiding actions that might reduce carbon emissions but can potentially be damaging for health due to increased emissions of pollutants such as NO_2 or particulate matter.

Responsibilities and Commitment

This CAAP was prepared by the Environment Health and Public Health teams of South Gloucestershire Council with the support and agreement of officers from the following teams:

Licensing Team

Strategic Planning and Housing

Transport Services Design and Operations

Strategic Planning and Partnership

Asset Information and Carriageway Management

[8] South Gloucestershire Council Newsroom website https://sites.southglos.gov.uk/newsroom/environment/south-gloucestershire-recognised-among-top-10-councils-in-national-climate-emergency-action-plan-scorecards/

Fleet Operations

Transport Planning

Planning Urban Design

Travel Plan Team

Transport Development Control

Strategic Public Transport

Strategic Projects (Transport)

Road Safety and Sustainable Travel

Transport Services Design and Operations

Climate and Nature Emergency Team

This CAAP has been developed with input from council members that formed a Task and Finish Group. The Members on this group were:

- Cllr Liz Brennan (Frenchay and Downend) Conservative
- Cllr Brenda Langley (Hanham) Conservative
- Cllr Matthew Riddle (Severn Vale) Conservative
- Cllr Michael Bell (Staple Hill and Mangotsfield) Labour
- Cllr Ian Boulton (Staple Hill and Mangotsfield)) Labour
- Cllr Katie Cooper (Staple Hill and Mangotsfield) Labour
- Cllr Patricia Trull (Chipping Sodbury and Cotswold Edge) Liberal Democrat
- Cllr Maggie Tyrrell (Thornbury) Liberal Democrat

This draft Clean Air Action Plan has been approved for public consultation by:

Councillor Rachael Hunt, Cabinet Member for Communities and Local Place

Following the consultation, the responses will be considered and the CAAP revised as appropriate for approval and formal adoption by the Council. The CAAP will be subject to an annual review and appraisal of progress by the Clean Air and Climate Change Steering Group. Progress each year will be reported in the Annual Status

Reports (ASRs) produced by South Gloucestershire Council, as part of our statutory Local Air Quality Management duties, which are reported to relevant Council Cabinet Members and submitted to Defra (Department for Environment, Food and Rural Affairs).

If you have any comments on this draft CAAP please visit the South Gloucestershire Council consultation page at https://consultations.southglos.gov.uk/CAAP22 , or contact our consultation team at:

Freepost Plus RTXL-YHGY-GSYS
South Gloucestershire Council
Corporate Consultation Team
Council Offices
Badminton Road
Yate
BRISTOL
BS37 5AF

01454 868009

consultation@southglos.gov.uk

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1. Introduction

This report outlines the actions that South Gloucestershire Council will deliver between 2022 and 2026 in order to reduce concentrations of air pollutants and exposure to air pollution; thereby positively impacting on the health and quality of life of residents and visitors to the South Gloucestershire area. This CAAP considers air quality throughout the whole of South Gloucestershire in addition to the Air Quality Management Areas that have been previously declared in Kingswood, which was subsequently extended to Warmley, and Staple Hill.

It has been developed in recognition of the legal requirement on the local authority to work towards Air Quality Strategy (AQS) objectives under Part IV of the Environment Act 1995 and relevant regulations made under that part and to meet the requirements of the Local Air Quality Management (LAQM) statutory process.

Additional actions have been developed in response to the growing public health evidence base which shows there are health effects from both nitrogen dioxide (NO_2) and particulate matter (PM) pollution at levels below those set in EU and UK law. Whilst this plan addresses the need to achieve compliance with NO_2 objectives in all areas, this is seen as a minimum requirement. The UK objective for annual NO_2 pollution levels is 40µg/m^3 and South Gloucestershire Council has declared air quality management areas based on measured exceedances of this value. The revised World Health Organisation's guideline[9] value for annual average NO_2 levels is now set at 10µg/m^3, which highlights the need to develop actions to reduce pollution beyond the basic UK air quality objective.

The WHO Guideline level for annual average $PM_{2.5}$ levels in outdoor air is 5µg/m^3. The Government have recently consulted on proposals to reduce the UK air quality threshold level for $PM_{2.5}$ from 25µg/m^3 to 10µg/m^3 by 2040. South Gloucestershire Council commenced monitoring of $PM_{2.5}$ in August 2021. The preliminary data indicates that the UK $PM_{2.5}$ standard of 25µg/m^3 was not exceeded, however the concentrations are above the WHO Guideline levels for this pollutant. Therefore

[9] What are the WHO Air quality guidelines?

actions have been developed to reduce PM emissions from the sources of $PM_{2.5}$ that could potentially be reduced through local actions.

The action plan is a working, dynamic document, owned and monitored by the Clean Air and Climate Change steering group. It will be regularly reviewed and updated to ensure it is responsive to the current environment and local need. As part of our statutory duties required by the Local Air Quality Management framework, the council will produce an Air Quality Annual Status Report (ASR) to update on the progress made in implementing the measures detailed in the action plan.

2. Summary of Current Air Quality in South Gloucestershire

2.1 Local Air Quality Management

While the air quality in South Gloucestershire generally meets required legal standards, there are locations where air pollution is very close to or exceeds the national air quality objectives that coincide with where people live and are therefore exposed to it for long periods of time.

In 2022, there are two Air Quality Management Areas (AQMAs) in South Gloucestershire that have been declared due to exceedances of the annual mean objective for nitrogen dioxide (40 µg/m^3):

- 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.
- Kingswood – Warmley – from the Bristol/ South Gloucestershire boundary in Kingswood along the A420 to the junction with Goldney Avenue in Warmley.

Figure 1 shows an overview of the South Gloucestershire area including the main towns and transport links. The inset box indicates the area in Figure 2, which shows the locations of the two AQMAs. Detailed maps of AQMAs can be found in Appendix D.

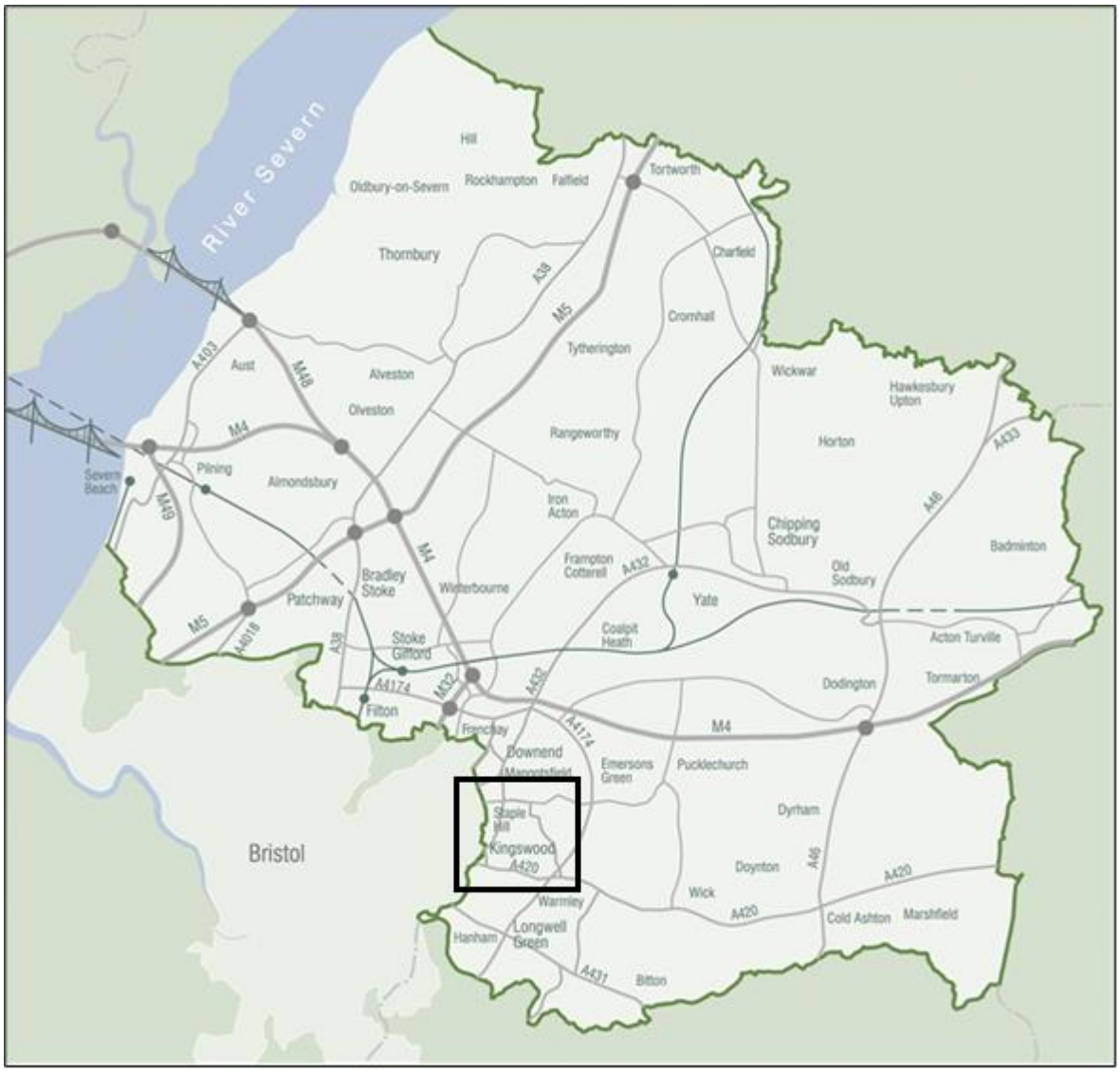

Figure 1 Map of South Gloucestershire showing major towns and transport links

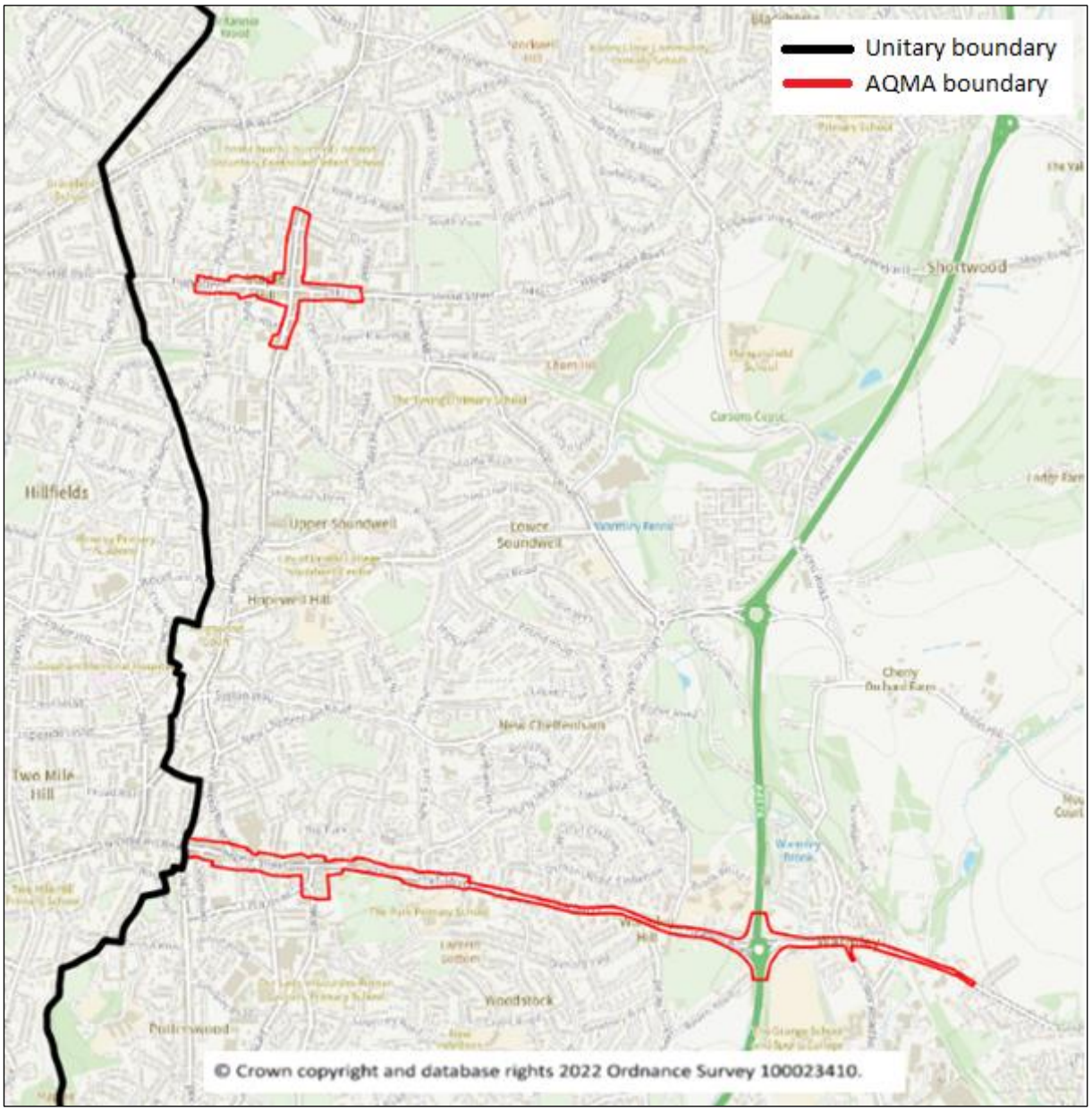

Figure 2. Location of the Staple Hill and Kingswood - Warmley AQMAs

The Covid-19 restrictions on the populations' movements has impacted air pollution data in 2020 and 2021. Pollution levels have fallen in response to a dramatic fall in the number of vehicles on the roads at various points in these years due to Covid restrictions. As a result, 2019 is the last year for which pollution data for 'normal' vehicle levels were measured and this has been summarised below. The long-term impact of Covid and the way in which people travel in the future is uncertain but traffic levels are returning to pre-Covid levels in many locations.

In 2019, South Gloucestershire Council had 102 nitrogen dioxide monitoring sites, including the Yate automatic monitoring site, which monitors both NO_2 and particulate

matter (PM_{10}). There was only one location in South Gloucestershire in 2019 where the nitrogen dioxide annual mean objective was not met (i.e., exceeded), the same as in 2018, in comparison to three exceedances in 2017 and eleven in 2016 across the district. The single exceedance in 2019 (and 2018) was in the Kingswood – Warmley AQMA at Site 146 Kingswood - Hill Street (42.3 $\mu g/m^3$). In comparison, there were two exceedances in 2017 and five in 2016 within this AQMA. There were no exceedances of the nitrogen dioxide annual mean objective in the Staple Hill AQMA in 2019, which was also the case in 2018. There were no exceedances of the nitrogen dioxide annual mean objective outside of the AQMAs where there is relevant exposure (i.e. public exposure for the averaging period of the objective, so in this case, a calendar year).

For the most recent information on air pollutant levels, please refer to the latest Annual Status Report from South Gloucestershire Council[10].

[10] South Gloucestershire Council Air Quality reports https://www.southglos.gov.uk/environment-and-planning/pollution/pollution-control-air-quality/air-quality-reports/

3. South Gloucestershire's Air Quality Priorities

3.1 Public Health Context

Air pollution is harmful to our health, the environment and the economy, and can cause significant inequalities by affecting some groups of people more than others. Poor air quality can affect everyone at all stages of life both through short-term impacts from high-pollution episodes and through long-term exposure to lower levels of pollution that accumulate across the life course.[11] Short-term problems can include minor symptoms such as sneezing and coughing, eye irritation, headaches, and dizziness, increased use of medication such as inhalers, increased days of restricted activity, increased visits to doctors, emergency health services and hospital admissions. Long term problems can start in the womb and accumulate across the life course, which can all result in reduced quality of life and life expectancy[12]. The annual health cost to society of the impacts of particulate matter alone in the UK is estimated to be around £16 billion[13].

In South Gloucestershire, based on 2017 data, it has been estimated that there are around 217 (range of 172 to 332) deaths per year[14] attributable to the combined effects of exposure to nitrogen dioxide and fine particulate matter; this represents approximately 9.3% (range 7.4% to 14.2%) of all deaths of people over 25. Consequently, South Gloucestershire Council is committed to reducing the exposure of people in South Gloucestershire to poor air quality in order to improve health.

Whilst the local air quality management process focuses on achieving compliance in locations where exceedance of UK pollutant objectives occurs, South Gloucestershire Council has taken an approach to developing this Clean Air Action Plan which acknowledges that a small reduction in exposure to air pollution across

[11] (Clean Air Strategy, Department for Environment Food and Rural Affairs, 2019)

[12] (Royal College of Physicians, 2016)

[13] Defra. Abatement cost guidance for valuing changes in air quality, May 2013

[14] South Gloucestershire Council Clean Air Strategy 2020-2024

the population is likely to bring about greater health benefits than large reductions in a few targeted areas. Whilst action to address pollution in the air quality management areas are included, many actions are intended to reduce pollutant emissions across the whole of the Local Authority area, which will reduce pollution levels in the AQMAs as well as outside these areas.

The need to improve air pollution beyond the basic level of compliance, as required by Air Quality Regulations in the UK[15], has been highlighted by the ever-growing body of health evidence. In September 2021, the World Health Organisation published revised ambient (outdoor) air pollution guidelines based on a review of the latest health evidence. The WHO guideline levels are significantly lower than the legal EU and UK limits, as illustrated in Table 3.1 below. Whilst there is no legal requirement to meet the WHO values, they have been referenced to highlight what the latest evidence demonstrates to be harmful levels of air pollution.

Table 3.1 Comparison of EU/UK Air Pollution Limits with WHO Guidelines

Pollutant	Averaging Time	UK Limit Value/Objective	WHO 2021 Guideline Value
Nitrogen Dioxide (NO_2)	Annual	40µg/m^3	10µg/m^3
Particulate Matter (PM_{10})	Annual	40µg/m^3	15µg/m^3
Particulate Matter ($PM_{2.5}$)[1]	Annual	20µg/m^3	5µg/m^3

1 UK Limit Value currently under review

In 2019 and 2020, South Gloucestershire Council measured annual NO_2 pollution at 102 and 96 locations respectively as part of our local air quality management duties. Over these two years, only one location in 2020 recorded NO_2 concentrations below the WHO Guideline value of 10µg/m^3 for this pollutant. This was an urban background site, which is located away from roadside pollutant emissions at Severn Beach Primary School. It should be noted that in 2020 Covid-19 restrictions

[15]UK Air Quality Policy Context - Defra, UK https://uk-air.defra.gov.uk/air-pollution/uk-eu-policy-context

dramatically reduced the number of vehicle movements and consequently NO_2 pollution levels, which shows the scale of the challenge in moving towards air pollution levels that are not considered detrimental to health.

Whilst high quality measurements for $PM_{2.5}$ in South Gloucestershire are limited to one location at a new automatic monitoring station set up in August 2021 adjacent to the A4174 Ring Road near the University of the West of England, it is very likely that exceedances of the WHO guideline value for this pollutant are also widespread, as is the case for monitoring that takes place in the neighbouring Local Authority Area of Bristol. This illustrates that there is a need to tackle air pollution across South Gloucestershire to make improvements in locations where legal pollution levels are not breached and do not require an air quality management area, but where pollution levels are still high enough to be detrimental to health.

3.2 Climate Change Context

In July 2019 South Gloucestershire Council declared a Climate Emergency pledging to provide the leadership to enable South Gloucestershire to become carbon neutral by 2030, double tree canopy cover and take action to restore nature. The declaration also included sign up to the UK100 pledge aligned with the UK net zero target[16]

Alongside the Climate Emergency the council also recognises the Nature Emergency and the need to take action to protect biodiversity and restore nature in response to the critical impacts of local and global ecosystem collapse and nature loss[17,18]. Our approach as set out in our Climate Change Strategy and Green Infrastructure Strategy is to embed tackling the ecological emergency within and alongside the broad Climate Emergency agenda as it is a critical aspect of the wider environmental crisis and to make it clear that we need to act holistically.

Carbon emissions often have the same sources as the sources of pollutants that are directly harmful to health (power generation, housing, transport, industry etc.) and

[16] UK 100 www.uk100.org/membership

[17] Global Assessment Report on Biodiversity and Ecosystem Services https://ipbes.net/global-assessment

[18] State of Nature 2019 - National Biodiversity Network https://nbn.org.uk/stateofnature2019/

therefore require many of the same interventions. Air pollution damages vegetation reducing its ability to act as a carbon sink. Hot and dry weather increases air pollutants, such as ozone.

As explained in the council's Green Infrastructure Strategy 2021[19], the interaction between air pollution and green infrastructure is complex. Green infrastructure can help to create desirable routes which encourage walking and wheeling. On a national scale it can help to remove some (but not all) types of pollution: DEFRA 2018 Effects of Vegetation on Urban Air Pollution[20]. Our approach is to use Green Infrastructure throughout South Gloucestershire to reduce exposure to pollution and to create desirable routes for active travel modes which help reduce vehicle use and emissions as set out in the council's Green Infrastructure Strategy 2021 and the regional Joint Local Transport Plan (JLTP 4)[21] and local cycling and walking infrastructure plan.

Whilst most interventions aimed at reducing emissions of air pollutants from combustion processes will also reduce emissions of greenhouse gases such as carbon dioxide, this isn't always the case. Concerns related to the impact of diesel on air pollution were not adequately addressed when diesel was promoted as a way to reduce carbon emissions, resulting in significant public health impacts. There is a real risk that the promotion of wood burning to reduce carbon emissions will significantly worsen particulate air pollution due to increases in domestic and commercial biomass burning. This is of particular concern in the domestic setting where burning takes place where people live, exposing them directly to the pollution, as opposed to emissions from tall stacks designed to disperse the pollution and that are generally located away from population centres. It should also be noted that in many cases, the source and processes to get wood to its market mean it is not a carbon neutral fuel and is not beneficial to tackle the immediate climate emergency.

[19] Green Infrastructure Strategy 2021 https://beta.southglos.gov.uk/static/b838462276bde81cfe08ec0fab47fdc0/Green_Infrastructure_Strategy_2021_full_document.pdf

[20] Air Quality Expert Group, Impacts of Vegetation on Urban Air Pollution https://uk-air.defra.gov.uk/assets/documents/reports/cat09/1807251306_180509_Effects_of_vegetation_on_urban_air_pollution_v12_final.pdf

[21] West of England Combined Authority Joint Local Transport Plan (JLTP 4) https://www.westofengland-ca.gov.uk/what-we-do/transport/joint-local-transport-plan/

The same groups are most vulnerable; children, the elderly and those with underlying health conditions are at increased risk of the adverse impacts of the local impacts of a changing climate and poor air quality.

3.3 Policy Context

Air quality links to numerous policies and strategies at national, regional and local level in areas such as public health, the environment and planning, that all have implications for air quality and provide guidance and direction to improve air quality. One of the most pertinent of these is the UK Government 2019 Clean Air Strategy[22] which sets out proposals for improving air quality and considering all air pollution sources.

This CAAP provides actions to deliver the aims of the council's Clean Air Strategy (CAS). The Clean Air Strategy is one of many local strategy documents. It sits alongside and has links to:

- Climate Emergency Strategy[23]
- Cycle Strategy[24]
- Housing Strategy 2013 – 2018[25]
- South Gloucestershire Physical Activity Strategy 2015-20[26]
- Biodiversity Action Plan 2016-26[27]
- Healthy Weight and Obesity Strategy 2014-2020[28]

[22] Clean Air Strategy 2019, Defra https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/770715/clean-air-strategy-2019.pdf

[23] South Gloucestershire Council Climate Emergency Strategy https://beta.southglos.gov.uk/wp-content/uploads/Climate-Emergency-Strategy.pdf

[24] South Gloucestershire Council Cycle Strategy https://edocs.southglos.gov.uk/download/cyclestrategy_531.pdf

[25] South Gloucestershire Council Housing Strategy 2013 – 2018 https://www.southglos.gov.uk/documents/Housing-Strategy-2013.pdf

[26] South-Gloucestershire-Physical-Activity-Strategy-2015-20 https://www.southglos.gov.uk/documents/South-Gloucestershire-Physical-Activity-Strategy-2015-20.pdf

[27] South Gloucestershire Council Biodiversity Action Plan 2016-26 https://www.southglos.gov.uk/documents/Biodiversity-Action-Plan-2016-26.pdf

[28] South Gloucestershire Council Healthy Weight and Obesity Strategy 2014-2020 https://www.southglos.gov.uk/documents/Healthy-Weight-Obesity-Strategy.pdf

- South Gloucestershire Joint Health and Wellbeing Strategy 2021-25[29]
- South Gloucestershire Council Green Infrastructure Strategy[30]
- Sustainable Community Strategy 2016[31]
- South Gloucestershire Food Plan[32]
- Local Plan (Core Strategy[33] and Policies, Sites and Places Development Plan[34] (PSP)
- New Local Plan (anticipated to be adopted in 2024)

The CAAP has also been developed to replace and broaden the 2012 Air Quality Action Plan[35] by considering air quality throughout the whole of South Gloucestershire in addition to the AQMAs that have been previously declared. It also aims to feed into future revisions to the local policies and strategies, and current and upcoming neighbourhood masterplans such Kingswood[36] and the North Fringe[37] masterplans.

[29] South Gloucestershire Joint Health and Wellbeing Strategy 2021-25 Joint Health and Wellbeing Strategy 2021-25 | BETA - South Gloucestershire Council (southglos.gov.uk)

[30] South Gloucestershire Council Green Infrastructure Strategy https://beta.southglos.gov.uk/publications/greener-places/draft-green-infrastructure-strategy

[31] South Gloucestershire Council Sustainable Community Strategy 2016 https://www.southglos.gov.uk/documents/Sustainable-Community-Strategy-2016.pdf

[32] South Gloucestershire Food Plan https://edocs.southglos.gov.uk/download/southgloucestershirefoodplan_1394.pdf

[33] South Gloucestershire Council Local Plan https://beta.southglos.gov.uk/static/f149e2bb1bf00a972238eb11eb06d132/South-Gloucestershire-Core-Strategy-2006-2027.pdf

[34] South Gloucestershire Council Policies' Sites and Places Development https://beta.southglos.gov.uk/static/326a821580d49330ee788f663103b1b8/PSP-Plan-Nov2017.pdf

[35] South Gloucestershire Council 2012 Air Quality Action Plan http://aqma.defra.gov.uk/action-plans/south-glos-air-quality-action-plan-march-2012.pdf

[36] South Gloucestershire Council Kingswood Masterplan https://beta.southglos.gov.uk/kingswood-masterplan

[37] South Gloucestershire Council North Fringe Masterplan https://beta.southglos.gov.uk/north-fringe-masterplan

At a regional level, the West of England Combined Authority (WECA) has published a Joint Green Infrastructure Strategy[38], Joint Local Transport Plan[39] and Transport Delivery Plan[40].

3.4 Sources of Air Pollution

Air pollutants come from a range of sources, the way we generate power, heat our homes, produce food, manufacture consumer goods, and power transport. The sources of air pollution in South Gloucestershire are likely to generally mirror the national sources.

- In areas where the UK is exceeding its NO_2 target, 80% is due to road transport, with diesel vehicles being particularly responsible. Transport is also responsible for significant contribution of PM from brake and tyre wear.
- Domestic combustion is a major source of PM in 2020 accounting for 25% of primary $PM_{2.5}$ emissions with 70% of this coming from burning wood in stoves and open fires[41].
- Emissions of $PM_{2.5}$ from domestic wood burning increased by 35% between 2010 and 2020[41].

In South Gloucestershire, there is a mix of urban and rural areas and the road network includes the major junction of the M4 and M5 motorways. Car usage is a major challenge and South Gloucestershire can experience severe traffic congestion at peak times. Since 1991 traffic on the roads of South Gloucestershire has increased by 30% (compared to the national average of 21%), but within the North Fringe of Bristol, traffic has increased by 50%. More households in South Gloucestershire have access to a car than the national average (87% compared to

[38] WECA Joint-Green-Infrastructure-Strategy Joint-Green-Infrastructure-Strategy-—-June-2020..pdf (westofengland-ca.gov.uk)

[39] WECA Joint Local Transport Plan https://www.westofengland-ca.gov.uk/what-we-do/transport/joint-local-transport-plan/

[40] WECA-Transport-Delivery-Plan https://www.westofengland-ca.gov.uk/wp-content/uploads/2021/03/WECA-Transport-Delivery-Plan.pdf

[41] National Statistics, Emissions of air pollutants in the UK – Particulate Matter (PM10 and PM2.5), Defra (2022)

73%) and the proportion of households with 2 or more cars is significantly higher than the national average (42% compared to 29%). Improvements have been made to the public transport system, but traffic congestion continues to adversely affect bus journey times and reliability[42]. Many short journeys are also still made by car and there is a lot of potential for these to be walked or cycled and for the longer journeys to be taken by public transport or broken up with intercepts, such as Park and Rides and sustainable transport hubs.

The measures presented in this Clean Air Action Plan are intended to be targeted towards the predominant sources of emissions within South Gloucestershire over which the council has some level of control.

Ammonia emissions contribute to the formation of secondary particulate pollution, however, farming is the largest source of ammonia emissions in the UK and regulation and practices allowed on farms are not under the control of the council. The situation is similar with respect to some industrial emissions from large processes such as power stations. Whilst the council has influence over the location and types of installation through the planning process, control of emissions from larger processes is determined through national legislation.

3.5 Indoor Air Pollution

Indoor air pollution is currently beyond the scope of this strategy as the guidance available for interventions to improve indoor air quality is more limited. However, it is important to acknowledge the interconnected relationship between the two; outdoor air pollution can be an important contributor to indoor air quality and similarly, indoor air pollution sources may be important causes of outdoor air pollution. There will therefore inevitably be an impact on indoor air pollution through delivery of this strategy. One of the largest sources of $PM_{2.5}$ pollution is domestic wood burning in stoves and open fires. This impacts significantly on outdoor air pollution and also indoor air pollution, exposing users of solid fuel for domestic heating to elevated $PM_{2.5}$ concentrations in their houses. More details of the risks to indoor air pollution

[42] Core Strategy 2006-2027, South Gloucestershire Council (2013)

from solid fuel use can be found in the Institute of Air Quality Managements Indoor Air Quality Guidance: Assessment, Monitoring, Modelling and Mitigation document (September 2021)[43].

3.6 Required Reduction in Emissions

Traditional source apportionment exercises are usually required to quantify the emission sources and to identify the emission reductions required to achieve compliance with air quality objectives. In 2019 in South Gloucestershire, only one location was shown to exceed air pollution objectives in the Kingswood – Warmley AQMA (Hill Street). A masterplan for the regeneration of Kingswood is being developed which is likely to make significant changes to vehicle movements and to reduce pollution. An action related to the Kingswood Masterplan has been included in the CAAP (Measure no. 6). Most other actions in the plan have been developed to the principles as outlined in Section 3.7. For most of these actions it would be impossible to accurately estimate the emissions reductions and subsequent reduction in pollution levels. For those that could possibly be quantified, the cost would be prohibitive and the results uncertain. As a result, no calculations of emissions reductions required have been carried out.

3.7 Principles

Assessing the impacts of air quality interventions, including cost effectiveness, is challenging as pollution levels depend on many factors, including background pollutant levels, geographic location and topography, population density, the location of emission sources and meteorology. Air pollution levels can vary dramatically over short distances and over time. In order to develop the actions contained within this plan, some overarching principles, logic and as well as the evidence base have been used.

[43] Institute of Air Quality Managements Indoor Air Quality Guidance: Assessment, Monitoring, Modelling and Mitigation https://iaqm.co.uk/wp-content/uploads/2013/02/iaqm_indoorairquality.pdf

The eight principles which guide the Clean Air Strategy that led to the development of this Clean Air Action Plan are:

It is better to reduce air pollution at source than to mitigate the consequences. There is a hierarchy of interventions; most effective approaches reduce emissions at source and should be the first priority, actions to reduce the concentration once it has occurred is the second priority, and individual avoidance of exposure is the third.

Different air pollutants should be considered and tackled together. Air pollutants are rarely independent of each other, either in their production or resulting exposures. Interventions to reduce individual pollutants should not be considered in isolation from other pollutants, otherwise reducing harm from one may be countered by an increase in another.

Any improvement in air quality will have positive consequences but those with co-benefits should be prioritised. Legal limits are in place to protect human health. However, it is recognised that there are no safe levels of some pollutants, and health effects can still occur well below these legal limits. Actions with multiple benefits as well as reducing air pollutants, for example, a shift to active travel modes (which increases physical activity, reduces weight, improves mental health, reduces road traffic injuries, reduces congestion, increases biodiversity, and reduces carbon emissions) will be prioritised over actions, such as dust suppressants, which solely reduce pollutants.

Small effects across the population are likely to bring about greater change than large effects for a few individuals. The spectrum of health responses to air pollution in a population can be characterised as a pyramid, with the number of people affected by less severe health problems (such as minor respiratory symptoms, and increased use of medication), being much higher than those affected by the most extreme effects (premature death). While actions need to be targeted on the areas we know to have poorer air quality, we will work to improve air quality across the wider area to bring wider health benefits.

Actions need to be wider than just within AQMAs. Air pollution has health impacts at concentrations below the levels that trigger the requirement to declare an air quality management area under the Local Air Quality Management regime. To focus just on these areas would ignore the health impacts of air pollution experienced by

the population across South Gloucestershire. Air pollution is a global problem that does not abide boundaries. Once released, pollutants are dispersed by the weather and can travel significant distances within and between countries.

Effective strategies require a coherent approach. This should be between local authority functions (such as environmental health and public health, transport and spatial planning) and between local authorities and communities, as well as other public and private sector organisations at all levels, regionally, nationally and internationally.

Everyone has a role to play. Individuals and communities can change behaviours to reduce their exposure and contribution to air pollution. Employers, private and public sector organisations can also play their part to make it easier to make choices that do not contribute to pollution. Local authorities are at the centre of local leadership and can coordinate and lead by example.

As action is taken some groups may need particular support. Some evidence-based actions may disproportionally affect some groups of people. For example, those whose livelihoods depend on driving but who do not have access to or the resources for cleaner vehicles. Without such support, action on air quality may have the perverse impact of increasing inequalities.

3.8 Key Priorities

The key priority areas for South Gloucestershire Council to reduce levels of air pollution and maximise health benefits will be finalised after the results of the consultation process. Although many actions are considered high priority, the proposed priority areas of actions are:

- Raising awareness of the need for re-allocation of road space for active travel and public transport
- Improvements to facilitate active travel and the public transport offer to maximise take-up and usage,
- Actions that raise awareness of the impact of domestic burning of solid fuels.

4. Development and Implementation of South Gloucestershire Clean Air Action Plan

4.1 Consultation and Stakeholder Engagement

In developing this consultation draft CAAP, we are and will be working with other local authorities, agencies, businesses, the local community and South Gloucestershire Council members to improve local air quality. Schedule 11 of the Environment Act 1995 requires local authorities to consult the bodies listed in Table 4.1. In addition, we are undertaking the following stakeholder engagement:

- Information on South Gloucestershire Council website
- Information available at the public facing locations: Yate, Patchway, Kingswood and Thornbury One Stop Shop, and the twelve main libraries in South Gloucestershire

The response to our consultation stakeholder engagement will be provided in Appendix A when the results are available.

Table 4.1 – Consultation /To be Undertaken

Consultee	Consultation to be Undertaken
The Secretary of State	Yes
The Environment Agency	Yes
The Highways Authority	Yes
All neighbouring local authorities	Yes
Other public authorities as appropriate, such as Public Health organisations	Yes
Bodies representing local business interests and other organisations as appropriate	Yes

4.2 Steering Group

The issues of air pollution and climate change have been brought together under a Clean Air and Climate Change steering group. The steering group builds on the numerous work areas within South Gloucestershire Council in influencing air quality and environmental sustainability. The steering group is responsible for overseeing the development and implementation of the South Gloucestershire Clean Air Strategy and this Clean Air Action Plan and the South Gloucestershire Climate Emergency Action Plans. This work sits alongside work on the councils' statutory delivery requirements on air quality under the Local Air Quality Management (LAQM) framework.

Membership consists of nominated officers at a senior level from across the council, including Department for Place, Public Health and Wellbeing, Safe and Strong Communities, Strategic Planning and Housing, Transport and Strategic Projects, Environmental Health and Street Care and Transport. The Group is chaired by the Executive Director of Place and the Director of Public Health and Wellbeing. Additional specialist officers and visiting members are invited to meetings as deemed relevant by the core group. The group meet a minimum of four times a year, with additional meetings as necessary.

5. CAAP Measures

Table 5.1 shows the South Gloucestershire Council Clean Air Action Plan (CAAP) measures. It contains the name of the measure, a summary and further description to help the reader understand the reasoning behind the action and how it is envisioned to be implemented.

The fourth column gives information on a range of factors that have been considered to give an indication of the action's priority level. The priority level is given as a subjective summary in the fifth column. The considerations include:

- The reach of the action; whether action is designed to impact a large geographical area therefore delivering widespread improvements, whether it is designed to address a particular type of emission source that occurs fairly often across the district therefore delivering moderate reach, a localised action designed to address a specific locality.
- Anticipated effect on reducing NO_x and PM_{10} emissions and if there is the potential for a reduction in $PM_{2.5}$ emissions; this has been informed by Defra Technical Guidance (LAQM.TG16)[44] (which is informed by measured outcomes from actions implemented across the UK).
- Estimated cost of implementing the action; some actions are able to be carried out as part of existing work programmes, for many the primary cost is yet unallocated officer time. Other actions require capital investment.
- Timescales for implementation; whether they are anticipated to be delivered in one to two years therefore short timescales, up to around 10 years therefore medium timescales, or over 10 years therefore long timescales.
- Co-benefits; identifying anticipated benefits other than air quality improvements.

[44] UK Regions (exc. London) Technical Guidance | LAQM (defra.gov.uk) https://laqm.defra.gov.uk/air-quality/featured/uk-regions-exc-london-technical-guidance/

- Links to other actions in this CAAP; though all actions are important and designed to be delivered together to address the full range of sources identified and discussed, some actions have a clear connection and support other actions and therefore are considered important to the overall success of the plan.

The prioritisation is a subjective summary of these factors as either High, Medium or Low. The proposed ranking, given in the final column, will be finalised based on the results of the consultation process. The actions that are a high priority will form the basis for the upcoming work stream.

In Appendix C, Table C 1 more detailed information is given in line with what is required by Defra, such as the measure category and classification, organisations involved and potential barriers to implementation.

Table 5.1 – Clean Air Action Plan Measures

Measure No.	Measure	Measure Details	Efficacy Considerations	*Proposed* Priority Summary (H/M/L)
Emissions from New Development and Buildings				
1	**Adopt the 'Planning and Air Quality for South Gloucestershire Council' Guidance**	The guidance provides a framework for reducing emissions from new development and includes details of a potential mechanism to collect developer contributions to fund air pollution mitigation measures. The guidance is in the process of being completed. The guidance is designed to help developers determine what level of assessment is needed for new planning applications. It will help reduce emissions from new development and help developers quickly understand the assessment/mitigation requirements. Damage costs provide a mechanism to mitigate the incremental increases in air pollution from development. There is an element of administration that would be required to collect contributions and allocate them to relevant air pollution actions, however, this would generate income to be used to fund the measures outlined in the CAAP where this is required.	Large reach; improvements to air quality will be widespread rather than targeting specific emissions Low effect on NO_2 and PM_{10}. Potential to reduce $PM_{2.5}$ Low cost Short implementation timescale	High
2	**Update Local Plan Policy on Air Pollution**	There is a need for the Local Plan Policy to reflect the latest health evidence on air pollution and to reflect the need to reduce air pollution across South Gloucestershire rather than focussing on air quality management areas. Existing planning policy on air quality is contained in the Policies, Sites and Places Plan - Policy PSP 21 Environmental Pollution and Impacts. This policy was adopted in 2017. Work on a replacement Local Plan is underway and provides opportunity to review current policies subject to national planning guidance and evidence. The work would form part of the Local Plan review workstream	Large reach; improvements to air quality will be widespread rather than targeting specific emissions Low effect on NO_2 and PM_{10}. Potential to reduce $PM_{2.5}$ Low cost Short implementation timescale	High
3	**Review Parking SPD to Include Strong Policies to Encourage Active and Public Transport Use**	Increasing the use of active and public transport are essential to reduce emissions of pollutants that are harmful to health. Being able to effectively control the level of vehicle parking in new developments is one way of being able to reduce reliance on cars if alternatives are provided.	Medium reach; action will effect new developments and the active/public transport link areas they use. Low effect on NO_2 and PM_{10}. Potential to reduce $PM_{2.5}$ An increase in active transport has co-benefits to health and wellbeing, and climate change objectives	High

Measure No.	Measure	Measure Details	Efficacy Considerations	*Proposed* Priority Summary (H/M/L)
		A review of the Parking Supplementary Planning Document (SPD) is being planned once the Local Plan has been updated. Maximum parking levels rather than minimum parking levels for new development should be considered, in line with other WECA authorities. Vehicle and cycle parking standards are set in the Parking SPD. The many benefits that could be realised by SGC being able to issue parking permits needs to be considered in the parking review, as this is important to several actions in this plan. Transport Development Control Review of SPD is already planned.	Low cost Short implementation timescale Links to several actions	
4	**Reduce Emissions from Non-Road Mobile Machinery (NRMM)**	Non-Road Mobile Machinery (NRMM) includes equipment such as excavators, bulldozers and generators which are all extensively used on construction sites. In July 2021, Defra announced plans to involve LAs in an expansion of control on emissions from NRMM at construction sites. These controls are already being used in London and are being gradually tightened to reduce emissions as part of the Ultra-Low Emission Zone. Defra indicate that they intend to develop the standards and national register of NRMM by mid-2023. If appropriate, the regulations should be implemented in South Gloucestershire	Limited reach Medium effect on NO_2 and PM_{10} from specific sources. It has the potential to reduce $PM_{2.5}$ pollution. Cost dependant on scope of guidance Medium implementation timescale	Medium
Emissions from Transport				
5	**Raise Awareness of the Need to Reallocate Road Space to Active and Public Transport Modes**	To reduce pollution and emissions of CO_2, space for private cars needs to be reallocated to active and public transport modes. If this isn't done, evidence shows that there will be no reduction in vehicle numbers. National projections assume continued growth in vehicle numbers year on year with an assumed need to build new roads to accommodate this growth. This action is intended to create a political environment where the need to reallocate road space is understood and supported by decision makers and the public. There is a need to build an evidence base and to promote examples of where, how and when this has been implemented elsewhere to demonstrate its effectiveness at reducing harmful pollution and CO_2 emissions, improving health by increasing	Large reach; improvements to air quality will be widespread rather than targeting specific emissions Low effect on NO_2 and PM_{10}. Potential to reduce $PM_{2.5}$ An increase in active transport has co-benefits to health and wellbeing, and climate change objectives Low cost Short implementation timescale	High

Measure No.	Measure	Measure Details	Efficacy Considerations	*Proposed* Priority Summary (H/M/L)
		physical activity, creating better environments and boosting economic activity and local businesses.		
6	**Assess Air Pollution Impacts of Kingswood Masterplan and look to Maximise Air Pollution Improvement Potential of the Changes**	A Kingswood Masterplan is being developed which proposes to remove traffic from a section of the main high street. It will be important to assess the air pollution impacts of these changes. The redevelopment will offer other opportunities to reduce pollution and exposure to pollution if planned well. Cost dependant on the level of ambition and range of air pollution improvement but cost of the Masterplan is covered by the Government's Future High Streets Fund, WECA funding and SGC resource.	Local reach High effect NO_2 and PM_{10} from road traffic. It has the potential to reduce $PM_{2.5}$ pollution. An increase in active transport has co-benefits to health and wellbeing, and climate change objectives Short to Medium implementation timescale Cost uncertain Funding already allocated	High
7	**Consider Air Pollution in the Development of Masterplans in South Gloucestershire**	Work with the SGC Regeneration Team to help develop Masterplans that fully consider how to reduce pollution levels and public exposure to pollution. Cost dependant on the level of ambition and range of air pollution improvement. Cost of the development of the Masterplans are covered by WECA funding and SGC Resource. Any future projects coming out of the masterplans will need to have funding identified.	Reach and effect unclear at an early stage of masterplan process Short to medium implementation timescale Cost uncertain Funding already allocated	Medium
8	**Develop a Council Wide Travel Plan**	Development and implementation of a travel plan as a way of increasing the percentage of trips by active and public transport by council employees. Some incentive schemes have been put in place by HR and a return-to-work policy is currently being developed. At present there isn't a council wide travel plan. Covid and the new way of working is likely to impact on this action as there is uncertainty in how people will respond. Car share may be less popular and public transport may be seen as a risk for people for some time to come. Cost is dependent on incentives offered under travel plan but expected to be low	Limited reach Low effect on NO_2 and PM_{10} from traffic from SGC. It has the potential to reduce $PM_{2.5}$ pollution. An increase in active transport has co-benefits to health and wellbeing, and climate change objectives Short implementation timescale Low cost	Low

Measure No.	Measure	Measure Details	Efficacy Considerations	*Proposed* Priority Summary (H/M/L)
9	**Continue Bus Partnerships and Develop Enhanced Partnerships to Reduce Bus Emissions**	Bus partnerships assist bus operators to upgrade and retrofit their fleet to reduce their emissions. This is of particular importance for smaller bus operators who have less funding to be able to retrofit/upgrade their fleets. These companies often transport those who are the most vulnerable to air pollution, e.g. children to schools, so their emissions disproportionately impact on them. Implementation is potentially >£1m but would need to come from grants or an enhanced partnerships system if this comes with funding. SGC officer time needed to develop partnerships and grant bids.	High reach High effect on NO_2 and PM_{10} on multiple sources, including $PM_{2.5}$ Short implementation timescale High cost	High
10	**Support Subregional Collaboration that Could Lead to Public Transport Concessions**	Concessions can help public transport become a more affordable and attractive alternative to driving. It also helps with addressing inequalities by making public transport more affordable to all. Concessions are administered at a subregional level. Consideration should be given to introducing free or reduced public transport fares for families and younger people, including 16–18-year-olds. At 16-18 many people start to travel further to access education or work. This could reduce inequalities and help form positive habits that are continued into adulthood.	High reach Medium effect on NO_2 and PM_{10} via reduction in road traffic. It has the potential to reduce $PM_{2.5}$ pollution. Short to medium implementation timescale Cost is unknown and dependant on scale of intervention but would be considered in any business case developed. Co-benefit in reduction in inequalities	High
11	**Improvements to Lighting on Active Travel Infrastructure Between Bitton and Warmley**	The aim of this action is to improve the lighting, safety, and attractiveness of this section of the Bristol and Bath Railway Path for active travel modes in the darker winter months. Assessment of the impact of improved lighting on numbers using the route will be carried out. Safety and perception of safety, during dark mornings and evenings, is potentially an important factor when people decide whether to use active travel infrastructure. A project, that aims to quantify the impact of improving lighting on a section of active travel infrastructure, will provide evidence as to whether the investment in lighting leads to a significant increase in those using the infrastructure after dark.	Localised reach Low effect on NO_2 and PM_{10}. It has the potential to reduce $PM_{2.5}$ pollution. Short implementation timescale High cost Co-benefits of increasing active travel widely recognised.	Low

Measure No.	Measure	Measure Details	Efficacy Considerations	*Proposed* Priority Summary (H/M/L)
		Nitrogen dioxide pollution is significantly worse during the winter which makes it important to facilitate people to safely use active travel infrastructure during these darker months Planning cost relatively small but installation and maintenance costs could be significant.		
12	**Address Barriers to Active and Public Travel Through Communication Initiatives**	Increasing the percentage of journeys carried out by active travel modes is essential to improve air pollution and to reduce carbon emissions. The Climate Emergency Team have recently commissioned research by the UWE into barriers to active travel, with a focus on communications. The report is in progress, but conclusions suggest targeted corridors of visual promotion, which could be trialled relatively easily with a communication campaign and some survey work, would be effective in encouraging active travel. Communication of existing public and active travel options, of which people may be unaware, could be effective in assisting people to travel by these modes instead of defaulting to using a car when practical usable public or active travel option exists. This communications work can be tied to Action No 23 on communications on air pollution. Cost depends on scale and method of communication/engagement but likely to be low.	Large reach; improvements to air quality will be widespread rather than targeting specific emissions Low effect on NO_2 and PM_{10}. Potential to reduce $PM_{2.5}$ Low cost. Short implementation timescale An increase in active transport has co-benefits to health and wellbeing, and climate change objectives Links to multiple actions in the CAAP such as 11, Improvements to Lighting on Active Travel Infrastructure Between Bitton and Warmley, and 17-20 which aim to increase the active travel to and from schools.	High
13	**Identify Locations Where Speed Limits Could be Reduced**	A reduction in speed limits on roads leads to safer roads and creates a better environment for active travel modes. It reduces the number and severity of avoidable collisions. In the absence of an extensive network of safe segregated active travel routes this would help make roads and active travel safer and more attractive options. 20mph speed limits have been introduced outside most schools for the purpose of improving safety. There are many other locations in South Gloucestershire where 20mph speed limits are in place, however, currently they are generally introduced where residents request them and demonstrate support. Engagement with public and council members is required. There are opportunities to review other speed limits to improve safety, e.g. 40mph reduced to 30mph.	Reach will be dependent on extent of road identified Low effect on NO_2 and PM_{10} from a large number of sources contributing to poor air quality. It has the potential to reduce $PM_{2.5}$ pollution. Short to medium implementation timescale Cost will depend on scope of changes Co-benefits of increasing active travel, safer roads, climate change.	Medium

Measure No.	Measure	Measure Details	Efficacy Considerations	*Proposed* Priority Summary (H/M/L)
		The focused of this work/trial could be those locations close to the Kingswood and Staple Hill AQMAs where 20mph limits are already in place on some roads. Locations for speed limit reductions (e.g. 40mp to 30mph) should be identified and reviewed with a view to encouraging active transport by improving safety. This is especially important if segregated active travel infrastructure does not exist in a particular location. Assessment phase cost low. Cost of implementation depends on scale of changes and whether traffic calming is required but potentially significant for detailed development of schemes and their implementation(Grant/WECA Funding available)		
14	**Develop Concept of and Implement Urban Lifestyle Areas**	Urban lifestyle areas are high density, mixed use, low car parking development in locations with access to amenities and active/public transport links. The concept being developed by SGC is to optimise sites with higher densities and reduced parking standards for new developments where they are close to town centres, high streets, and public transport nodes. Liveability is a key element, and this is encouraging walking, cycling and public transport use. Enhanced public open spaces, minimum private amenity space standards for all homes, and variable parking standards are the key features. Mixed use development is also being considered in these locations. It is planned for these changes to policy to be delivered through the Local Plan review. Application of this concept is being considered in 15 areas in South Gloucestershire, divided into 3 overall areas, including the Bristol North Fringe Communities, the Bristol East Fringe Communities, and the Market Towns (Yate, Thornbury and Chipping Sodbury). Limited cost implications as this is a concept to be applied for new development through the planning process. Some funding has been allocated from WECA.	Moderately widespread action Low effect on NO_2 and PM_{10}. Potential to reduce $PM_{2.5}$ Short to Long implementation timescale Low cost Many possible co-benefits such as improvement in community cohesion and the health benefits of active travel.	Medium/ High
15	**Development of Mobility Hubs**	Mobility hubs can help to extend the reach of public transport infrastructure and provide solutions to allow quick and easy access to active travel options to link journeys that use a variety of transport options Trials currently under way in the WECA area. There is potential for major new development locations to be developed without these hubs which would then	Moderately widespread action Low effect on NO_2 and PM_{10}. Potential to reduce $PM_{2.5}$ Medium to long implementation timescale Low cost	Medium/ High

Measure No.	Measure	Measure Details	Efficacy Considerations	*Proposed* Priority Summary (H/M/L)
		require more expensive post development changes to incorporate them. Mobility hubs should be incorporated into the design of major new development. SGC will work with WECA on a number of projects for micro-mobility & shared transport solutions as part of the Future Transport Zone programme (completion expected Spring 2024) Initial trial is Funded WECA. Costs dependent upon scale of hub roll out. Further application at minimal cost if developer contributions can be secured to develop hubs.	An increase in active transport has co-benefits to health and wellbeing, and climate change objectives	
16	**Adopt the latest standards for active travel Infrastructure**	In order to maximise the uptake of active travel, the safety and usability of this infrastructure needs to be improved across South Gloucestershire. All new infrastructure will be built to this standard and where existing routes do not comply with the latest standards, opportunities to upgrade them should be investigated. The latest national standards, LTN1/20, sets standards which ensure new infrastructure is safe and fit for purpose. New national standards have been introduced for active travel infrastructure - LTN 1/20 Cycle Design Guidance/Gear Change Principles. There is a need for SGC to formally adopt these as a requirement to ensure all new infrastructure meets the highest standards possible. The SGC Cycle Strategy shows existing, planned and desired strategic cycle routes. This includes many routes that do not comply with the latest standards. As an example, the rural route between Wickwar and Chipping Sodbury is shown as 'existing' but is twice the length of the direct road route and takes users on country lanes. It is unappealing as an alternative to car trips given the additional distance (8-9 miles rather than 3-4 miles) for the main road route. This does not meet LTN 1/20 standards and arguably should not be listed as existing and viable cycle route.	Moderate reach; improvements across SGC but limited to cycle routes. Low effect on NO_2 and PM_{10}. Potential to reduce $PM_{2.5}$ Short implementation timescale Low cost. An increase in active transport has co-benefits to health and wellbeing, and climate change objectives	Medium
17	**Increase the Number of Schools Accredited to Modeshift STARS Scheme**	Modeshift STARS is a scheme, supported by the Department for Transport that assists and recognises best practice in sustainable school travel through the delivery of travel plans. It is important to facilitate and encourage the use of sustainable transport modes to travel to school which will reduce air pollution and carbon emissions and improve health.	Moderate reach; improvements across SGC but limited to schools in programme. Low effect on NO_2 and PM_{10}. Potential to reduce $PM_{2.5}$ Short implementation timescale then ongoing Moderate cost.	Medium

Measure No.	Measure	Measure Details	Efficacy Considerations	*Proposed* Priority Summary (H/M/L)
		This work also ties into the Public Health 'Health in Schools' Programme which is currently under review. Currently only committed schools are taking this scheme up. There is a need to have a significant incentive to encourage schools to take part, as well as some form of mandatory requirement for schools to have a minimum of bronze accreditation. Current staff cost <£60k p.a. this may need to increase if there is a large increase in uptake of active travel at schools. Some resource implications for schools. The Sustainable Transport Team will need resources to support schools in gaining accreditation, however there would also be a financial cost to providing the cash incentives to schools.	An increase in active transport has co-benefits to health and wellbeing, and climate change objectives	
18	**Actively Promote and Introduce School Streets at Suitable School Locations.**	A School Street is where a road outside a school has a temporary restriction on motorised traffic at school drop-off and pick-up times. The restriction applies to school traffic and through traffic. The result is a safer, healthier, and more pleasant environment for everyone. School Street schemes offer a proactive solution for school communities to tackle air pollution, poor health, and road danger reduction. A School Street scheme will encourage a healthier lifestyle and active travel to school for families and lead to a better environment for everyone. Recent evidence of their impact on air pollution can be found here: https://www.aqconsultants.co.uk/case-studies/school-streets Schools Streets are currently being trialled at 4 schools in South Gloucestershire. There is a need to ensure the trials are working well. There are currently resource issues for implementation of the required infrastructure due to demands on Highways Team resource with implementation being delayed. The costs to implement school streets include setting up the experimental traffic regulation order, consultation, cost of infrastructure and a need for resident's permit. The schools need to have the correct insurance and have staff available and willing to operate the closure.	Moderate reach; improvements across SGC but limited to schools in programme Low effect on NO_2 and PM_{10}. Potential to reduce $PM_{2.5}$ Short implementation timescale then ongoing Moderate cost. An increase in active transport has co-benefits to health and wellbeing, and climate change objectives	Medium
19	**Support Schools to Introduce Park and Stride Sites**	The aim of a park and stride site is to improve road safety, reduce traffic congestion and improve air quality near school entrances. It does this by providing a place to	Moderate reach; improvements across SGC but limited to schools in programme	Medium

Measure No.	Measure	Measure Details	Efficacy Considerations	*Proposed* Priority Summary (H/M/L)
		park, away from the school site, from which parents and their children being able to walk the final part of the journey to school, reducing the number of cars around the school entrance. Some park and stride sites are currently in operation in South Gloucestershire. There is a need for schools to be supported to introduce park and stride sites. South Gloucestershire Council can assist schools in negotiations with external organisations to allow their car parks to be used for this purpose and to develop the required MoU. External organisations need public liability insurance for their car parks to be used for this purpose and some funding for signage would be beneficial.	Low effect on NO_2 and PM_{10}. Potential to reduce $PM_{2.5}$ Short implementation timescale then ongoing Moderate cost. An increase in active transport has co-benefits to health and wellbeing, and climate change objectives	
20	**Continue to Offer Cycle Training to Schools**	Cycle training is essential to increase the confidence and safety of those who want to make journeys by bike. This is even more important given the current lack of fully segregated cycling infrastructure across the region. Bikeability training is currently offered to all schools free of charge for children up to 15 years old. Bikeability training is currently funded by a grant from the DfT. Future funding is uncertain.	Moderate reach; improvements across SGC but limited to schools in programme Low effect on NO_2 and PM_{10}. Potential to reduce $PM_{2.5}$ Short implementation timescale then ongoing Moderate cost An increase in active transport has co-benefits to health and wellbeing, and climate change objectives	Medium
21	**Provide Resource to Plan and Install EV Charging Infrastructure**	It is estimated that by 2030 SGC will need to install an additional 500 EV Charge Points to meet demand in those locations where commercial operators will not provide them. Whilst EV's still emit particulate matter from tyre, brake and road wear and resuspension of dust, they are better than internal combustion vehicles for local air pollution and are the preferred option for those journeys that still have to be taken by car. An EV Strategy has been developed by South Gloucestershire Council and will be adopted following the consultation process. Resource is needed to both strategically plan the required network and to make arrangements to physically install infrastructure in the ground. Exact levels of	Widespread reach High effect on NO_2 and PM_{10}. Short implementation timescale then ongoing Cost uncertain	High

Measure No.	Measure	Measure Details	Efficacy Considerations	*Proposed* Priority Summary (H/M/L)
		resource are unclear. WECA/Government Grant funding may be available for some works.		
Communications and Awareness Raising				
22	**Develop an Air Pollution Communication Plan**	The sources of air pollution and the impact it is having on health can be difficult to understand. A communication plan can assist with this understanding, empowering people to reduce both their exposure and contribution to air pollution. A better understanding of the sources and health impacts should also increase public support for the actions needed to reduce pollution. Information based approaches can be complimented by thinking creatively about air pollution communication by using approaches that promote the co-benefits, seek to activate social norms, connect with peoples' emotions and empower collective responsibility. An annual communications plan will be developed to tie in with seasonal variations in terms of pollution sources and national awareness raising campaigns. An update of the SGC website on air pollution will also be considered to engage citizens on air pollution. The communications work will be tied in with climate change comms to share resource and to explain how measures to reduce carbon dioxide emissions can have immediate local air pollution benefits that improve public health. As well as communication on pollution from vehicles, awareness raising of the impacts the solid fuel use has on air pollution, both indoors and outside, will be included. Sources of emissions from solid fuel use include burning on open fires, solid fuel stoves, bonfires and firepits.	Widespread reach Low effect on NO_2 and PM_{10}. Potential to reduce $PM_{2.5}$ Short implementation timescale then ongoing Low cost Important action with links to multiple actions within the CAAP such as 12: Address Barriers to Active and Public Travel Through Communication Initiatives, 18: Actively Promote and Introduce School Streets at Suitable School Locations, and 27: Domestic Solid Fuel Awareness Raising Campaign	High
23	**Raise Awareness of Air Pollution Impacts Amongst Health Professionals**	Health professionals do not always understand or make links to air pollution and health conditions. Damp homes are more likely to be linked to health problems than air pollution, however, evidence shows that using an open fire or a solid fuel stove regularly can have both chronic and acute health impacts but are unlikely to be considered as a risk factor in a patient. Whilst there is a need to address this at a national level, SGC has an opportunity to consider how engagement at a local level could raise awareness of the impacts of	Widespread reach Low effect on NO_2 and PM_{10}. Potential to reduce $PM_{2.5}$ Short implementation timescale then ongoing Low cost	High

Measure No.	Measure	Measure Details	Efficacy Considerations	*Proposed* Priority Summary (H/M/L)
		air pollution on health, particularly on those people with pre-existing cardiorespiratory conditions.		
24	**Collect and Share Case Studies of Good Practice from Businesses That Have Worked to Reduce Pollution Emissions**	Examples of good practice in reducing pollution emissions, and the benefits they bring, can be powerful in engaging other business to do the same. There are several existing business networks, an external facing website and regular mailing lists. North Bristol SusCom is specifically focussed on improving use of sustainable travel modes in the region. North Bristol SusCom have been in existence for 12 years and was started due to businesses being frustrated with the impact of congestion whilst recognising that their employees were contributing to the congestion.	Widespread reach Low effect on NO_2 and PM_{10}. Potential to reduce $PM_{2.5}$ Short implementation timescale then ongoing Low cost	High
Emissions from Solid Fuel/Solid Waste Disposal				
25	**Expand Smoke Control Area**	Within smoke control areas there are restrictions on the types of fuels and appliances that can be used to burn solid fuels. The current smoke control areas in South Gloucestershire are in need of updating as they don't reflect current usage patterns or reflect the latest health evidence for particulate matter pollution. The Air Quality (Domestic Solid Fuels Standards) (England) Regulations 2020 have made changes to the types of fuel that are allowed to be sold. This will make the fuels the can be purchased burn cleaner but there will still be some benefit from expanding the Smoke Control Area if people follow the rules. Burning of wood on an open fire is not permitted in a smoke control area. Whilst enforcement of smoke control areas is difficult, the expansion of the area will provide an opportunity to raise awareness of the health problems caused by solid fuel use.	Moderate reach Likely to have a positive effect on PM_{10} and $PM_{2.5}$ emissions Short implementation timescale then ongoing Low cost	Medium
26	**Domestic Solid Fuel Awareness Raising Campaign**	In the UK domestic combustion accounts for an estimated 25% of all primary $PM_{2.5}$ emissions, with 70% of this coming from burning wood in stoves and open fires (Defra 2022) Indoor air pollution is also impacted by emissions from stoves and open fires. The scale and impact of pollution from this source is poorly understood by many. Solid fuel stoves are becoming increasingly more fashionable and desirable objects to aspire to with an estimated 200,000 being sold in the UK per annum. New stoves	Widespread reach Likely to have a positive effect on PM_{10} and $PM_{2.5}$ emissions Short implementation timescale then ongoing Low cost	High

Measure No.	Measure	Measure Details	Efficacy Considerations	*Proposed* Priority Summary (H/M/L)
		are currently marketed as being good for climate change and air pollution (using a 'ClearSkies' label) which is potentially misleading some consumers. This action is required to increase awareness of the health issues associated with domestic solid fuel burning and to allow people to make informed purchase and lifestyle decisions A communications campaign will be developed, which will form part of the wider air quality communications Action No 24, however, this has been included as a separate action due to the importance of the issue to air pollution and public health.		
27	**Lobby Govt to Review D7 Waste Exemptions: Burning Waste in the Open**	D7 Waste Exemptions are issued by the Environment Agency and allows businesses to burn plant tissue, sawdust, shavings and cuttings from untreated wood and waste bark and wood. Up to 10 tonnes of waste can be burnt in the open in any 24-hour period. . This saves on cost of waste disposal but externalise these costs by impacting on public health. Given the increased evidence showing how damaging particulate matter pollution is to health, this policy is in need of review	Widespread reach Will impact PM_{10} and $PM_{2.5}$ emissions Short implementation timescale then ongoing Low cost Co-benefits in respect of climate change	High
Council Policy and Measures				
28	**Review and Update SGC Plans and Strategies to Reflect Latest Air Pollution Evidence and Public Health Impacts**	A number of plans and strategies relevant to air pollution are referred to in the Clean Air Strategy. As and when these policies are reviewed, consideration of how they can be updated, to facilitate improvements in air pollution, should be made. Plans referred to in the Air Quality Strategy include: Cycle Strategy, Housing Strategy, Physical Activity Strategy, Biodiversity Action Plan, Healthy Weight and Obesity Strategy, Joint Health and Wellbeing Strategy, Sustainable community Strategy, Food Plan, and Local Plan - PSP21	Large reach; improvements to air quality will be widespread rather than targeting specific emissions Low effect on NO_2 and PM_{10}. Potential to reduce $PM_{2.5}$ Low cost Short implementation timescale Multiple possible co-benefits Links to other actions in this CAAP	High

Measure No.	Measure	Measure Details	Efficacy Considerations	*Proposed* Priority Summary (H/M/L)
		These all have a role to play in facilitating improvements in air pollution.		
29	**Review of Taxi Licensing Conditions to Improve Emission Standards When Review Takes Place in 2022/23**	There is a need to ensure that both emissions of pollutants harmful to health and climate change gas emissions are considered when reviewing these standards. Whilst generally lower CO_2 emissions will mean lower emissions of pollutants that are harmful to health, in the case of vehicle emissions this is not necessarily the case. A 2021 revision to conditions has taken place. New applications must meet Euro 6 for Diesels and Euro 4 for Petrol engines, in line with national CAZ structure. The Hackney carriage and Private Hire Policy review in July 2023 proposes to introduce further requirements for low emission vehicles, however, it will continue to consult in relation to direction of travel.	Medium reach Medium effect on NO_2 and PM_{10} from traffic, potential to reduce $PM_{2.5}$ pollution. Low cost. Short implementation timescale Links to Action 21	High
30	**Implement Urban Design Practices to Reduce Exposure to Pollution**	Urban realm can be designed in a way that reduces exposure to the pollution emitted from vehicles, and as a result, reduce the impact that it has on public health. Features such as maximising the distance between footpaths, cycle routes, houses etc. from vehicle generated pollution can significantly reduce exposure to air pollution. Even an increase of 1m in distance from a busy roadside can see pollution levels reduced. Green planting, car parking/bus lanes etc. can act as effective barriers to pollution and increase distance to the main carriageways and should be considered when designing new urban realm. At the local urban scale trees and other green infrastructure do not effectively absorb pollution, however, trees and other green infrastructure can act as effective barriers to pollution and create pleasant safe walking and cycling routes. For climate change it has added benefit of assisting with adaptation, i.e. reduced urban temperatures in summer.	Large reach; improvements to air quality will be widespread rather than targeting specific emissions Low effect on NO_2 and PM_{10} from a large number of sources contributing to poor air quality. It has the potential to reduce $PM_{2.5}$ pollution. Low cost Short implementation timescale	High

Appendix A: Response to Consultation

Table A 1 Summary of Responses to Consultation and Stakeholder Engagement on the AQAP

Note: This will be completed post consultation.

Consultee	Category	Response

Appendix B: Reasons for Not Pursuing Action Plan Measures

Table B 1 Action Plan Measures Not Pursued and the Reasons for that Decision

Action category	Action description	Reason action is not being pursued (including Stakeholder views)
Promoting Travel Alternatives	Update and implement travel plans for Kingswood and Staple Hill Town Centres (AQMAs) to encourage more sustainable travel	Not taken forward as other active and public transport actions within the Clean Air Action Plan are considered a more effective way of addressing the need to switch to sustainable transport modes. This is considered more beneficial than focussing resources on the limited areas covered by the AQMAs
Traffic Management	Review traffic signal numbers and operations in Kingswood and Staple Hill AQMA areas. Implementation dependent on securing funding Consider co-ordinating traffic lights to pulse traffic and complete removal where signals no longer required	This work has been done in the Staple Hill AQMA and the masterplan work and proposed pedestrianisation in Kingswood supersedes this action
Promoting Travel Alternatives	Encourage bus use in AQMAs with discounted tickets	Focussing this action on the AQMAs misses the bigger picture and health issues associated with air quality. South Gloucestershire wide bus concessions are included as an action to be taken forward in the Clean Air Action Plan.
	Improve real time bus information within the AQMAs	This work has already been done.
Transport Planning and Infrastructure	Controlled deliveries/ collections in Kingswood AQMA.	The plans to pedestrianise Kingswood Town Centre will mean this isn't necessary as a standalone action and will be considered as part of the Kingswood Masterplan work.

Action category	Action description	Reason action is not being pursued (including Stakeholder views)
Freight and Delivery Management	Investigate feasibility for freight consolidation centre for Kingswood and Staple Hill AQMAs and nearby areas.	This action needs to be wider in scope than just AQMAs. The development of freight consolidation centres in South Gloucestershire is being led by the West of England combined Authority (WECA) and so SGC only has a support role.
Vehicle Fleet Efficiency	Eco driving training through use of tracking technology	Evidence has shown that this is ineffective in reducing NOx emissions from vehicles.
Public Information	Air quality information to house buyers	It is not possible to give accurate and detailed information for all properties in the South Gloucestershire area. SGC air quality monitoring data is carried out at specific locations as defined by the LAQM regime and therefore only provides detailed information for a small proportion of house in the area. The national data available will not provide accurate information on a house-by-house basis and will not inform about solid fuel exposure e.g. how many open fires and wood burners have been installed in the area. It is considered better that general awareness raising about air pollution is used rather than poor estimates of air pollution. SGC will continue to publicise the monitoring data that is collected as part of this awareness raising work.
Traffic Management	Investigate the feasibility of a Clean Air Zone (CAZ) or similar scheme to restrict access to Kingswood and Staple Hill AQMA areas	A CAZ isn't appropriate for South Gloucestershire given the limited scale of exceedance of pollution objectives. It will take considerable time to develop and approve a CAZ, in which time vehicles will be cleaner. The Clean Air Action Plan focusses more widely at reducing pollution across South Gloucestershire beyond basic compliance with air pollution objectives.
Alternatives to private vehicle use	Improve car share support within the council	The current Covid situation makes this problematic and less relevant with home working. This action could be incorporated into other actions if considered appropriate at a later time.
Promoting Low Emission Plant	Undertake renewable energy audit	This has been done already and this action sits better with Climate Change Actions that have already been developed. The Clean Air and Climate Change steering group will continue to ensure air pollution benefits are maximised.

Action category	Action description	Reason action is not being pursued (including Stakeholder views)
Policy Guidance and Development Control	Adopt a stance of no worse than negligible (EPUK/IAQM impact descriptor) for new development	Considered better to influence minimum parking standards, contributions to active and public transport through strong policy to minimise increases in pollution from new developments
Other	Improve energy efficiency of council housing stock	This sits better with Climate Change activity already taking place
Promoting Low Emission Plant	Develop local heat networks. Opportunity to work with BCC to take waste heat from Avonmouth	Although this will potentially have significant air pollution benefits it is considered that this action is mainly going to be driven by Climate Change actions. The Clean Air and Climate Change working group will allow this activity to be developed to maximise air pollution benefits.
Other	Baseline activity data collection to improve understanding of scale of impact of NRMM on emissions.	Collecting baseline data doesn't lead to action and this will be a very difficult activity to do, taking a lot of time for data that will be uncertain. Defra are in the process of looking into ways to reduce emissions from NRMM at a national scale. It is considered better to wait for the Defra findings and framework to then consider how it can be applied in South Gloucestershire
Policy Guidance and Development Control	Adoption of Supplementary planning guidance for the control of dust and emissions from construction and demolition in South Gloucestershire	Control of emissions of dust from construction and demolition form part of the South Gloucestershire Planning and Air Quality Guidance and so this action is covered under this guidance document and action with the Clean Air Action Plan.
Policy Guidance and Development Control	No sensitive development within 300m of a motorway or major road. This would include schools, hospitals, EPHs	This is an approach used in The Netherlands. It is considered that given the planning framework that we have nationally that this will be considered acceptable or be able to withstand challenge by developers. Air pollution is considered in the planning process, but it won't be possible to impose these rigid restrictions
Promoting Low Emission Plant	Develop feasibility study for community heating scheme (retrofit community heat network)	This action is better placed as something that forms part of the climate change work at SGC

Action category	Action description	Reason action is not being pursued (including Stakeholder views)
Promoting Low Emission Plant	Initiatives for replacement of gas boilers. Support businesses (including community buildings) to replace boilers with cleaner alternatives	Whilst there are air pollution benefits, this work is best led by the climate change team. Air pollution needs to be considered to ensure alternative heat sources do not lead toa worsening of air pollution levels. The Clean Air and Climate Change Working Group will ensure air pollution and climate change are considered together.
Other	Retrofit existing properties to reduce energy demand for heating	This work is being led by the Climate Change team. Clean air input can take place where relevant.
Public Information	Develop a communications plan with simple messaging to support businesses in reducing air pollution and climate emissions	This work is already being done for climate change and so consideration of air pollution is already being made and input into the process without the need for this action
Promoting Low Emission Transport	Set higher euro standards for council transport	Work on standards for council transport is being led by the Climate Change Team and air pollution input is best through this route rather than additional action
Public Information	Investigate reclassification of strategic routes to reduce through traffic	It is considered that traffic reductions are needed as a priority rather than a focus on redistribution and so this action has not been progressed
Public Information	Smarter travel choices promotions/ roadshows	This type of action is covered by other actions in the Clean Air Action Plan
Policy Guidance and Development Control	Adopt standard of AQ neutral for new developments.	This is covered by the action to complete and adopt the Draft 'Planning and Air Quality for South Gloucestershire' guidance document
Alternatives to private vehicle use	Install Car Club Spaces Across South Gloucestershire	Consideration of car club spaces will form part of the parking review.

Action category	Action description	Reason action is not being pursued (including Stakeholder views)
Promoting Travel Alternatives	Develop/Encourage Cycle and Scooter Hire Schemes	These are currently led by commercial operators and so there is limited scope for SGC to introduce them. The other actions and policies within the plan mean that these schemes will naturally be supported by SGC as they are integral to achieving model shift and creating multi modal hubs
Promoting Low Emission Transport	Maximise Pollution Reduction from New Waste Vehicle Fleet in 2025	This is an important action but not something that needs immediate consideration and can be addressed as the plan is reviewed over time.
Promoting Low Emission Transport	Carry Out Feasibility of Electric Home to School Buses and School Minibuses to Electric	Not carried forward as an action as it is already being considered as technology evolves.
Public Information	Update the Joint Strategic Needs Assessment to Reflect Latest Air Pollution Evidence	This is already being done and so an action is not required to reflect what is already happening.
Other	Investigate Feasibility of Banning New Solid Fuel Appliance Installations in new Developments	Whilst it is considered important to end the use of solid fuel as a “nice to have” lifestyle choice, a ban for this type of use is unlikely to be possible. Communications and awareness raising need to be done first before this could be considered.
Other	Consider the Need and Identify Opportunities to Expand Monitoring of Particulate Matter Pollution	Monitoring might be useful and needed if Govt set new objectives for $PM_{2.5}$. As a result, this action has not been included but it is envisaged that a revised Local Air Quality Management Regime will provide Local Authorities Guidance on future monitoring requirements.
Other	Investigate Feasibility of Taking Action on Illegal Burning of Wastes at Business Premises	Enforcement is seen as a last resort. Action on dark smoke is already seen as a priority. Better to incorporate into comms so business know what is allowed and the public know what they should be reporting.
Policy Guidance and Development Control	Develop SGC specific air pollution targets	Environment Act 2021 commits to revising UK limits. There is a need to wait for the outcome of this due in late 2022 and then review whether this is necessary.

Action category	Action description	Reason action is not being pursued (including Stakeholder views)
Promoting Low Emission Plant	Reduce Event, Catering and Ice Cream Van Emissions/Impact	Prioritised resource to other areas/actions. It can be considered in future iterations of the CAAP
Transport Planning and Infrastructure	Continue to identify where bus priority and new routes are needed	This is something that is happening and there is limited scope for the plan to influence this work through an individual action. Reflecting and accounting for air pollution in strategies and policies is likely to be more effective.
Transport Planning and Infrastructure	Review cycle parking provision in South Gloucestershire and identify areas or the installation of highly visible cycle parking infrastructure.	This is being considered in the Parking SPD review.
Policy Guidance and Development Control	Update SGC Procurement Policy to Consider Air Pollution	It is considered that it is better to tie into the ongoing climate change work with procurement rather than have a separate conversation related to air pollution.
Promoting Travel Alternatives	Continue to Provide Cycle Training and Low Cost/Loan Bikes to Adults	Previous funding is coming to an end and there is limited scope for renewing; the funding would cover around 35 adults through the training therefore impact would be limited.
Policy Guidance and Development Control	Review School Place Allocation System	Action thought to be unfeasible due to requirements of the admissions code. Sustainable travel is already promoted within the allocation system.

Appendix C: Clean Air Action Plan Measures

Table C 1 shows the South Gloucestershire Council CAAP measures. For clarity, this table repeats the measures summarised in Table 5.1 above but includes extra columns of information for more depth and to meet Defra reporting requirements. It contains:

- a list of the actions that form part of the plan
- the responsible teams/departments/organisations who will deliver this action
- estimated cost of implementing each action
- expected benefit in terms of pollutant emissions and/or concentration reduction
- the timescale for implementation
- how progress will be monitored

Table C 1 Detailed information on Clean Air Action Plan Measures

Measure No.	Measure	Category	Classification	Estimated Year Measure to be Introduced	Estimated / Actual Completion Year	Organisations Involved	Funding Source	Defra AQ Grant Funding	Funding Status	Estimated Cost of Measure	Measure Status	Target Reduction in Pollutant / Emission from Measure	Key Performance Indicator	Progress to Date	Comments / Potential Barriers to Implementation
1.	Adopt the 'Planning and Air Quality for South Gloucestershire Council' Guidance	Policy Guidance and Development Control	Air Quality Planning and Policy Guidance	2023	2024	South Gloucestershire Council : Strategic Planning and Policy Team and Environmental Protection Team	Unknown	No	Not funded	<£10k	Planning	No specific target emission reduction	No specific KPI	Document drafted, formal adoption needed	Resource is required for administration but will create revenue that can be used to fund other actions
2.	Update Local Plan Policy on Air Pollution	Policy Guidance and Development Control	Other policy	2023	2023	South Gloucestershire Council : Strategic Planning and Policy Team and Environmental Protection Team	Existing officer time	No	Funded	<£10k	Planning	No specific target emission reduction	No specific KPI	Document drafted, formal adoption needed	Funding and resource would be required to implement measure

Measure No.	Measure	Category	Classification	Estimated Year Measure to be Introduced	Estimated / Actual Completion Year	Organisations Involved	Funding Source	Defra AQ Grant Funding	Funding Status	Estimated Cost of Measure	Measure Status	Target Reduction in Pollutant / Emission from Measure	Key Performance Indicator	Progress to Date	Comments / Potential Barriers to Implementation
3.	Review Parking SPD to Include Strong Policies to Encourage Active and Public Transport Use	Policy Guidance and Development Control	Other policy	2023	2023	South Gloucestershire Council : Strategic Planning and Policy Team and Environmental Protection Team	Unknown	No	Not funded	<£10k	Planning	No specific target emission reduction	No specific KPI	Review has not yet commenced	Funding and resource would be required to implement measure
4.	Reduce Emissions from Non-Road Mobile Machinery (NRMM)	Other	Other	2023	2025	South Gloucestershire Council : Environmental Protection Team in consultation with Strategic Planning and Policy Team	Unknown	No	Not funded	<£10k	Planning	No specific target emission reduction	No specific KPI	Review has not yet commenced	Funding and resource would be required to implement measure
5.	Raise Awareness of the Need to Reallocate Road Space to Active and Public Transport Modes	Policy Guidance and Development Control /Transport Planning and Infrastructure	Other	2022	Onwards	South Gloucestershire Council Environmental Protection Team, Climate Change Team and Strategic Communications Team (via public health channels)	Officer time	No	Action not separately funded	<£10k	Planning	No specific target emission reduction	No specific KPI	Ongoing	Multiple masterplans are being progressed and consultations present opportunity to raise awareness.
6.	Assess Air Pollution Impacts of Kingswood Masterplan and look to Maximise Air	Transport Planning and Infrastructure	Other	2022	2026	South Gloucestershire Council: Strategic Planning and Partnership Team with input from Environmental Protection Team	Kingswood Masterplan from Govts. Future High	No	Fully funded	£10k-£50k	Planning	No specific target emission reduction	No specific KPI	Planning	Masterplan is being progressed and consultation presents opportunity to raise awareness.

Measure No.	Measure	Category	Classification	Estimated Year Measure to be Introduced	Estimated / Actual Completion Year	Organisations Involved	Funding Source	Defra AQ Grant Funding	Funding Status	Estimated Cost of Measure	Measure Status	Target Reduction in Pollutant / Emission from Measure	Key Performance Indicator	Progress to Date	Comments / Potential Barriers to Implementation
	Pollution Improvement Potential of the Changes						Streets Fund, WECA funding and SGC resource.								
7.	Consider Air Pollution in the Development of Masterplans in South Gloucestershire	Policy Guidance and Development Control /Transport Planning and Infrastructure	Other	2022	Ongoing	South Gloucestershire Council: Strategic Planning and Partnership Team with input from Environmental Protection Team	Officer time	No	Action not separately funded	<£10k	Planning	No specific target emission reduction	No specific KPI	Ongoing	Multiple masterplans are being progressed and consultations present opportunity to raise awareness.
8	Develop a Council Wide Travel Plan	Promoting Travel Alternatives	Workplace Travel Planning	2023	2025	South Gloucestershire Council : Transport Policy or Property Services	Officer time	No	Not funded	£500k - £1 million	Planning	No specific target emission reduction	Fewer single driver vehicle journeys	Ongoing	Uncertainty around extent that staff travel for work following Covid-19 pandemic
9.	Support the development of the Enhanced Partnerships to improve vehicle emissions	Vehicle Fleet Efficiency	Promoting Low Emission Public Transport	2022/23	2022/23	West of England Combined Authority in partnership with bus operators and local Highway Authorities	Bus Service Improvement Plan	No	TBC	BSIP £50k towards detailed plan for transition to zero emission vehicles by 2030	Implementation	Progression to zero emission vehicles by 2030	Number of buses replaced for lower emission vehicles	Ongoing	In April 2022 WECA were awarded £105k to commence delivery of the BSIP, the 2nd highest in the Country and 10% of the national total. The funding will be used for a range of public transport improvements including £50k to develop a transition plan to zero emissions by 2030 for the region.
10.	Support Subregional Collaboration that Could	Promoting Travel Alternatives	Other	2023	2025	South Gloucestershire Council in partnership with bus operators and	Unknown	No	Not funded	£50k-100k	Planning	No specific target emission reduction	Increased public transport usage	Not commenced	Funding and resource would be required to implement measure

Measure No.	Measure	Category	Classification	Estimated Year Measure to be Introduced	Estimated / Actual Completion Year	Organisations Involved	Funding Source	Defra AQ Grant Funding	Funding Status	Estimated Cost of Measure	Measure Status	Target Reduction in Pollutant / Emission from Measure	Key Performance Indicator	Progress to Date	Comments / Potential Barriers to Implementation
	Lead to Public Transport Concessions					neighbouring local authorities									
11.	Improvements to Lighting on Active Travel Infrastructure Between Bitton and Warmley	Transport Planning and Infrastructure	Cycle network	2023	2026	South Gloucestershire Council: Transport and Environmental Policy	Unknown	No	Not funded	£10k-£50k	Planning	No specific target emission reduction	A greater number of active travel journeys, particularly at night and in the winter.	Not commenced	Funding and resource would be required to implement measure
12	Address Barriers to Active and Public Travel Through Communication Initiatives	Public Information	Other	2023	2024	South Gloucestershire Council: Climate Emergency Team with support from Environmental Protection and Transport and Environmental Policy	Unknown	No	Not funded	£10k-£50k	Planning	No specific target emission reduction	No specific KPI	Not commenced	Funding and resource would be required to implement measure
13.	Identify Locations Where Speed Limits Could be Reduced	Transport Planning and Infrastructure	Other	2023	2026	South Gloucestershire Council; Policy Team and Engineering Team	Unknown	No	Partially funded	£10k-£50k	Planning	No specific target emission reduction	No specific KPI	Not commenced	Could be introduced alongside public information campaign to maximise positive reception and compliance
14.	Develop Concept of and Implement Urban	Policy Guidance and Development Control	Other policy	Commenced	Ongoing	South Gloucestershire Council : Strategic Planning Policy Team	Officer time	No	Action not separately funded	<£10k	Planning	No specific target emission reduction	No specific KPI	Ongoing	Multiple masterplans are being progressed and consultations present opportunity to raise awareness.

Measure No.	Measure	Category	Classification	Estimated Year Measure to be Introduced	Estimated / Actual Completion Year	Organisations Involved	Funding Source	Defra AQ Grant Funding	Funding Status	Estimated Cost of Measure	Measure Status	Target Reduction in Pollutant / Emission from Measure	Key Performance Indicator	Progress to Date	Comments / Potential Barriers to Implementation
	Lifestyle Areas														
15.	Development of Mobility Hubs	Transport Planning and Infrastructure	Public transport improvements-interchanges stations and services	Commenced	Ongoing	South Gloucestershire Council: Infrastructure Services and Strategic Planning Policy Team	Unknown	No	Not funded	£10k-£50k	Planning	No specific target emission reduction	No specific KPI	Not commenced	
16.	Adopt the latest standards for active travel Infrastructure	Promoting Travel Alternatives	Intensive active travel campaign & infrastructure	2023	2025	South Gloucestershire Council Transport Policy Department	Unknown	No	Not funded	£50k-100k	Planning	No specific target emission reduction	Percentage of routes compliant with LTN/20	Not commenced	Funding and resource would be required to implement measure
17.	Increase the Number of Schools Accredited to Modeshift STARS Scheme	Promoting Travel Alternatives	School Travel Plans	2023	2026	South Gloucestershire Council in conjunction with local schools	Unknown	No	Not funded	£50k-100k	Planning	No specific target emission reduction	Number of schools accredited	Not commenced	
18.	Actively Promote and Introduce School Streets at Suitable	Promoting Travel Alternatives	Personalised Travel Planning	Ongoing	Ongoing	South Gloucestershire Council in conjunction with local schools	WECA funding	No	Fully funded	£50k-100k	Implementation	5-6% reduction in NO2 during the average school day	Less traffic and congestion at target schools during drop off and pick up times	Four School Streets have been implemented to date in South Gloucestershire	

Measure No.	Measure	Category	Classification	Estimated Year Measure to be Introduced	Estimated / Actual Completion Year	Organisations Involved	Funding Source	Defra AQ Grant Funding	Funding Status	Estimated Cost of Measure	Measure Status	Target Reduction in Pollutant / Emission from Measure	Key Performance Indicator	Progress to Date	Comments / Potential Barriers to Implementation
	School Locations.														
19	Support Schools to Introduce Park and Stride Sites	Promoting Travel Alternatives	Personalised Travel Planning	Ongoing	Ongoing	South Gloucestershire Council in conjunction with local schools	DfT Grant funding	No	Fully funded	£50k-100k	Implementation	No specific target emission reduction	Less traffic and congestion at target schools during drop off and pick up times	Schools in Kingswood have used the scheme	Funding was provided until March 2020 and additional funding should be secured.
20.	Continue to Offer Cycle Training to Schools	Promoting Travel Alternatives	Promotion of cycling	Ongoing	Ongoing	South Gloucestershire Council in conjunction with local schools	DfT	No	Funded	£<150k	Implementation	No specific target emission reduction	Less traffic and congestion at target schools during drop off and pick up times		
21.	Provide Resource to Plan and Install EV Charging Infrastructure	Promoting Low Emission Transport	Procuring alternative Refuelling infrastructure to promote Low Emission Vehicles, EV recharging, Gas fuel recharging	2022	2026	South Gloucestershire Council Transport Planning Department	Unknown	No	Unfunded	£10k-£50k	Planning	No specific target emission reduction	Greater number of EV cars in proportion to combustion engines owned in SG	An EV Strategy has been developed by South Gloucestershire Council and will be adopted following the consultation process.	

Measure No.	Measure	Category	Classification	Estimated Year Measure to be Introduced	Estimated / Actual Completion Year	Organisations Involved	Funding Source	Defra AQ Grant Funding	Funding Status	Estimated Cost of Measure	Measure Status	Target Reduction in Pollutant / Emission from Measure	Key Performance Indicator	Progress to Date	Comments / Potential Barriers to Implementation
22.	Develop an Air Pollution Communication Plan	Public Information	Other	2023	2026	South Gloucestershire Council Environmental Health and Public Health Departments	Officer time	No	Action not separately funded	<£10k	Planning	No specific target emission reduction	No specific KPI	Action not yet commenced	This will be a long-term strategy that will be continually refreshed.
23.	Raise Awareness of Air Pollution Impacts Amongst Health Professionals	Public Information	Other	2023	2026	South Gloucestershire Council Environmental Health and Public Health Departments	Officer time	No	Action not separately funded	<£10k	Planning	No specific target emission reduction	No specific KPI	Action not yet commenced	
24.	Collect and Share Case Studies of Good Practice from Businesses That Have Worked to Reduce Pollution Emissions	Public Information	Other	2023	2026	South Gloucestershire Council Environmental Health and Public Health Departments	Officer time	No	Action not separately funded	<£10k	Planning	No specific target emission reduction	No specific KPI	Action not yet commenced	
25.	Expand Smoke Control Area	Policy Guidance and Development Control	Other Policy	2023	2023	South Gloucestershire Council Environmental Health	Officer time	No	Action not separately funded	<£10k	Planning	No specific target emission reduction	No specific KPI	Action not yet commenced	Officer time/resource needed to expand the SCA, but further resource will be needed for enforcement.
26.	Domestic Solid Fuel Awareness	Public Information	Other	2023	Ongoing	South Gloucestershire Council Environmental Health and Public Health Departments	Officer time	No	Action not separate	<£10k	Planning	No specific target emission reduction	No specific KPI	Action not yet commenced	Funding and resource would be required to implement measure

Measure No.	Measure	Category	Classification	Estimated Year Measure to be Introduced	Estimated / Actual Completion Year	Organisations Involved	Funding Source	Defra AQ Grant Funding	Funding Status	Estimated Cost of Measure	Measure Status	Target Reduction in Pollutant / Emission from Measure	Key Performance Indicator	Progress to Date	Comments / Potential Barriers to Implementation
	Raising Campaign								ly funded						
27.	Lobby Govt to Review D7 Waste Exemptions: Burning Waste in the Open	Policy Guidance and Development Control	Other Policy	2023	2023	South Gloucestershire Council Environmental Health	Officer time	No	Action not separately funded	<£10k	Planning	No specific target emission reduction	No specific KPI	Action not yet commenced	Officer time/resource needed to implement and further resource will be needed for enforcement.
28.	Review and Update SGC Plans and Strategies to Reflect Latest Air Pollution Evidence and Public Health Impacts	Policy Guidance and Development Control	Other Policy	2023	2023	South Gloucestershire Council Environmental/Public Health Departments	Officer time	No	Action not separately funded	<£10k	Planning	No specific target emission reduction	No specific KPI	Action not yet commenced	Officer time/resource needed to expand the SCA, and further resource will be needed for enforcement.
29.	Review of Taxi Licensing Conditions to Improve Emission Standards When Review Takes Place in 2022/23	Promoting Low Emission Transport	Taxi emission incentives	2022	2023	South Gloucestershire Council Environmental/Public Health and Licensing Departments	Officer time	No	Action not separately funded	<£10k	Planning	No specific target emission reduction	No specific KPI	Action not yet commenced	Funding and resource would be required to implement measure
30.	Implement Urban Design Practices to Reduce	Policy Guidance and	Air Quality Planning and Policy	2023	2026	South Gloucestershire Council Environmental/Public	Officer time	No	Action not separate	<£10k	Planning	No specific target emission reduction	No specific KPI		Funding and resource would be required to implement measure

Measure No.	Measure	Category	Classification	Estimated Year Measure to be Introduced	Estimated / Actual Completion Year	Organisations Involved	Funding Source	Defra AQ Grant Funding	Funding Status	Estimated Cost of Measure	Measure Status	Target Reduction in Pollutant / Emission from Measure	Key Performance Indicator	Progress to Date	Comments / Potential Barriers to Implementation
	Exposure to Pollution	Development Control	Guidance			Health and Planning Departments			ly funded						

Appendix D: Air Quality Management Area Maps

Figure 3 Staple Hill AQMA (Amended 2012)

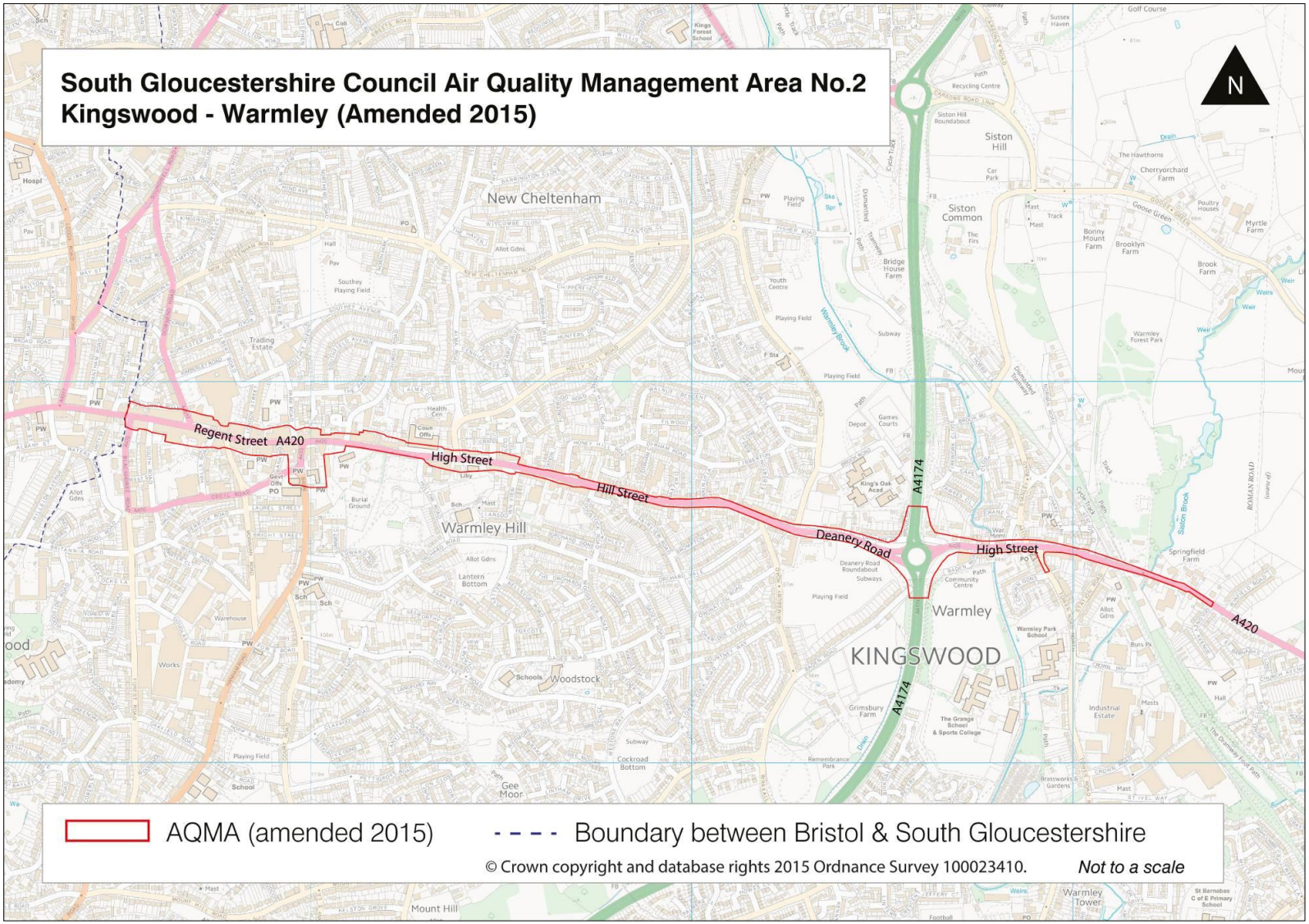

Figure 4 Kingswood – Warmley AQMA (Amended 2015)

Glossary of Terms

Abbreviation	Description
AQAP	Air Quality Action Plan - A detailed description of measures, outcomes, achievement dates and implementation methods, showing how the local authority intends to achieve air quality limit values'
AQMA	Air Quality Management Area – An area where air pollutant concentrations exceed / are likely to exceed the relevant air quality objectives. AQMAs are declared for specific pollutants and objectives
AQS	National Air Quality Strategy produced by Defra
ASR	Annual Status Report
CAAP	Clean Air Action Plan – A detailed action plan that considers the whole area as well as the declared AQMA
CAS	Clean Air Strategy produced by SGC
Defra	Department for Environment, Food and Rural Affairs
EU	European Union
EV	Electric Vehicles
LAQM	Local Air Quality Management
NO_2	Nitrogen Dioxide
NO_x	Nitrogen Oxides

PM_{10}	Airborne particulate matter with an aerodynamic diameter of 10µm (micrometres or microns) or less
$PM_{2.5}$	Airborne particulate matter with an aerodynamic diameter of 2.5µm or less
SGC	South Gloucestershire Council
SPD	Supplementary Planning Document
WECA	West of England Combined Authority

References

Air Quality Consultants - Case Study - School Streets (aqconsultants.co.uk) https://www.aqconsultants.co.uk/case-studies/school-streets

Defra for HM Government Clean Air Strategy 2019, https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/770715/clean-air-strategy-2019.pdf

Defra Local Air Quality Management Technical Guidance TG16 https://laqm.defra.gov.uk/air-quality/featured/uk-regions-exc-london-technical-guidance/

Defra, UK - UK Air Quality Policy Context https://uk-air.defra.gov.uk/air-pollution/uk-eu-policy-context

Institute of Air Quality Managements Indoor Air Quality Guidance: Assessment, Monitoring, Modelling and Mitigation https://iaqm.co.uk/wp-content/uploads/2013/02/iaqm_indoorairquality.pdf

Modeshift STARS https://modeshiftstars.org/index.php

South Gloucestershire Council 2012 Air Quality Action Plan http://aqma.defra.gov.uk/action-plans/south-glos-air-quality-action-plan-march-2012.pdf

South Gloucestershire Council Annual Status Reports https://www.southglos.gov.uk/environment-and-planning/pollution/pollution-control-air-quality/air-quality-reports/

South Gloucestershire Council Climate Emergency Strategy https://beta.southglos.gov.uk/wp-content/uploads/Climate-Emergency-Strategy.pdf

WECA Joint Local Transport Plan https://www.westofengland-ca.gov.uk/what-we-do/transport/joint-local-transport-plan/

WECA Joint-Green-Infrastructure-Strategy Joint-Green-Infrastructure-Strategy-–-June-2020..pdf (westofengland-ca.gov.uk)

WECA-Transport-Delivery-Plan) https://www.westofengland-ca.gov.uk/wp-content/uploads/2021/03/WECA-Transport-Delivery-Plan.pdf