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# Guildford Borough Council Guildford Town Centre Draft Air Quality Action Plan

In fulfilment of Part IV of the  
Environment Act 1995  
Local Air Quality Management

August, 2022

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### **Quality Assurance**

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## **Executive Summary**

This Air Quality Action Plan (AQAP) has been produced as part of Guildford Borough Council's (GBC's) statutory duties required by the Local Air Quality Management framework. It outlines the action we will take to improve air quality in Guildford Town Centre between 2022 and 2027.

Air pollution is associated with a number of adverse health impacts. It is recognised as a contributing factor in the onset of heart disease and cancer. Additionally, air pollution particularly affects the most vulnerable in society: children and older people, and those with heart and lung conditions. There is also often a strong correlation with equalities issues, because areas with poor air quality are also often the less affluent areas (Wheeler, 2005) (Defra, 2006) (Barnes, J., Chatterton, T., & Longhurst, J., 2019).

The annual health cost to society of the impacts of particulate matter alone in the UK is estimated to be around £16 billion (Defra, 2013). Guildford Borough Council is committed to reducing the exposure of people in Guildford Borough Council to poor air quality in order to improve health.

GBC has developed a set of primary actions which are considered measures likely to be viable within the timeframe to reduce NO<sub>2</sub> concentrations within the AQMA. In addition to the primary measures, there is a set of complementary measures which are likely to be viable but may have a lesser direct effect on reducing the NO<sub>2</sub> concentration.

GBC's priorities are to reduce congestion and emissions within Guildford Town Centre (focusing within the newly declared AQMA), improve vehicle fleet emissions where possible, educate the public about air quality, and to promote travel alternatives. In terms of measures within this plan, the following points have been taken into consideration:

- The majority of emissions arise from cars, with significant contributions also from Light Goods Vehicles (LGVs), Heavy Goods Vehicles (HGVs) and buses/coaches;
- There is no decipherable contribution from point sources or industry; and
- Any measures which will take longer than 2027 to implement and have effect, are unlikely to bring forward compliance with the air quality objectives.

Because of the above points, it is going to be very difficult to implement a measure which will have a large enough impact in isolation to improve the situation in a short timescale; multiple measures will thus need to be implemented.

This AQAP outlines how GBC plan to effectively tackle air quality issues within the Council's control. However, it is recognised that there are a large number of air quality policy areas that are outside of our GBC's influence (such as vehicle emissions standards agreed in Europe), but for which GBC may have useful evidence; GBC will continue to work with regional and central government on policies and issues beyond GBC's direct influence.

## **Responsibilities and Commitment**

This AQAP was prepared by Air Pollution Services on behalf of the Environment and Regulatory Services of Guildford Borough Council with the support and agreement of William Bryans of the Strategic Transport Team, Surrey County Council, as well as a wider steering group made up of Guildford Borough Council local authority officers.

This AQAP has been approved by:

Councillor Cait Taylor, Lead Member for Air Quality and Climate Change.

This AQAP will be subject to review every five years with annual appraisal of progress and reporting to the Guildford Joint Committee (Surrey County Council and GBC). Progress each year will be reported in the Annual Status Reports (ASRs) produced by Guildford Borough Council, as part of our statutory Local Air Quality Management duties.

If you have any comments on this AQAP, please send them to:

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# **1 Introduction**

This report outlines the actions that Guildford Borough Council (GBC) will deliver between 2022 and 2027 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 Guildford area.

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 (HMSO, 1995) and Section 11 of the Environment Act 2021 (HMSO, 2021), along with relevant regulations made under the Act to meet the requirements of the Local Air Quality Management (LAQM) statutory process.

This Plan will be reviewed every five years at the latest and progress on measures set out within this Plan will be reported on annually within GBC's air quality report (ASR).

GBC, which is one of the local authorities in Surrey, faces a number of challenges in order to improve air quality. Surrey is a densely populated county and traffic flows on A roads are almost double the national average. In Guildford Town Centre, a combination of volume of vehicles, stop start traffic caused by congestion, and properties situated close to the carriageway (meaning that high concentrations don't disperse as quickly as they would elsewhere) has led to high concentrations in a localised area. A number of options are included in this report, which have been evaluated by the AQAP steering group.

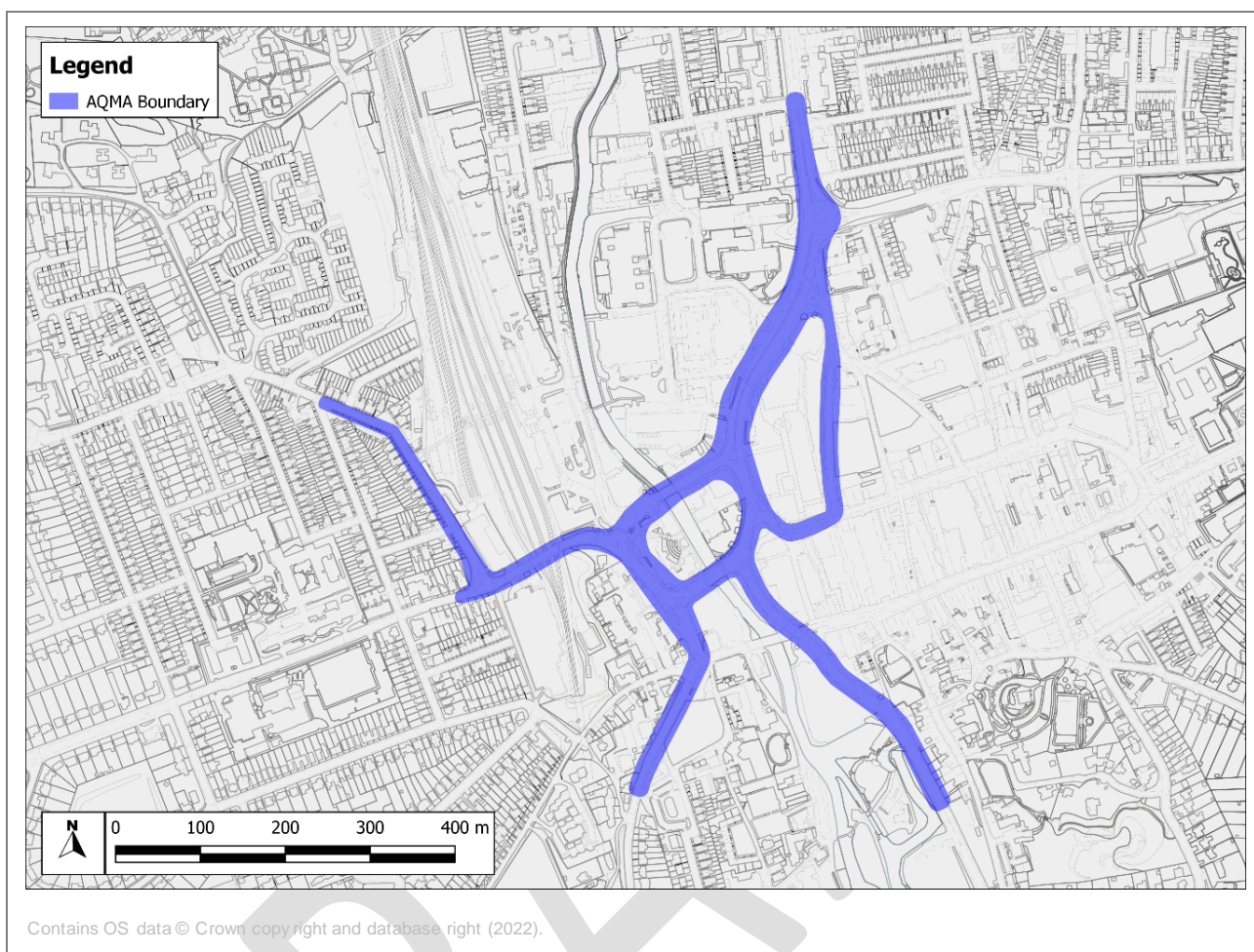
## 2 Summary of Current Air Quality in Guildford Town Centre

Under Part IV of the Environment Act 1995 (and amendments through the Environment Act 2021), Local Authorities are required to review and assess air quality in their areas and to report annually against air quality objectives for specified pollutants of concern, to Defra. For each air quality objective, local authorities have to consider whether the objective is likely to be achieved. Where it appears likely that an air quality objective is not being met, the authority must declare an AQMA. Following the declaration of an AQMA, the authority must then develop an AQAP which sets out the local measures to be implemented in pursuit of the air quality objectives.

Prompted by the Review and Assessment process, an AQMA was submitted to Defra for declaration in Guildford Town Centre in October 2021 following the recommendations of the commissioned Detailed Assessment (APS, 2021). The Detailed Assessment suggested that there may be exceedances of the 1-hour mean and annual mean nitrogen dioxide (NO<sub>2</sub>) air quality objectives in the centre of Guildford, along several roads. The AQMA has been proposed across many roads within the town centre, with the main source of emissions being from road traffic, which is exacerbated by the canyon nature of the roads (i.e. properties close to the carriageway resulting in reduced dispersion at the building facades). Figure 1 shows the extent of the Guildford Town Centre AQMA (shaded in blue).



Figure 1 – Proposed Guildford AQMA



## 3 Guildford Borough Council's Air Quality Priorities

### 3.1 Public Health Context

Air pollution is a major public health risk ranking alongside cancer, heart disease and obesity. A review by the World Health Organization (WHO) concluded that long-term exposure to air pollution reduces life expectancy by increasing the incidence of lung, heart and circulatory conditions. The Department of Health and Social Care's advisory Committee on the Medical Effects of Air Pollutants (COMEAP) have estimated that long-term exposure to man-made air pollution in the UK has an annual impact on shortening lifespans, equivalent to 28,000 to 36,000 deaths (COMEAP, 2018). Poor air quality can affect health at all stages of life. Those most affected are the young and old. In the womb, maternal exposure to air pollution can result in low birth weight, premature birth, stillbirth or organ damage. In children there is evidence of reduced lung capacity, while impacts in adulthood can include diabetes, heart disease and stroke. In old age, a life-time of exposure to air pollution can result in reduced life-expectancy and reduced wellbeing at end of life. There is also emerging evidence for a link between air pollution and an acceleration of the decline in cognitive function (Defra, 2019).

The Public Health function aims not only to improve health, but also reduce health inequalities by using an evidence-based approach to make recommendations on the delivery of health and well-being services. The Guildford Health and Wellbeing Strategy<sup>1</sup> recognises that *"Air Pollution is a significant public health issue. In Guildford, the key pollutants are specifically nitrogen dioxide (NO<sub>2</sub>) and fine particulates, these are principally from traffic emissions. UK Health Security Agency estimate that 5.7% of deaths in those over 25 years old are from long term exposure to anthropogenic particulate pollution"*. Desired outcomes of the Strategy include identification of areas with high levels of pollution and introduce measures to improve air quality and encouraging the use of lower polluting transport options. As such, this action plan supports work underway within the public health arena.

<sup>1</sup> Available at [Health and Wellbeing Guildford Council](#)

## 3.2 Planning and Policy Context

### 3.2.1 Local Plan

The Guildford Borough Council Local Plan: Strategy and Sites which covers the period to 2034, was adopted on 25 April 2019. Air Quality is referred to in paragraph 4.6.31 of the Local Plan<sup>2</sup>, which states:

*“Well designed developments may actively help to enhance air quality and reduce overall emissions, therefore reducing possible health impacts”.*

In relation to mitigation, air pollution is referred to under Policy ID3 (Sustainable transport for new developments):

*“This mitigation: .... (b) will address otherwise adverse material impacts on communities and the environment including impacts on amenity and health, noise pollution and air pollution”.*

Within the evidence base for the Local Plan, an investigation of the impacts of development plans on air quality has been undertaken. The air quality assessment considered the potential effect of the proposed plan at key receptor locations within GBC area. In summary, the findings of the assessment suggest that the effect of the Local Plan on annual mean NO<sub>2</sub> concentrations will be negligible and not a key constraint on development in the majority of the GBC area. The report advised that further detailed modelling would be advisable around roads where notable changes in traffic flows are predicted, including the A3 / A31 junction particularly Guildford and Godalming bypass and Farnham Road.

### 3.2.2 Guildford Transport Strategy

Guildford Borough Transport Strategy<sup>3</sup> sets out a programme to address the historic infrastructure deficit and to mitigate the key transport impacts of proposed planned growth in the borough (and beyond). The Council is working closely with the key transport infrastructure and service providers to accelerate the development and delivery of appropriate improvements. These include Surrey County Council, as the Local Highway Authority; National Highways, who are responsible for the A3 trunk road and M25 motorway; Network Rail; and bus and community transport operators. There are a number of component strategies for specific issues, including transport and air

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<sup>2</sup> Available at [New Local Plan Guildford Council](#)

<sup>3</sup> Available at [Guildford Borough Transport Strategy 2017 PDF](#)

quality, one of the outcomes of which is to ensure ‘*No requirement for Air Quality Management Areas in Guildford borough*’.

### **3.2.3 Sustainability**

The Guildford Development Framework includes a Climate Change, Sustainable Design, Construction and Energy Supplementary Planning Document (SPD)<sup>4</sup>, in order to effectively implement Sustainable Development (including reducing emissions of climate change gases and adapting and mitigating climate change through a variety of measures). Some of the measures included in the SPD relate to transport and increasing the usage of alternative modes of transport to the private vehicle, such as walking and cycling through the provision of access for pedestrians and cyclists and implementation of car clubs.

SCC Climate Change Strategy and Climate Change Delivery Plan are both very relevant local policy documents that touch upon air quality.

The strategy is: <https://www.surreycc.gov.uk/community/climate-change/what-are-we-doing/climate-change-strategy>

The delivery plan is: <https://www.surreycc.gov.uk/community/climate-change/what-are-we-doing/greener-futures-climate-change-delivery-plan-2021-to-2025>

### **3.2.4 Guildford Town Regeneration Strategy**

The Guildford Town Centre Regeneration Strategy<sup>5</sup> seeks to deliver a thriving and vibrant forward-looking town centre that embraces innovation to take best advantage of new and emerging technologies whilst respecting the town’s history and heritage and preserving what makes Guildford special. The strategy sets out a number of strategic priorities including aspirations to improve sustainable transport, improvements to the A3 and borough wide road network, high quality cycling and walking network, a reduction in air pollution and improving public health and wellbeing. The strategy builds on the town centre masterplan which aims to implement a number of place-making concepts including reducing the dominance of traffic, a healthy approach to movement which encourages a modal shift from the car to the other more sustainable forms of transport and a new riverside park.

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<sup>4</sup> Available at [Climate Change SPD Guildford Council](#)

<sup>5</sup> Available at [Shaping Guildford website](#)

### 3.2.5 Local Transport Plan

The Surrey Transport Plan<sup>6</sup> is the fourth Local Transport Plan (LTP4) for the county. It is a statutory plan (required by the Local Transport Act 2008 and Transport Act 2000), which replaced the third LTP (LTP3) on 12 July 2022. Like the previous LTPs, the Surrey Transport Plan is partly an aspirational document with funding not secured/guaranteed in place for all the measures identified. The strategies look forward to 2032 and are reviewed as necessary. The Local Transport Strategies and Forward Programmes will be replaced by the upcoming LTP4 Delivery Plan. The Delivery Plan is to be developed and published following publication of the new local transport plan guidance by DfT, which it is understood is expected imminently. Once produced, the Delivery Plan will take over the role of the LTSs and Forward Programmes and will be regularly updated. Surrey County Council anticipate that the Delivery Plan will have a strong focus on walking, cycling and bus schemes.

The vision of the LTP4 is:

*“A future-ready transport system that allows Surrey to lead the UK in achieving a low-carbon, economically prosperous, healthy and inclusive county with excellent quality of life for all residents, whilst seeking to enhance both the built and natural environments”.*

The four objectives of the LTP4 are:

1. *“to rapidly reduce carbon emissions, ensuring Surrey is on track for net zero emissions by 2050”;*
2. *“to support Surrey's growth ambitions and enable businesses and people to prosper sustainably”;*
3. *“to provide well connected communities that encourage equal access to travel to ensure no one is left behind”;* and
4. *“to create thriving communities with clean air, excellent health, wellbeing and quality of life”*

As one of the most densely populated counties in the UK with traffic flows on A roads almost double the national average, transport related problems are a major concern for people living and working in Surrey. There are a number of strategies which form

<sup>6</sup> Available at [Surrey County Council Transport Plan](#)



part of the Surrey Transport Plan. One of the objectives of the Local Transport Plan is to create thriving communities with clean air, excellent health, wellbeing and quality of life. The previous Surrey Transport Plan included an Air Quality Strategy, which has been superseded by the new LTP (LTP4). A number of policy areas included in LTP4 will contribute to lower emissions and therefore improved air quality, and the LTP4 consequently now represents the county council's approach to improving air quality based on the following key policy areas:

- *planning for place (through shorter journeys),*
- *digital connectivity (through reduced journeys),*
- *active travel/personal mobility (through shifting local car trips to walking and cycling),*
- *public and shared transport (through shifting local car trips to public and shared transport),*
- *demand management for cars (through de-incentivising car trips, and encouraging a shift to other, cleaner modes),*
- *demand management for goods vehicles (through incentivising more efficient and cleaner freight movements locally),*
- *efficient network management (through reducing congestion and idling),*
- *promoting zero emission vehicles (through increasing the uptake of EVs and hydrogen and electric buses, and*
- *supporting behaviour change (through encouraging a shift from private petrol/diesel vehicles to more sustainable modes).*

### **3.2.6 Guildford Air Quality Strategy**

The Guildford Air Quality Strategy<sup>7</sup> identifies key air quality issues within the Borough and sets out an approach to maintaining and improving air quality. A key aim of the strategy is to establish and maintain good working relationships with key stakeholders to achieve the air quality objectives. The priorities of the strategy are to set out a clear approach to air quality, monitor and report on air pollution, reduce vehicle emissions, work with other agencies, use the planning framework, reduce emissions at source

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<sup>7</sup> Available at [Guildford Council Air Quality Strategy 2017-2022 PDF](#)

and provide the public with information. There is overlap with the measures set out in the Air Quality Strategy with those in this AQAP for Guildford Town Centre.

### **3.3 The Environment Act 2021**

Paragraph 6, Schedule 11 of the Environment Act 2021 updated the Local Air Quality Management (LAQM) duties for Local Authorities in England. The key amendment to the Environment Act 1995 is the addition of Section 83A, which requires GBC to prepare an AQAP *“for the purpose of securing that air quality standards and objectives are achieved in an air quality management area”*.

The written plan should set out how the GBC will exercise its functions in order to secure that air quality standards and objectives are achieved and maintained thereafter in the area to which the plan relates.

The AQAP must set out ‘particular measures’ GBC will take to *“secure the achievement, and maintenance, of air quality standards and objectives in the area to which the plan relates, and must in relation to each measure specify a date by which it will be carried out”*.

GBC may revise an AQAP at any time and must revise an AQAP if it considers that there is a need for further or different measures to be taken to secure that air quality standards and objectives are achieved or maintained in the area to which the plan relates.

## **3.4 National Policy Context**

### **3.4.1 Air Quality Strategy**

The Air Quality Strategy (Defra, 2007) published by the Department for Environment, Food, and Rural Affairs (Defra) and Devolved Administrations, provides the policy framework for air quality management and assessment in the UK. It provides air quality standards and objectives for key air pollutants, which are designed to protect human health and the environment. It also sets out how the different sectors: industry, transport and local government, can contribute to achieving the air quality objectives. Local authorities are seen to play a particularly important role. The strategy describes the LAQM regime that has been established, whereby every authority has to carry out regular reviews and assessments of air quality in its area to identify whether the

objectives have been, or will be, achieved at relevant locations, by the applicable date. If this is not the case, the authority must declare an Air Quality Management Area (AQMA) and prepare an action plan which identifies appropriate measures that will be introduced in pursuit of the objectives.

The Air Quality Strategy is due to be updated to, amongst other considerations, account for the amendment to the Environment Act 1995, e.g. the addition of Section 83A.

### **3.4.2 Clean Air Strategy 2019**

The Clean Air Strategy (Defra, 2019) sets out a wide range of actions by which the UK Government will seek to reduce pollutant emissions and improve air quality. Actions are targeted at four main sources of emissions: Transport, Domestic, Farming and Industry.

### **3.4.3 Reducing Emissions from Road Transport: Road to Zero Strategy**

The Office for Low Emission Vehicles (OLEV) and Department for Transport (DfT) published a Policy Paper (DfT, 2018) in July 2018 outlining how the government will support the transition to zero tailpipe emission road transport and reduce tailpipe emissions from conventional vehicles during the transition. This paper affirms the Government's pledge to end the sale of new conventional petrol and diesel cars and vans by 2040 [now 2030], and states that the Government expects the majority of new cars and vans sold to be 100% zero tailpipe emission and all new cars and vans to have significant zero tailpipe emission capability by this year, and that by 2050 almost every car and van should have zero tailpipe emissions. It states that the Government wants to see at least 50%, and as many as 70%, of new car sales, and up to 40% of new van sales, being ultra-low emission by 2030.

The paper sets out a number of measures by which Government will support this transition but is clear that Government expects this transition to be industry and consumer led. If these ambitions are realised, then road traffic-related NO<sub>x</sub> emissions can be expected to reduce significantly over the coming decades.

### **3.4.4 The Decarbonisation Plan**

More recently, the Government published a Decarbonisation Plan in 2021, which states *“new diesel and petrol cars and vans would no longer be sold from 2030, and*



*that all new cars and vans must be fully zero emission at the tailpipe from 2035”, bringing the dates significantly forward from the DfT Policy Paper.*

### **3.4.5 The Industrial Strategy**

The Government has published a white paper that sets out a long-term ‘Industrial Strategy’ for the UK (HM Government, 2017). It includes a key policy to *“support electric vehicles through a £400m charging infrastructure investment and an extra £100m to extend the plug-in car grant”* and states *“the UK’s road and rail network could dramatically reduce carbon emissions and other pollutants”*. Unlike their fossil fuel counterparts, electric vehicles do not release nitrogen oxides (NOx) emissions; if the strategy is fulfilled then NOx emissions will reduce significantly over the coming decades.

### **3.4.6 The Clean Growth Strategy**

An ambitious blueprint for Britain’s low carbon future was set out by the Government in a Policy paper (HM Government, 2018) in April 2018. Although this strategy focuses on reducing the UK’s carbon footprint, it contains several policies and proposals that relate to air quality. This includes ending the sale of new conventional petrol and diesel cars and vans by 2040, supporting the uptake of ultra-low emission vehicles (ULEVs), developing electric vehicle infrastructure, providing funds for ULEV taxis and low emission buses, investment in cycling and walking, and promoting the shift of freight from road to rail.

### **3.4.7 The 25 Year Environment Plan**

The Government has published a Policy paper called the ‘25 Year Environment Plan’ (HM Government, 2019) which set out what the Government will do to improve the environment within a generation. This includes the first goal ‘Clean air’ where the government states *“we will achieve clean air by...meeting legally binding targets to reduce emissions of five damaging air pollutants. This should halve the effects of air pollution on health by 2030...Ending the sale of new conventional petrol and diesel cars and vans by 2040...Maintaining the continuous improvement in industrial emissions by building on existing good practice and the successful regulatory framework”*.

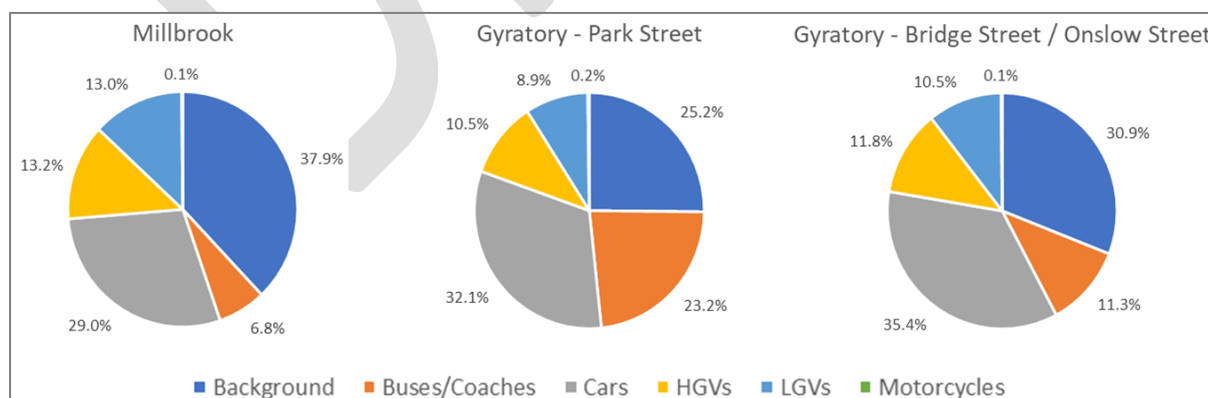
### 3.5 Source Apportionment

The AQAP measures presented in this report are intended to be targeted towards the predominant sources of emissions within Guildford Town Centre, as these will have the most significant impacts and therefore value for money.

A source apportionment exercise was carried out by GBC in 2021 on modelled concentrations at relevant receptors in Guildford Town Centre. The total concentration of a pollutant comprises contributions from road traffic as well as other local sources and those that are transported into the area from further away. The key source of emissions in the town centre are emissions from road traffic, therefore the source apportionment focuses on the contributions from different vehicle types and backgrounds (i.e. all other sources).

Figure 2 shows the contribution from different vehicle types to NO<sub>2</sub> concentrations along with background contributions at those locations. At the key locations of exceedance in Guildford Town Centre, a large proportion of the resulting concentration is caused locally by emissions from cars. Heavy goods vehicles (HGVs), light goods vehicles (LGVs) and buses/coaches also contribute significant proportions, of approximately 10% each in general, with Park Street having a high contribution from buses/coaches (23%). Very little is contributed from motorcycles. Measures focusing on cars, HGVs, LGVs and buses/coaches would help to improve air quality. In particular, buses/coaches are clearly important at Park Street.

**Figure 2: Contributions of Different Sources to Total Predicted Annual Mean Nitrogen Dioxide Concentration ( $\mu\text{g}/\text{m}^3$ ) at Each Location in 2021**



### 3.6 Required Reduction in Emissions

The degree of improvement needed in order for the annual mean NO<sub>2</sub> objective to be achieved is defined by the difference between the highest measured or predicted concentration and the objective level (40 µg/m<sup>3</sup>).

In terms of describing the reduction in emissions required, it is more useful to consider nitrogen oxides (NO<sub>x</sub>). The required reduction in local NO<sub>x</sub> emission has been calculated in line with guidance presented in LAQM.TG16 (Defra, 2018)<sup>8</sup>.

Table 3.1 sets out the required reduction in local emissions of NO<sub>x</sub> that would be required at the worst-case location where an exceedance is predicted, in order for the AQMA compliance level (38 µg/m<sup>3</sup> for this AQMA) to be achieved.

The highest annual mean NO<sub>2</sub> concentration has been predicted at Park Street (60.9 µg/m<sup>3</sup>), requiring a reduction of 22.9 µg/m<sup>3</sup> for the compliance level to be achieved. Table 3.1 shows that at this location a reduction of 56.6 µg/m<sup>3</sup> in NO<sub>x</sub> emissions would be required in order to achieve the objective. This equates to a reduction of 57% in local road traffic emissions at this location.

**Table 3.1 – Improvements in Annual Mean NO<sub>2</sub> and NO<sub>x</sub> Concentrations Required in 2019 to Meet the Objective**

Receptor	Required Reduction in Annual Mean NO <sub>2</sub> (µg/m <sup>3</sup> )	Required Reduction in Annual Mean NO <sub>2</sub> (% of total predicted NO <sub>2</sub> )	Required Reduction in Road NO <sub>x</sub> Emissions (µg/m <sup>3</sup> )	Required Reduction in Road NO <sub>x</sub> Emissions (% reduction in road NO <sub>x</sub> )
Park St	22.9	37.6	56.6	57.0

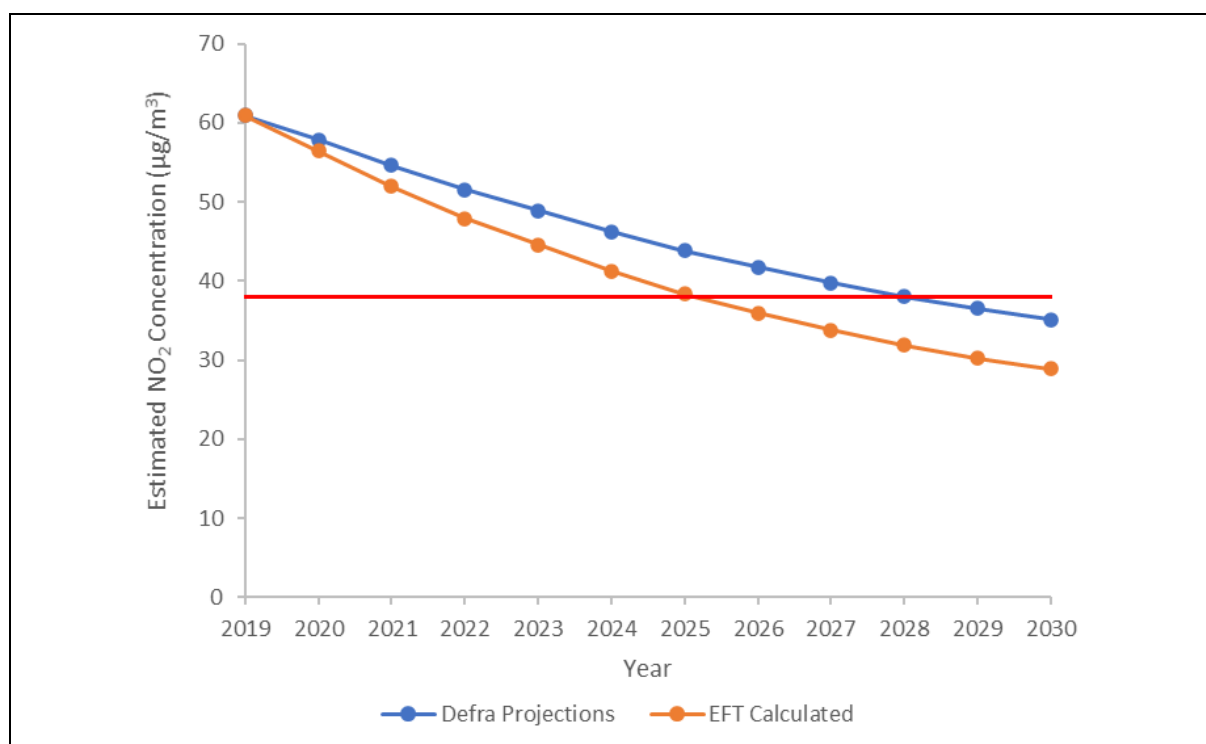
### 3.7 Year when objective is predicted to be achieved

A brief analysis has been undertaken to estimate when the objective may be achieved without any further intervention. It should be noted that this is not an accurate prediction but is based on factors provided by Defra for quantifying air quality concentrations in future years. The following graph shows reductions in concentrations at the worst-case modelled receptor within the AQMA, using two different methods; Defra's roadside NO<sub>2</sub> projection factors and using the Emissions Factors Toolkit (EFT) published by Defra (assuming no traffic growth).

<sup>8</sup> At the point this document was being finalised the updated LAQM Technical Guidance 2022 was published. The approach is also consistent with the update.

The graph indicates that, without intervention, the annual mean NO<sub>2</sub> concentrations may reduce below the compliance level (38 µg/m<sup>3</sup> for this AQMA) at some time between 2025 and 2028.

**Figure 3: Projected Concentrations in Future Years at Receptors Predicted to Exceed Air Quality Objectives**



Predicting pollutant concentrations in a future year will always be subject to uncertainty. It is necessary to rely on a series of projections as to what will happen to traffic volumes, background pollutant concentrations and vehicle emissions. Although traffic volumes are generally increasing across the UK, background pollutant concentrations are expected to decrease into the future with cleaner technologies becoming available and increasing uptake of low emission vehicles.

Future year vehicle emission rates are based on a range of factors, such as expected vehicle fleet release dates, anticipated improvements in emission reduction technologies, expected uptake rates of different vehicles based on government policies, etc. It is therefore possible that the expected future emission rates in the EFT may differ from reality. Historically, evidence had suggested that Defra's EFT exaggerated reductions in NO<sub>x</sub> emissions as expectations of reductions from diesel vehicles were included which were not seen in practice. However, analyses of recent NO<sub>x</sub> measurements now provide evidence that vehicle controls are working and as a result Defra's EFT provides the current best reflection of the rate of reductions into the

future. Due to the implications associated with the Covid-19 Pandemic upon vehicle fleet turnovers and low emission vehicle uptake, there remains uncertainty in predicting future compliance within the AQMA. GBC will continue to monitor and conduct modelling exercises over the forthcoming years to understand the real levels.

### **3.8 WHO Guidelines**

The 2019 Clean Air Strategy (Defra, 2019) includes a commitment to set a “*new, ambitious, long-term target to reduce people's exposure to PM<sub>2.5</sub>*” which the Environment Act 2021 commits the Secretary of State to setting. The World Health Organization (WHO) acknowledges that current evidence suggests no safe level for PM<sub>2.5</sub> (particulate matter less than 2.5 micrometres in diameter). The WHO set a previous guideline, which was 10 µg/m<sup>3</sup> as an annual mean and more stringent than the current air quality objectives, to reflect the level at which increased mortality from exposure to PM<sub>2.5</sub> is likely. However, the WHO guidelines were updated in September 2021 and now include more stringent levels to reflect updated evidence of health effects (5 µg/m<sup>3</sup> for PM<sub>2.5</sub>), since the previous guidelines were published in 2005. Following the UK leaving the EU the Government have published the Environment Act 2021, which puts a duty on the Secretary of State to lay before Parliament an annual mean target for PM<sub>2.5</sub> in ambient air before November 2022. The maximum annual mean PM<sub>2.5</sub> concentration in the town centre has been predicted to be 16.9 µg/m<sup>3</sup>, below the air quality objective but above the WHO guideline level. Although the AQMA has not been declared for PM<sub>2.5</sub>, GBC have a duty to work towards improving PM<sub>2.5</sub> levels in the town centre. The new WHO guidelines also set a more stringent level of 10 µg/m<sup>3</sup> for NO<sub>2</sub>, which should be borne in mind when considering the level of ideal reductions to be achieved, particularly where there is highly sensitive exposure or a densely populated area of exposure.

### **3.9 Key Priorities**

Based on the evidence provided above, the following issues need to be considered when deciding on which measures are likely to be effective:

- The majority of emissions arise from cars;
- There is a significant contribution of emissions from LGVs and HGVs;
- There is a significant contribution from buses, particularly at Park Street;
- There is no decipherable contribution from point sources or industry;

- Any measures which will take longer than 2027 to implement and have effect, are unlikely to bring forward compliance with the air quality objectives.

Because of the above points, it is going to be very difficult to implement a single measure in isolation which will have a large enough impact to improve the situation in a short timescale; multiple measures will therefore be required. A number of measures have been discussed within the Action Planning process, anything implemented will need to be proportionate to the issue which has been identified, which is a localised issue around the gyratory and arterial roads, and considered in terms of potential wider impacts outside of the town centre (i.e. to avoid creating another AQMA elsewhere). The following sections outline measures which are proposed to be implemented, and those which require further investigation. Appendix A includes measures which have been discussed and discounted (and the reasons for being discounted).

## 4 Development and Implementation of Guildford Town Centre AQAP

### 4.1 Consultation and Stakeholder Engagement

In developing this AQAP, GBC have worked with other local authorities, agencies, businesses and the local community to improve local air quality. Schedule 11 of the Environment Act 1995 requires local authorities to consult the bodies listed in Table 4.1.

The consultation was carried out using the following media: emails, online survey, letters to over 300 residents located within the AQMA, newsletter articles, social media and presentations.

The response to our consultation stakeholder engagement is given in the Guildford Town Centre Air Quality Action Plan-Post Consultation Report presented to the Guildford Joint Committee on 26<sup>th</sup> October 2022.

**Table 4.1 – Consultation Undertaken**

Yes/No	Consultee
Not at this stage	The Secretary of State
Yes	The Environment Agency
Yes	The highways authorities (National Highways and Surrey County Council)
Yes	Neighbouring local authorities (Waverley Borough Council, Surrey Heath Borough Council, Woking Borough Council and Mole Valley District Council)
Yes	Other public authorities as appropriate, such as Public Health Surrey County Council, Education Surrey County Council, National Health Service and National Trust (Wey Navigation)
Yes	Bodies representing local business interests via email and newsletters
Yes	Local councillors both GBC and SCC, plus MP for Guildford Constituency
Yes	Parish councils, community groups and interested focus groups.
Yes	Bodies and companies representing local transport business interests and other organisations including bus companies, Railtrack and road freight companies
Yes	Local residents living within and near to the AQMA approximately 310 properties
Yes	Academic institutions including schools, colleges and further education.

## **4.2 Steering Group**

The Air Quality Steering Group includes environmental health officers, planners (policy and transport), local highways officers (Surrey County Council), plus the GBC's contracted air quality consultants Air Pollution Services (a trading name of KALACO Group Ltd). Meetings are held with all or some of the group dependent on topics and other commitments, the latest post consultation meeting was held on the 4 August 2022.

Workshops were held on 21<sup>st</sup> October 2021 and 13<sup>th</sup> December 2021 to discuss measures for inclusion within the AQAP, including with Surrey County Council. Useful dialogues were had in relation to current and future practice, ideas for further measures and consultation as the AQAP is taken forward with a particular focus on the plans and visions for the town centre.

Matters relating to the Guildford Town Centre are also covered in the Consultation Shaping Guildford's Future<sup>9</sup> launched on the 8 December 2021.

## **4.3 Existing and Committed Measures**

A number of measures and initiatives, which will improve air quality, or raise awareness, are already being implemented in the Guildford area. These are not focussed specifically on Guildford Town Centre but will assist in reducing emissions more generally and increasing awareness of air quality, travel choice and choice of vehicle. These existing measures include:

- easitGUILDFORD<sup>10</sup>. This is a green travel network, which was launched in 2019, which currently has over 12 businesses signed up. There are benefits for employees to encourage car sharing and alternative travel to work, which include discounts on rail and bus travel, discounts on EV recharging, car sharing schemes, discounts on bikes and free car club membership.
- Electric buses. Guildford has introduced a fleet of nine electric buses for its park and ride service from car parks to the town centre to replace existing diesel buses on the routes. This is the first Park and Ride in the UK to operate using only electric buses.
- Surrey Air Alliance have delivered a Defra funded schools education project in AQMA areas. Around 40 schools in the County have taken part in the

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<sup>9</sup> See [Shaping Guildford's Future website](#) for more details.

<sup>10</sup> See [the easitGuildford website](#) for more details.



programme which included workshops on air quality, cycle training and an anti-idling campaign;

- GBC has introduced a Green Scheme<sup>11</sup>, which enables owners of electric vehicles to apply for a Green Parking Permit free of charge, which gives discounted parking in car parks;
- Project Aspire<sup>12</sup>, which aims to improve the health and well-being of Guildford residents and to reduce social inequality, is about providing leadership, encouragement and support to all communities. The projects include initiatives to reduce dependency on cars and educational programmes in schools;
- GBC and Surrey County Council are incrementally improving the existing cycle network in the borough. An example of this is the Guildford-Godalming Greenway<sup>13</sup>, which links the two towns with a safe route suitable for people who are walking, cycling, using wheelchairs or families with children in pushchairs. The Guildford Local Committee, on 13 June 2018, adopted the Guildford-Godalming Greenway route into the Guildford Cycle Plan which is a Surrey County Council plan. At Guildford, the Greenway will link into the growing network of green routes around the town. The route exists and is being upgraded gradually. Surrey County Council currently have funding for a short section of it known as Dagley Lane, otherwise the route is not funded, but it is anticipated that developments would contribute to sections of the scheme.
- GBC is participating in iSCAPE (Improving the Smart Control of Air Pollution in Europe)<sup>14</sup> which works on integrating and advancing the control of air quality and carbon emissions in European cities in the context of climate change through the development of sustainable and passive air pollution remediation strategies, policy interventions and behavioural change initiatives.
- Surrey County Council will begin a new one-way trial of Walnut Tree Close on the 29<sup>th</sup> May 2022 for a period of six months. This is part of the Town Centre Master plan which aims to create a more attractive pedestrian environment. If this one-way system proves beneficial to the impact of traffic on Walnut Tree Close and Guildford Town Centre, reduces queuing and conflicts along the road and gyratory, and improves the safety and environment, then it will be made permanent.
- An Electric Vehicle charging network is currently within the construction stage with 19 on street units installed in and around the AQMA in the last year.

Following the consultation, feedback was gathered in public aware of these existing measure. Figure 4 shows the response to Question 6 of the public survey considering awareness of the existing measures.

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<sup>11</sup> See [What is Green Scheme Guildford Council](#) for more details.

<sup>12</sup> See [Aspire projects and future events Guildford Council](#) for more details,

<sup>13</sup> See [Guildford Godalming Greenway website](#) for more details.

<sup>14</sup> [iSCAPE website](#)

**Figure 4: Results from Question 6 of the public survey.**

6. Please tick the current air pollution reduction initiatives you are aware of			
Answer Choices		Response Percent	Response Total
easitGuildford (a green travel network launched in 2019, providing benefits to encourage businesses and employees to use sustainable travel options)		7.03%	23
Electric buses (nine electric buses serve the Park and Ride sites)		94.19%	308
Surrey Air Alliance of local authorities (including a schools education project and a grant to fund the introduction of electric taxis)		5.20%	17
Green Parking Scheme (enables electric vehicle owners to obtain a free parking permit and discounted parking in the GBC car parks)		18.96%	62
Project Aspire (which aims to protect the health and wellbeing of Guildford residents and reduce social inequality.		8.56%	28
Land use planning (Planning requirement for Air quality assessments of medium/large scale developments and/or Planning conditions for EV charging facilities in the allocated/shared car park of proposed development)		11.62%	38
The electric vehicle charging network and Improvements to cycle networks in the Borough for example the Guildford to Godalming link)		45.57%	149
		answered	327
		skipped	64

Where feasible, and funding is available, these projects will be continued and enhanced. Following feedback from the consultation there is benefit in increased awareness of easitGuildford and Green Parking Permit schemes and the land use planning requirements.

## 4.4 Development of AQAP Measures

In relation to Guildford Town Centre specifically, the following groups of measures, as categorised and outlined by Defra, have been considered. A brief overview of this consideration is included in [Table 4.2](#).

**Table 4.2 – Measure Categories Considered in Guildford**

Measure Category	Current Practice in Guildford / consideration for Guildford Town Centre
Alternatives to Private Vehicle Use	Bus based Park and Ride is already in place, and now fully electric. Additional services may be highly beneficial. GBC has adopted a policy to promote and facilitate home working, flexible start and finish times, compressed hours, mobile working and virtual meetings, and conference calls etc.
Environmental Permits	Not relevant at this location.
Freight and Delivery Management	Much freight and delivery is present in the town centre and contributes to elevated pollution levels. Measures to reduce emissions from these vehicles would be highly beneficial.
Policy Guidance and Development Control	Regional groups already operating in Surrey. An Air Quality Strategy for Guildford already adopted. GBC work within the planning system to request air quality assessments where relevant and ensure mitigation measures are implemented where necessary, although further improvements in local guidance would be highly beneficial.
Promoting Low Emission Plant	Not a major issue at this location.
Promoting Low Emission Transport	<p>Green scheme parking fees for Electric vehicles in GBC car parks. Electric vehicles as part of GBC vehicle fleet.</p> <p>Currently Environment and Regulatory al Health recommends conditions to the Planning Services on developments above 10 dwellings to have infrastructure for electric vehicle charging in each house or 10% EV spaces for unallocated car parking spaces.</p> <p>Electric vehicle car parking standards for new development are also promoted through Surrey County Council's Vehicular and Cycling Parking Guidance (as well as via GBC's Environmental and Regulatory Health Team). The guidance's standards will be increased due to match the standards contained in the emerging Local Plan: Development Management Policies and Parking SPD<sup>15</sup>, to standards which, as a minimum, mirrors the Government's proposals to be implemented via Building Regulations.</p> <p>Discounted car parking facilities for electric and ultra-low emission vehicles<sup>16</sup>.</p>
Promoting Travel Alternatives	GBC implemented easitGuildford, a green travel network, to promote alternative transport, car sharing, bike to work scheme, provision of lockers, changing facilities, shows to support cyclists, runners, walkers, promote P&R scheme and non-car use.
Public Information	This is being delivered through other projects such as easitGuildford and Project Aspire as outlined above. Further provision would be beneficial.

<sup>15</sup> [Proposed Submission Local Plan](#)

<sup>16</sup> [Parking Strategy Guildford Council](#)

Traffic Management	Traffic Management options are being discussed with Surrey County Council. There are several other schemes that may affect traffic in Guildford Town Centre in the near future that require further consideration. Any major changes to the road network would likely not be implemented within a short enough period to provide sufficient benefits in air quality within the AQMA. However, there may be minor changes that could be beneficial.
Transport Planning and Infrastructure	<p>Cycle network improvements such as the Guildford to Godalming Greenway are proposed. There is already a usable cycle route into Guildford, however, the Guildford to Godalming Greenway feasibility study demonstrated there is potential for the new greenway to encourage additional cycling trips. <b>NOTE SCC Highways sated in their response that this is not complete.</b></p> <p>Existing cycling provision is predominantly situated on the carriageway, and the new greenway would provide a safe and accessibly walk for cyclists and pedestrians who are not comfortable using bus roads. The new greenway would be an upgrade to existing active travel facilities as the quality of the existing paths along this route is poor in places.</p> <p>The distance and topography means that there is a propensity to cycle between Guildford and Godalming. The scheme is looking to provide high-quality infrastructure for cycling and walking and may encourage some further modal shift of work trips.</p>
Vehicle Fleet Efficiency	Although GBC is promoting low emission public transport (particularly for the electric bus fleet for P&R), for other vehicle types these measures would be difficult to target for vehicles specifically driving through Guildford Town Centre. Continued improvements in the bus fleet are therefore considered further for this Action Plan.

Table 4.3 presents a short-list of initial measures which have been considered for implementation within the AQAP and were circulated for consultation and included commentary on each measure for context. Following feedback from the consultation process Measure 27 has been split into two measures (new measure 32 and 33) and any additional measures identified added. Additional measures following consultation feedback are set out in Table 4.4.

**Table 4.3 – Initial Proposed Measures**

Measure No.	Measure
1	A new bus-based park and ride
2	Road strategy schemes to tackle congestion on Strategic Road Network
3	Incident management and effective contingency planning to minimise traffic disruption and unnecessary congestion
4	Reduction of speed limits, 20 mph zones
5	Traffic control centre monitoring of traffic movement and providing real time traffic control over many traffic control installations
6	HGV ban around the gyratory during peak and interpeak hours.
7	Improve website information – Educational resources for schools
8	Schools air quality programme - monitoring, student air quality committee, educational materials, presentations
9	Promotion of cycling travel route maps to public
10	Promotion of low pollution route maps to public (walking)
11	Postcode air quality checker
12	Air Alert system
13	Provide air quality information on current conditions in Guildford and what residents can do to help
14	Provide indoor air quality information and what residents can do to improve their conditions
15	Produce tools to assess traffic management schemes prior to implementation
16	Produce tool to evaluate measures to reduce traffic emissions
17	Provide a parking App to direct users to closest and cheapest spaces
18	Facilitate and promote home, mobile, remote and flexible working within the Council
19	Electric vehicle (EV) deliveries, local delivery hubs
20	A Clean Air Zones (CAZ) and/or Low Emission Zone (LEZ) for buses + HGVs
21	Anti-vehicle idling scheme e.g. At level crossings, taxi ranks, the station, bus stops and outside schools.
22	Bus stop clearways
23	Development of air quality supplementary planning guidance for developers
24	Improving modelling predictions of NO <sub>2</sub> concentrations
25	Promotion of Travel Choices
26	Taxi licencing conditions e.g. vehicle emission standards
27	Electric cycle/scooter hire scheme
28	Sustainable Procurement Guidance
29	Incentivise retrofitting scheme or upgrading of buses to low emission fuels

**Table 4.4 – Additional Proposed Measures**

Measure No.	Measure	Comments
30	Improved facilities for walking and cycling	Work on the Guildford LCWIP is due to commence shortly this year and, once complete, it will provide a strategic plan for a walking and cycling network across the borough. This LCWIP document will be used to bid for funding from central government and other sources to deliver the routes and improvements identified within the Plan, and the Plan's primary routes (ranked on their propensity to increase walking and cycling amongst other criteria) will have been worked up to feasibility stage before the lifecycle of the AQAP is complete. Improving active travel infrastructure, with delivery aided by the implementation of the Guildford Borough LCWIP, should be included in this Plan's list of suggested actions.
31	EV charging points	Provision of EV charging points at strategic locations around Guildford Town Centre and surrounding area to encourage the use of EVs.
32	Electric cycle hire scheme	Significant work undertaken to develop an electric bike scheme by GBC, however deferred and budget removed in 2020. SCC, as Local Transport Authority, are investigating the feasibility of an electric bike share scheme for Guildford.
33	Electric scooter hire scheme	An opportunity could be electric scooter hire to encourage commuters to travel by train or other alternatives to private vehicles and then pick-up scooter for last part of journey to workplace. Electric scooters only permitted as part of an approved Government trial, which are currently running elsewhere. So may need to wait until decision made on outcome of the trials.
34	Electric cargo bike hire scheme	Electric cargo bike hire could also be an opportunity. Cargo bikes have the potential to replace many journeys previously done by cars, such as shopping and are supported in the SCC LTP4.
35	Awareness of existing schemes: - of easitGuildford; and - Green Parking Permit.	Increased awareness of existing schemes would be beneficial.
36	Low traffic neighbourhoods	A measure suggested by SCC which aligns with LTP4 advocating for Liveable Neighbourhood schemes. These could be delivered in partnership with the SCC.

Each measure above has been scored 1 – 5 (going from worst to best, respectively) for a series of parameters, including cost to implement, timescale to implement, practical feasibility, deliverability, value for money, public buy-in, political buy-in and potential reductions to NO<sub>2</sub>. In addition, GBC has a duty to work towards improving PM<sub>2.5</sub> emissions and the potential reductions to PM<sub>2.5</sub> for the measures have also been considered. An overall score was then calculated to enable the proposed measures to be ranked, in order to focus on the most useful measures to implement. The ranking and scores are set out in Table 4.5.

Included in Table 4.5 are ranked potential for NO<sub>2</sub> reductions based on experience. These are not based on quantitative modelled at this stage, although it is acknowledged that detailed modelling of some scenarios would be beneficial and will be investigated by GBC.

**Table 4.5 – Options Matrix**

Measure No.	Measure	Cost	Timescale	Practical Feasibility	Deliverability	Value for Money	Public Buy-in	Political Buy-in	NO <sub>2</sub> Reduction	PM Reduction	Overall Score
1	A new bus-based park and ride	2	5	5	5	5	5	3	4	4	38
2	Road strategy schemes to tackle congestion on Strategic Road Network	5	4	2	3	3	5	5	3	3	33
3	Incident management and effective contingency planning to minimise traffic disruption and unnecessary congestion	4	3	2	3	3	5	5	4	4	33
4	Reduction of speed limits, 20 mph zones	5	5	3	5	2	4	5	2	2	33
5	Traffic control centre monitoring of traffic movement and providing real time traffic control over many traffic control installations	4	3	2	3	3	5	5	3	3	31
6	HGV ban around the gyratory during peak and interpeak hours.	4	4	2	4	3	3	3	4	4	31
7	Improve website information – Educational resources for schools	5	4	5	5	1	3	3	2	2	30
8	Schools air quality programme - monitoring, student air quality committee, educational materials, presentations	5	4	5	5	1	3	3	2	2	30
9	Promotion of cycling travel route maps to public	5	5	4	4	2	2	2	2	2	28
10	Promotion of low pollution route maps to public (walking)	5	5	4	4	2	2	2	2	2	28
11	Postcode air quality checker	5	5	5	5	2	1	3	1	1	28

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Measure No.	Measure	Cost	Timescale	Practical Feasibility	Deliverability	Value for Money	Public Buy-in	Political Buy-in	NO <sub>2</sub> Reduction	PM Reduction	Overall Score
12	Air Alert system	3	4	5	5	2	3	4	1	1	28
13	Provide air quality information on current conditions in Guildford and what residents can do to help	5	5	5	5	1	1	2	2	2	28
14	Provide indoor air quality information and what residents can do to improve their conditions	5	5	5	5	1	1	2	2	2	28
15	Produce tools to assess traffic management schemes prior to implementation	3	3	3	3	3	3	3	1	3	25
16	Produce tool to evaluate measures to reduce traffic emissions	3	3	3	3	3	3	3	1	3	25
17	Provide a parking App to direct users to closest and cheapest spaces	4	4	2	4	1	4	4	2	2	27
18	Facilitate and promote home, mobile, remote and flexible working within the Council	5	5	4	4	3	1	3	1	1	27
19	Electric vehicle (EV) deliveries, local delivery hubs	2	2	3	2	3	3	3	5	4	27
20	A Clean Air Zones (CAZ) and/or Low Emission Zone (LEZ) for buses + HGVs	2	2	3	3	2	4	4	4	3	27
21	Anti-vehicle idling scheme e.g. At level crossings, taxi ranks, the station, bus stops and outside schools.	5	4	2	2	2	4	5	1	1	26
22	Bus stop clearways	4	2	3	2	3	3	3	2	3	25
23	Development of air quality supplementary planning guidance for developers	4	2	3	2	1	3	3	4	4	26



Measure No.	Measure	Cost	Timescale	Practical Feasibility	Deliverability	Value for Money	Public Buy-in	Political Buy-in	NO <sub>2</sub> Reduction	PM Reduction	Overall Score
24	Improving modelling predictions of NO <sub>2</sub> concentrations	4	4	4	5	2	2	2	2	1	25
25	Promotion of Travel Choices	5	5	3	4	1	1	2	2	2	25
26	Taxi licencing conditions e.g. vehicle emission standards	4	3	3	1	4	2	3	2	2	25
28	Sustainable Procurement Guidance	5	5	5	3	1	1	2	1	1	24
29	Incentivise retrofitting scheme or upgrading of buses to low emission fuels	3	2	3	2	2	3	3	3	3	24
30	Improved facilities for walking and cycling	3	3	3	4	1	5	5	2	2	27
31	EV charging points	2	3	3	3	3	5	5	3	3	30
32	Electric cycle hire scheme	3	4	3	3	3	5	4	3	3	31
33	Electric scooter hire scheme	3	4	4	4	3	4	3	3	3	31
34	Electric cargo bike hire scheme	3	4	4	3	3	4	4	2	2	29
35	Awareness of existing schemes: - of easitGuildford; and - Green Parking Permit.	5	5	4	5	4	5	5	2	2	37
36	Low traffic neighbourhoods	2	2	3	3	1	3	3	1	1	19
Note: Measure 27 has been replaced by 32 and 33.											

When considering which to implement, it is important to take into account whether they are likely to be viable economically within the timescales of achieving improvements. If measures will not have any effect until after 2027 then they will not help to revoke the AQMA. Table 4.6 sets out which authority would be responsible for each measure, the potential funding that may be utilised to implement each measure and the overall viability of achievement of each measure taking account of when each measure could lead to improvements within the AQMA. The measures that are not achievable have not been taken forward for further consultation (see Appendix A for further details).

**Table 4.6 – Viability of Measures**

Measure No.	Measure	Responsible Authority	Funding Potential	Viability of Achievement
1	A new bus-based park and ride	GBC own the land of existing sites. SCC setup and operate park and ride sites	Likely to be over £10 million to be confirmed. Land may need to be purchased.	Not achievable within time period due to funding, planning constraints, and physical constraints as old landfill site
2	Road strategy schemes to tackle congestion on Strategic Road Network	SCC and National Highways. GBC as part of Town Centre Masterplan	Not able to estimate	Not achievable within the time period. The Masterplan is unlikely to be in place before 2025
3	Incident management and effective contingency planning to minimise traffic disruption and unnecessary congestion	SCC and National Highways	Not able to estimate but likely viable	Potentially achievable. Reliant on both highway authorities.
4	Reduction of speed limits, 20 mph zones	SCC	Not able to estimate	Potentially achievable
5	Traffic control centre monitoring of traffic movement and providing real time traffic control over many traffic control installations	SCC	Not able to estimate	Not achievable within the time period. The Masterplan is unlikely to be in place before 2025
6	HGV ban around the gyratory during peak and interpeak hours.	SCC	Not able to estimate	Potentially achievable within timescale after feasibility studies.
7	Improve website information – Educational resources for schools	SCC and Private Sector	Likely to be less than £5,000	Potentially achievable and will add to current work on Eco Schools and travel plans
8	Schools air quality programme - monitoring, student air quality committee, educational materials, presentations	SCC and Private Sector. Four schools close to town centre, three colleges and the university.	Likely to be less than £10,000 initially	Potentially achievable will add to current work on Eco Schools and travel plans
9	Promotion of cycling travel route maps to public	SCC and GBC	Likely to be less than £5,000	Potentially achievable, should be removed to be included in the Guildford Air Quality Strategy 2023-2028 as a permanent measure It is a long term measure it
10	Promotion of low pollution route maps to public (walking)	SCC and GBC	Likely to be less than £5,000	Potentially achievable, should be removed to be included in the Guildford Air Quality Strategy 2023-2028 as a permanent measure Potentially achievable

<b>Measure No.</b>	<b>Measure</b>	<b>Responsible Authority</b>	<b>Funding Potential</b>	<b>Viability of Achievement</b>
11	Postcode air quality checker	GBC	Likely to be less than £5,000	Potentially achievable, should be removed to be included in the Guildford Air Quality Strategy 2023-2028 as a permanent measure Potentially achievable
12	Air Alert system	GBC	Not likely unless part of long-term monitoring of AQAP	Not achievable as unlikely to resource an automatic monitoring station
13	Provide air quality information on current conditions in Guildford and what residents can do to help	GBC	Likely to be less than £5,000.	Potentially achievable, should be removed to be included in the Guildford Air Quality Strategy 2023-2028 as a permanent measure.
14	Provide indoor air quality information and what residents can do to improve their conditions	GBC	Likely to be less than £5,000.	Potentially achievable, should be removed to be included in the Guildford Air Quality Strategy 2023-2028 as a permanent measure.
15	Tools to assess traffic management schemes prior to implementation	SCC	Not able to estimate	Potentially achievable
16	Produce tool to evaluate measures to reduce traffic emissions	SCC	Not able to estimate	Potentially achievable, should be removed to be included in the Guildford Air Quality Strategy 2023-2028 as a permanent measure Potentially achievable
17	Provide a parking App to direct users to closest and cheapest spaces	GBC	Not able to estimate	Potentially achievable
18	Facilitate and promote home, mobile, remote and flexible working within the Council	GBC	Likely to be less than £5,000	Potentially achievable
19	Electric vehicle (EV) deliveries, local delivery hubs	GBC, SCC and National Highways	Not able to estimate	Potentially achievable
20	A Clean Air Zones (CAZ) and/or Low Emission Zone (LEZ) for buses + HGVs	SCC	Likely to be more than £5,000,000	Potentially achievable
21	Anti-vehicle idling scheme e.g. At level crossings, taxi ranks, the station, bus stops and outside schools.	GBC and SCC	Not able to estimate	Potentially achievable
22	Bus stop clearways	SCC	Not able to estimate	Potentially achievable

Measure No.	Measure	Responsible Authority	Funding Potential	Viability of Achievement
23	Development of air quality supplementary planning guidance for developers	GBC	From GBC policy	Potentially achievable
24	Improving modelling predictions of NO <sub>2</sub> concentrations	GBC and SCC	Likely to be less than £10,000	Potentially achievable
25	Promotion of Travel Choices	GBC and SCC	Not able to estimate	Not achievable as unlikely to provide improvement within time period
26	Taxi licencing conditions e.g. vehicle emission standards	GBC, SCC, and other authorities	From Defra but has been revised	Potentially achievable
28	Sustainable Procurement Guidance	GBC and SCC	No additional funding required	Potentially achievable, should be removed to be included in the Guildford Air Quality Strategy 2023-2028 as a permanent measure Achievable
29	Incentivise retrofitting scheme or upgrading of buses to low emission fuels	SCC	Is subject to Subsidy Control Act 2022 controls.	Potentially achievable, however it
30	Improved facilities for walking and cycling	GBC, SCC and National Highways	Not able to estimate	Potentially achievable
31	EV charging points	GBC, SCC and National Highways	Not able to estimate	Potentially achievable
32	Electric cycle hire scheme	SCC for a town-wide scheme	Not able to estimate,	Potentially achievable
33	Electric scooter hire scheme	SCC for a town-wide scheme	Not able to estimate	Potentially achievable, although subject to Government legality outcome from trial.
34	Electric cargo bike hire scheme	GBC, SCC and Private Companies	Corporate programmes. May be opportunity in near future for Government scheme. Private companies operate schemes in other cities in England and internationally successfully	Potentially achievable.
35	Awareness of existing schemes: - of easitGuildford; and - Green Parking Permit.	GBC	Likely to be less than £5,000	Potentially achievable
36	Low traffic neighbourhoods	GBC, SCC and National Highways	Not able to estimate	Potentially achievable

Measures which scored above 25 and are considered viable in the timeframe have been taken forwards. In addition to viability of measures, any measure which is viable but scores less than 3 in terms of potential for NO<sub>2</sub> reduction has been excluded from the specific measures list which are considered to be part of the Environment Act 2021 requirements for 'particular measures', however, they are included in a complementary measure list not part of the set of particular measures.

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## 5 AQAP Measures

Following consultation with relevant authorities, stakeholders and consultees, a number of measures have been considered by as being appropriate for taking forward to assist with revoking the AQMA. These measures are considered to have the greatest potential for NO<sub>2</sub> reductions within the AQMA, most likely to be viable within the timeframe required and score highest when considering the range of factors set out in Table 4.5. These measures form the set of ‘particular measures’ required to achieve and maintain the air quality standards and objectives within the AQMA as prescribed in the Environment Act 2021. These primary measures are set out in Table 5.1.

In addition to these measures, a set of complementary measures which may be viable but have a lesser potential to reduce NO<sub>2</sub> concentrations in the AQMA are set out in Table 5.2. These measures should be considered where possible to supplement primary measures set out in Table 5.1.

The measures that have been considered and not pursued or are to be included in the next Guildford Air Quality Strategy 2023-2028 are set out in Appendix A.

When considering the advantages of measures, an important factor has been to take account of co-benefits with other environmental factors, particularly the county council’s Climate Change Strategy and Climate Change Delivery Plan which are both very relevant local policy documents that touch upon air quality.

When considering the measures, it is important to note that there are some procedures already in place that should be utilised to assist with minimising air pollution and are thus not action plan measures. In particular, this includes development control. Proposed development which delay achieving or prevents GBC from maintaining compliance with the air quality standards and objectives will be considered poor development and are unlikely to be permitted. In addition, any stationary combustion plant located within 500 m of the AQMA should be considered to ensure the impact on the AQMA is minimised. Existing and new plant greater than 1MW<sub>th</sub> input should be controlled by the Environmental Agency. All new plant should be designed to optimise dispersion and minimise impacts on the AQMA.

## 5.1 Primary measures

Measures are discussed, including limitations, in the text after the table. Many of the measures require further work by GBC to design the final implementation of the measure to ensure that it is most effective at reducing NO<sub>2</sub> concentrations within the AQMA.

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**Table 5.1 – Primary Air Quality Action Plan Measures**

Measure No.	Measure	Measure Category	Lead Authority	Planning Phase	Implementation Phase	Deliverable Date	Comments
3	Incident management and effective contingency planning to minimise traffic disruption and unnecessary congestion	Traffic Management	SCC	2023	2023-2024	2025	Work with National Highways
6	HGV ban around the gyratory during peak and interpeak hours <sup>a</sup>	Freight and Delivery Management	SCC	2023	2023-2025	2026	Requires full feasibility study.
19	Electric vehicle (EV) deliveries, local delivery hubs <sup>a</sup>	Promoting Low Emission Transport	GBC	2023	2024-2025	2026	GBC or private land. Will need to go through planning development.
20	A Clean Air Zones (CAZ) and/or Low Emission Zone (LEZ) for buses + HGVs <sup>a</sup>	Promoting Low Emission Transport	SCC	2023	2024-2025	2026	Requires full feasibility study.
23	Development of air quality supplementary planning guidance for developers	Policy Guidance and Development Control	GBC	2022	2023	2023	Development management policies in Local Plan process
31	EV charging points at residential and destinations	Promoting Low Emission Transport	SCC (on-street parking) and GBC (off-street car parks)	2022	2022-2023	2023 onwards	SCC on street in progress. GBC to work within the authority
32	Electric cycle hire scheme	Promoting Travel Alternatives	GBC	2023	2022-2023	2024	Requires full feasibility study.
33	Electric scooter hire scheme	Promoting Travel Alternatives	GBC	2023	2023-2024	2024, subject to change in legislation	Requires full feasibility study.



### **5.1.1 Incident management and effective contingency planning to minimise traffic disruption and unnecessary congestion**

The measure will aim to reduce congestion by proactively managing incidents and traffic disruption.

This is a popular action and will be parallel to the A3 consultation and the Masterplan and aligns with the LTP4 Vision Zero measures.

### **5.1.2 HGV ban around the gyratory during peak and interpeak hours**

Banning heavy goods vehicles (HGVs) from travelling through the gyratory and adjacent roads during peak and interpeak hours (7:30 am to 6:30 pm) could help reduce emissions from HGVs in the town centre, which currently account for approximately 10% of all emissions. The zone proposed would need to account for a wide range of factors, such as turnaround locations, all of which would be addressed at a later stage with feasibility studies.

### **5.1.3 EV deliveries, local delivery hubs**

Light goods vehicles (LGVs) accounts for approximately 10% of all emissions in the town centre. This measure aims to reduce these emissions through introduction of electric LGVs schemes and local final mile delivery hubs using EVs.

To make this viable electric charging LGV hubs would be needed along the key arterial routes in Guildford, including near the A3.

In addition, it could be beneficial to have local delivery hubs that include electric charging infrastructure. These hubs would enable large HGV deliveries to be transferred to electric LGVs, for cleaner deliveries within the town centre. While there are potentially many locations where local hubs could be developed, Guildford is possibly not large enough to support a depot of size that would be needed. This measure may need to work in combination with a Clean Air Zone (CAZ) or Low Emission Zone (LEZ).

### **5.1.4 CAZ/LEZ**

CAZs and LEZs have been implemented in several cities recently (Bath, Birmingham, Greater London, Oxford, etc.) and proposed for many more. A zone could be utilised to achieve improvements in the town centre.

Guildford Town Centre (Guildford Borough Council) Air Quality Action Plan – 2022

The key focus of a zone would be to limit high emission vehicles travelling through the gyratory, where the worst exceedances within the AQMA occur.

Around the gyratory buses/coaches and HGVs account for about 22-33% of emissions and taxis for less than 5%. It is understood that the existing bus/coach fleet in the town centre is old and likely has high emission rates. Consideration would need to be given to which buses could meet criteria and impact on operators and alternative routes. Similarly, old HGVs typically have high emission rates. The taxis are also understood to be fairly old. Vans and minibuses (i.e. LGVs) also account for around 10% of emissions. Private cars account for approximately 30-35% of emissions alone and charging cars could therefore lead to a large improvement in air quality. Charging private cars would, however, have economic impacts on those more deprived and would need further consideration of the wider impacts.

Any zone proposed would need to account for a wide range of factors, such as turnaround locations, all of which would be addressed at a later stage with feasibility studies.

#### **5.1.5 Development of air quality supplementary planning guidance for developers**

The development of air quality guidance for developers submitting planning applications could help to minimise emissions from new developments in Guildford.

This would need to include consideration of many aspects, including personalised travel plans, a construction vehicle (low emission) / Non-Road Mobile Machinery (NRMM) database, and EV deliveries.

This measure would be intended to build upon draft Policy P11: Air Quality and Air Quality Management Areas in the Local Plan Development Management Policies (LPDMP), which is not likely to be adopted until March 2023 at the earliest. Any guidance would need to supplement this policy and could only be adopted after the LPDMP in 2023.

Informal guidance could be utilised sooner. It would have no planning weight but may be useful as a form of 'operational advice'. Resource would be required for preparation of guidance, consultation, committee process, and would be competing against other corporate priorities for new Planning Policy documentation, such as Review of Local

Plan, town centre Area Action Plan, new SPD's already signalled in adopted and emerging Local Plans, etc.

#### **5.1.6 EV charging points**

Provision of a good network of publicly accessible EV charging points around the town centre and also at locations near public transport hubs would be beneficial to encourage the use of EV. The charging points can be on public or private land, but should also be accessible to all users including commercial vehicles. This measure is particularly effective in combination with an emission control zone (e.g. CAZ or LEZ).

#### **5.1.7 Electric cycle hire scheme**

A Brompton bike hire scheme is in operation at the main rail station and there is also a small bike share scheme in operation at the University of Surrey. These are both run by third parties. Significant work has already been undertaken on delivery of an electric bike scheme by GBC, however this was deferred and budget removed in 2020. SCC, as Local Transport Authority, are investigating the feasibility of an electric bike share scheme for Guildford.

#### **5.1.8 Electric scooter hire scheme**

Electric scooters are currently only permitted as part of an approved Government trial, which are currently running elsewhere (other cities). The use of electric scooters is understood to be successful in cities such as Bristol, however, there is a need to wait until decision made on outcome of the Government trials and legislation brought forward to legalise their use on public roads.

If the trials are successful there is a good opportunity for electric scooters to be located across the town centre including based at the main railway station, helping to minimise emissions. The existing schemes in the trial are run by 3<sup>rd</sup> parties and are self-funding (i.e. low cost). This measure is likely to have positive effect in town centre if the Government trial is successful and could help as part of a wider package of measures.

### **5.2 Further work**

GBC are committed to carrying out further work on the likely effectiveness of the primary measures to determine the feasibility of each measure and in line with the

updates to Section 11 of the Environment Act 2021, GBC will update and review the AQAP to ensure effective and viable measures are implemented.

Furthermore GBC are committed to working in partnership with other stakeholders such as Surrey Country Council and National Highways.

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## 5.3 Complementary measures

The table below contains measures which will complement those listed as primary and will serve as additional options for minor improvements. These measures are unlikely to be sufficient to reduce the nitrogen dioxide levels except in combination with one or several primary actions.

**Table 5.2 – Complementary Air Quality Action Plan Measures**

Measure No.	Measure
4	Reduction of speed limits, 20 mph zones
7	Improve website information – Educational resources for schools
8	Schools air quality programme - monitoring, student air quality committee, educational materials, presentations
15	Produce tools to assess traffic management schemes prior to implementation
16	Produce tool to evaluate measures to reduce traffic emissions
17	Provide a parking App to direct users to closest and cheapest spaces
21	Anti-vehicle idling scheme e.g. At level crossings, taxi ranks, the station, bus stops and outside schools.
22	Bus stop clearways
30	Improved facilities for walking and cycling
34	Electric cargo bike hire scheme
35	Awareness of existing schemes: - of easitGuildford; and - Green Parking Permit.

## Appendix A: Reasons for Not Pursuing Action Plan Measures

**Table A1: Action Plan Measures Not Pursued and the Reasons for that Decision**

Measure No.	Action category	Action description	Reason action is not being pursued (including Stakeholder views)
1	Alternatives to Private Vehicle Use	Bus based park and ride	The bus-based park and ride is not seen as an achievable action that will be completed by 2025. It will require over £10 million of funding to be completed, it will likely encounter planning constraints during the planning process and the site previous use was a landfill site that will offer physical constraints to the site.
2	Traffic Management	Road strategy schemes to tackle congestion on Strategic Road Network	The Town Centre Masterplan is unlikely to be implemented before 2025. The implementation of a changing road strategy will not likely be achievable by 2025 as the Masterplan will be required.
5	Traffic Management	Traffic control centre monitors traffic movement and provides real time traffic control over many traffic control installations	The Town Centre Masterplan is unlikely to be implemented before 2025. The implementation of a changing road strategy will not likely be achievable by 2025 as the Masterplan will be required.
12	Public Information	Air Alert	GBC do not have the resources for a network of automatic monitoring stations for the period up to 2025.
25	Promoting Travel Alternatives	Promotion of Travel Choices	The action of promoting travel choices is seen as unlikely to make a significant impact within the administrative area of GBC within the relevant time period. The impact of other suggested measures compared to promoting travel choices will likely be greater.

28	Policy Guidance and Development Control	Sustainable Procurement Guidance	Overall ranking score was not sufficiently high enough to justify further direct benefits on the AQMA.
29	Vehicle Fleet Efficiency	Incentivise retrofitting scheme or upgrading of buses to low emission fuels	Currently there is a long lead time on such schemes and as such is unlikely to be achievable within the time period for action.
36	Promoting Travel Alternatives	Low traffic neighbourhoods	Potential benefit in residential areas but unlikely to provide any significant benefit to air pollution within the AQMA.
<b>MEASURES TO BE INCLUDED IN FUTURE STRATEGIES AS PERMANENT</b>			
10	Public Information	Promotion of low pollution route maps to public (walking)	Considered to be a more appropriate measure in an air quality strategy
11	Public Information	Postcode air quality checker	Considered to be a more appropriate measure in an air quality strategy.
13	Public Information	Provide air quality information on current conditions in Guildford and what residents can do to help	Considered to be a more appropriate measure in an air quality strategy.
14	Public Information	Provide indoor air quality information and what residents can do to improve their conditions	Considered to be a more appropriate measure in an air quality strategy.

24	Policy Guidance and Development Control	Improving modelling predictions of NO <sub>2</sub> concentrations	Considered to be a more appropriate measure in an air quality strategy.
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## Appendix B: Glossary of Terms

Abbreviation	Description
APS	Air Pollution Services
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	Air Quality Strategy
ASR	Air quality Annual Status Report
CAZ	Clean Air Zone
Defra	Department for Environment, Food and Rural Affairs
EU	European Union
HGV	Heavy Goods Vehicle
LAQM	Local Air Quality Management
LGV	Light Goods Vehicle
NH	National Highways
NO <sub>2</sub>	Nitrogen Dioxide
NO <sub>x</sub>	Nitrogen Oxides
PM <sub>2.5</sub>	Fine particulate matter of less than 2.5 micrometres in diameter
SCC	Surrey County Council

## Appendix C: References

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