Reigate and Banstead Borough Council

Air Quality Action Plan and Strategy

In fulfilment of Part IV of the Environment Act 1995

Local Air Quality Management

2025

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Assisted by	Air Quality CONSULTANTS

Executive Summary

This Air Quality Action Plan and Strategy (AQAP&S) has been produced as part of the Council's statutory duties required by the Local Air Quality Management framework. It outlines the actions the Council will take to improve air quality in Reigate and Banstead between 2025 and 2030. It covers both actions specific to the remaining Air Quality Management Areas (AQMAs) as well as more strategic actions for improving air quality more widely.

This AQAP&S replaces the previous action plan for Horley which ran from 2007. The 2007 AQAP focussed on non-airport related sources, and projects delivered include those aiming to provide a modal shift from private vehicle use, including travel planning, cycle and walking infrastructure. Other measures delivered since the last AQAP include improvements to the Electric Vehicle infrastructure, working with Gatwick Airport Limited (GAL) on mitigation measures to form part of its Development Consent order (DCO) submission and working across Surrey on a number of projects to either improve the air quality evidence base, or reduce emissions from specific sources such as taxis and Domestic Solid Fuel Burning.

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.

The annual health cost to society of the impacts of particulate matter alone in the UK is estimated to be around £16 billion[1], while work completed by the council in 2019 suggests that particulate and nitrogen dioxide concentrations in the borough in 2017 had a health cost of between £38 and £45 million.

Therefore Reigate and Banstead Borough Council (RBBC) is committed to reducing the exposure of people in the borough to poor air quality in order to improve health.

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

We have developed actions that can be considered under nine broad topics:

- Alternatives to private vehicle use
- Policy guidance and development control
- Promoting low emission plant
- Promoting low emission transport
- Promoting travel alternatives
- Public information
- Transport planning and infrastructure
- Traffic management
- Vehicle fleet efficiency

As a result of the source apportionment outlined in this report, the following priorities have been identified:

- Priority 1 – to work collaboratively with Surrey County Council (SCC) to ensure that wider transport measures are delivered, in particular to increase the use of active travel and public transport, as well as to increase the proportions of low and zero emission vehicles;
- Priority 2 – work collaboratively with National Highways to ensure that emissions from the strategic road network are reduced, in particular the sections of the A23 in Horley and Hooley, but also more widely across the district;
- Priority 3 – work collaboratively with Gatwick Airport Limited to address emissions associated with airport operations, particularly within the Horley AQMA, including monitoring Ultra-fine Particles (UFP), and to identify actions to minimise future increases in emissions;
- Priority 4 – to work collaboratively across Surrey to ensure that projects are delivered to reduce the impacts of domestic solid fuel burning and other sources of $PM_{2.5}$; and
- Priority 5 – report on an annual basis to Defra the implementation of the measures set out in this report, as well as monitored concentrations within the AQMAs.

This AQAP&S outlines how the Council plans to effectively tackle air quality issues within its control. However, it is recognised that there are a large number of air quality policy areas that

are outside of the Council's influence (such as vehicle emissions standards agreed in Europe, aircraft engine emissions standards agreed internationally), but for which the council may have useful evidence, and so the council will continue to work with regional and central government on policies and issues beyond the Council's direct influence.

Responsibilities and Commitment

This AQAP was prepared by Air Quality Consultants Ltd and Reigate and Banstead Borough Council with the support and agreement of the following officers and departments:

- Head of Environmental Health
- Sustainability Officer (RBBC)
- Fleet Transport Manager (RBBC)
- Head of Planning Policy (RBBC)
- Highways (Surrey County Council)
- Health Protection Team Manager (Public Health Surrey County Council)
- Ongoing engagement with Gatwick Airport Limited (GAL) including via the Development Consent Order (DCO) process, which is considering future airport emissions
- Surrey Air Alliance (partners from other local authorities in Surrey, including Surrey County Council Public Health, SCC Transport, and SCC Trading Standards)
- National Highways Route Managers (Area 4 and 5)

As both of the AQMAs have a road managed by National Highways running through them, a key stakeholder is National Highways, who have been engaged with separately for each AQMA (as Horley and Hooley are covered by different area teams). Meetings were held with route managers for both sections of the A23.

This AQAP&S has been approved by:

The Head of Environmental Health.

This AQAP&S has not been signed off by the Director of Public Health at SCC given the council actively works with Public Health Colleagues on actions to improve air quality via the Surrey Air Alliance. This approach has been agreed by SCC and all eleven boroughs and districts.

This AQAP&S will be subject to an annual review, appraisal of progress and reporting to The Head of Environmental Health and the council's Executive Portfolio Holder for Place, Planning and Regulatory Services. Progress each year will be reported in the Annual Status Reports (ASRs) produced by Reigate and Banstead Borough Council, as part of the Council's statutory Local Air Quality Management duties.

If you have any comments on this AQAP&S please send them to Environmental Health either by email:

environmental.protection@reigate-banstead.gov.uk

Or alternatively by post to:

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1 Introduction

This report outlines the actions that Reigate and Banstead Borough Council (RBBC) will deliver between 2025 and 2030 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 Reigate and Banstead administrative 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 and relevant regulations made under that part and 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 Reigate and Banstead Borough Council's air quality annual status report (ASR). This document represents both the requirement for an Air Quality Action Plan (AQAP) for the two Air Quality Management Areas (AQMAs) which remain in Horley and Hooley, as well as the shift towards encouraging preventative action to improve air quality, avoid exceedances and reduce the long-term health impacts associated with air pollution (an Air Quality Strategy). Hence it is an Air Quality Action Plan and Strategy (AQAP&S) and actions are included which specifically relate to reducing nitrogen dioxide concentrations within the AQMAs, as well as more strategic measures to reduce emissions of nitrogen dioxide, PM_{10} and $PM_{2.5}$ across the borough.

2 Summary of Current Air Quality in Reigate and Banstead

2.1 Pollutants and Health Effects Relevant to RBBC

The main pollutants of concern are nitrogen dioxide and particulate matter (small particles made up of a variety of different chemicals and metals). Each has different sources and health effects. Nitrogen dioxide (NO_2) is a gas produced as a result of the combustion of fuel such as petrol, diesel, gas, wood, or aviation fuel, and also hydrogen where it is burnt rather than used in a fuel cell. Its presence in air contributes to the formation and modification of other air pollutants, such as ozone and particulate matter, both of which are also harmful to health.

Particulate matter is the most important air pollutant in terms of health effects and is different from the gaseous pollutants in that it is not a clearly defined chemical compound. It is a mixture of small particles which are usually described by their size i.e. PM_{10}, $PM_{2.5}$ or ultrafines ($PM_{0.1}$).

Particulate matter is a mixture of both so called primary and secondary particles, and these components are both human-made and naturally occurring. Sources of primary particles include combustion processes, such as diesel engines and woodburning, but can also include mechanically derived particles such as tyre, brake and road wear, windblown dusts (including, for example, dust from the Sahara) and sea salt. Mechanically derived particles tend to be larger in size (PM_{10}) whereas combustion derived particles are smaller ($PM_{2.5}$). Fine particles ($PM_{2.5}$) especially those from secondary sources[2] can travel long distances and are known as transboundary pollutants. This means that the particles measured in Reigate and Banstead often originate from emissions far beyond the borough boundary making reductions in particulate matter and especially $PM_{2.5}$ challenging to achieve at a local level.

[2] Secondary particles occur due to chemical reactions in the atmosphere generally downwind some distance from the original emission source known as precursors.

There is an ever-growing evidence base for the connections between air pollution and heart and lung health and the link to premature mortality, with connections also being made to other conditions such as diabetes, dementia, mental health and birth outcomes.

It is generally accepted that air pollution can be harmful to anyone. However, some people are more likely to suffer than others because they live in deprived areas, which often have higher levels of air pollution; they live, learn or work near busy roads; and/or are more susceptible because of their age or existing medical conditions. Therefore, groups that can be considered vulnerable include, but are not limited to, the old, the young, deprived communities and those with existing health conditions.

The following table outlines the relevant air quality objectives, including their averaging periods.

Table 2.1 – Air Quality Objectives for Relevant Pollutants

Pollutant	Averaging Period	Air Quality Objective
Nitrogen dioxide	1-hour Mean	200 µg/m^3 not to be exceeded more than 18 times a year
	Annual Mean	40 µg/m^3
PM_{10}	24-hour Mean	50 µg/m^3 not to be exceeded more than 35 times a year
	Annual Mean	40 µg/m^3
$PM_{2.5}$	Annual Mean	20 µg/m^3

The Council is mindful of the fact that the health impacts of air pollution do not stop just because a legal limit / objective level has been met, and that there are health risks associated with a consistent low level of exposure[3] as recognised by the WHO[4] in setting an annual average air quality standard for nitrogen dioxide of 10 µg/m^3, and no more than 3 days per annum over 25 µg/m^3.

This risk is also recognised by the European Commission[5] which has suggested and agreed to an annual average nitrogen dioxide concentration of 20 µg/m^3 to be met by 2035 (originally 2030) and no more than 18 days per annum over 50 µg/m^3.

The health impact of pollutant exposure to concentrations below legal limits is also clear from air pollution modelling work[6] completed by the council in 2019 (with a base year of 2017), which modelled the whole of Surrey, and found that within RBBC the health cost of air pollution ranged from £37.9 million to £45.4 million. This figure was the highest in Surrey and

[3] Chief Medical Officers Report 2017. Recommendations 5 and 7.
[4] WHO (2021) Global air quality guidelines: particulate matter ($PM_{2.5}$ and PM_{10}), ozone, nitrogen dioxide, sulfur dioxide and carbon monoxide. ISBN 978-92-4-003421-1.https://apps.who.int/iris/handle/10665/345329.
[5] ANNEXES to the Proposal for a Directive of the European Parliament and of the Council on ambient air quality and cleaner air for Europe (recast) COM(2022) 542 final ANNEXES 1 to 11.
[6] CERC (2019) Detailed air quality modelling and source apportionment for the Surrey Local Authorities.

reflected both the level of residents' pollution exposure - albeit to levels that met the relevant air quality standards - and also the higher population of Reigate and Banstead relative to other local authorities in Surrey.

In view of the science (and increasingly global policy) suggesting that the UK legal limit value for nitrogen dioxide should be considerably lower than the level that it is currently set at, and given the ongoing health cost to the borough, there is a strong focus on reducing nitrogen dioxide levels from road transport still further in the measures in this AQAP&S.

The AQAP&S is also focused on reducing residents' exposure to both nitrogen dioxide and particulate matter[7] in terms of PM_{10}, $PM_{2.5}$ and also ultrafine particles which are a major concern in the vicinity of Gatwick Airport and especially within the Horley AQMA.

2.2 Air Quality in AQMAs

The latest Annual Status Report for Reigate and Banstead concluded that there is a downward trend in air pollutant concentrations, particularly when evaluated over a number of years. In 2023, there were no exceedances of the annual mean nitrogen dioxide objective either within, or outside of AQMAs. Nitrogen dioxide concentrations also continue to be below the 1-hour mean objective at all real time sites. Measured concentrations of PM_{10} continue to be below the relevant air quality objectives at all locations..

$PM_{2.5}$ monitoring in the borough using type approved equipment (Palas FIDAS) began in October 2022. While to date there is only one year of valid data it suggests that the UK $PM_{2.5}$ standard is being met, with concentrations in 2023 around 8 µg m^{-3}.

[7] Particulate Matter is a mixture of small particles which are usually described by their size. PM_{10} are particles below 10 micrometres in diameter and $PM_{2.5}$ are below 2.5 micrometres (approximately 30 times smaller than the width of a human hair) and Ultrafine Particles are below 0.1 micrometres. The larger particles can penetrate into the upper airways, while $PM_{2.5}$ can penetrate deeper into the lungs, ultrafines have the ability to penetrate tissue and be absorbed into the bloodstream and even pass into the brain.

To date RBBC has postponed revoking its existing AQMAs as based on past experience, if an AQMA is revoked too early it may need to be redeclared. Therefore before considering the revocation of an AQMA the authority is looking for the following:

- Clear evidence of a long-term downward trend in pollutant concentrations.
- Ideally concentrations of nitrogen dioxide below 32 µg/m^3 (20 % below the objective) for a period of five years – to allow for any modelling / measurement uncertainties.
- No potential future plans for further development that may impact air quality within the AQMA e.g. increasing the number of road lanes, runways, or other developments that would lead to an increase in emissions of the pollutant of concern.

The council is aware of DEFRA's criteria i.e. at least 10 % below the objective for a period of three years, but has experienced issues in the past with adopting this approach, and are also conscious of the impact that the COVID pandemic has had both on traffic patterns and also on air travel which is a significant source of pollution within the Horley AQMA. With this in mind, RBBC has retained its AQMAs in Horley and Hooley hence this combined AQAP&S includes measures directed specifically at these two AQMAs.

Within the former AQMAs, monitoring will continue to check that pollution levels remain on a downward trend, as has been the case in previously revoked AQMAs.

Nitrogen dioxide concentrations in 2022 and 2023 within and close to the Horley and Hooley AQMAs are illustrated by Figure 1 and 2 and Figure 4 and 5. All monitoring sites except RB148 are representative of relevant exposure, and all measured concentrations are below the objective of 40 µg/m^3. The maximum measured concentration in Horley in 2022 was 32.5 µg/m^3, whilst in Hooley it was 36.3 µg/m^3 (27.3 µg/m^3 when corrected for distance to the nearest receptor). Trends are included through 3-year rolling averages as shown in Figure 3 and Figure 6.

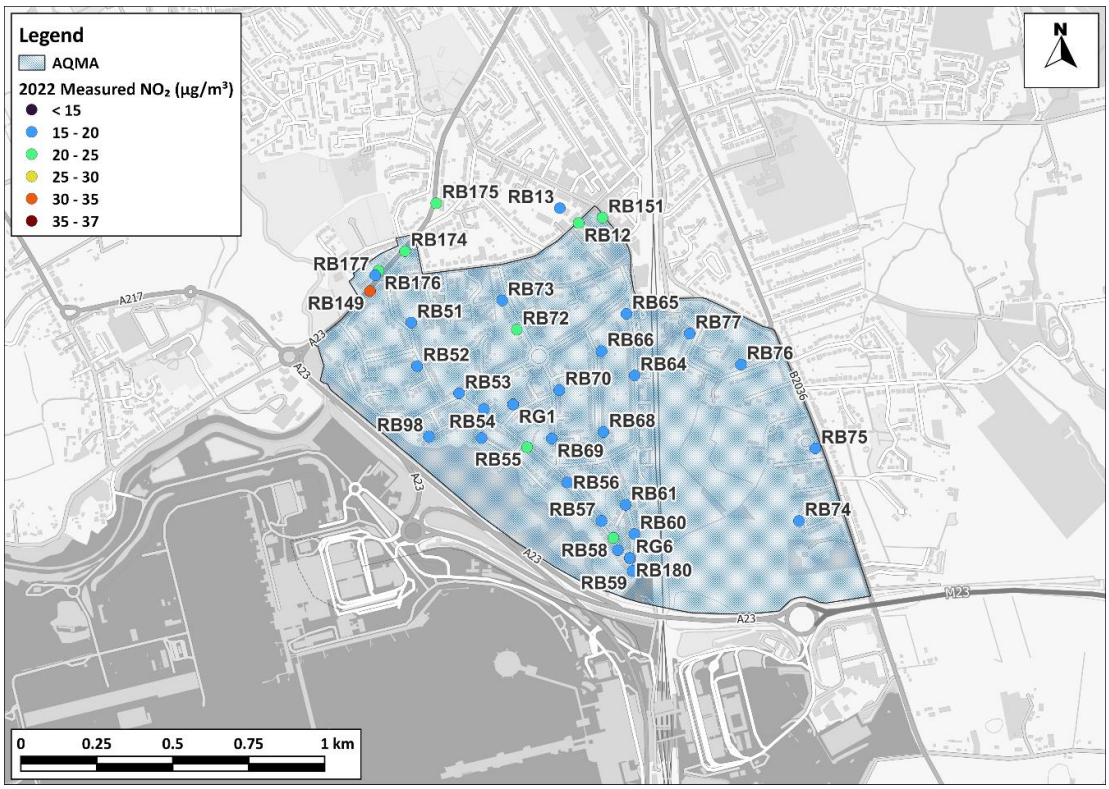

Figure 1: 2022 Annual Mean Nitrogen Dioxide Concentrations - Horley AQMA

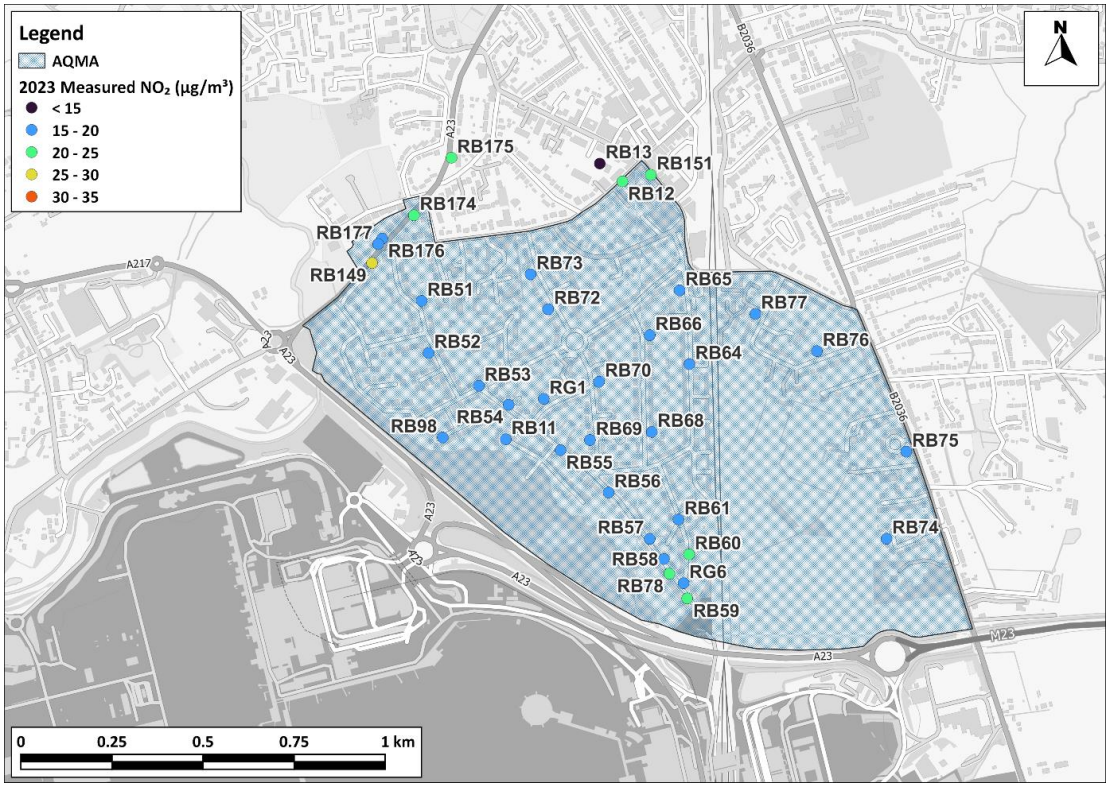

Figure 2: 2023 Annual Mean Nitrogen Dioxide Concentrations - Horley AQMA

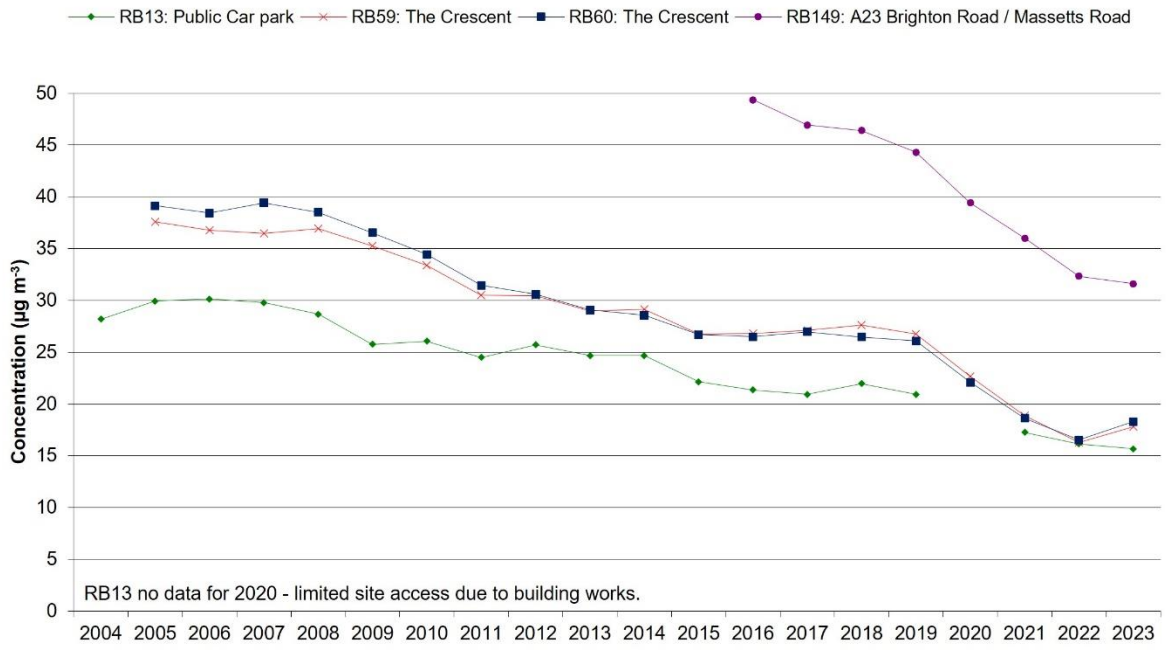

Figure 3: Three Year Rolling Mean Nitrogen Dioxide - Horley AQMA

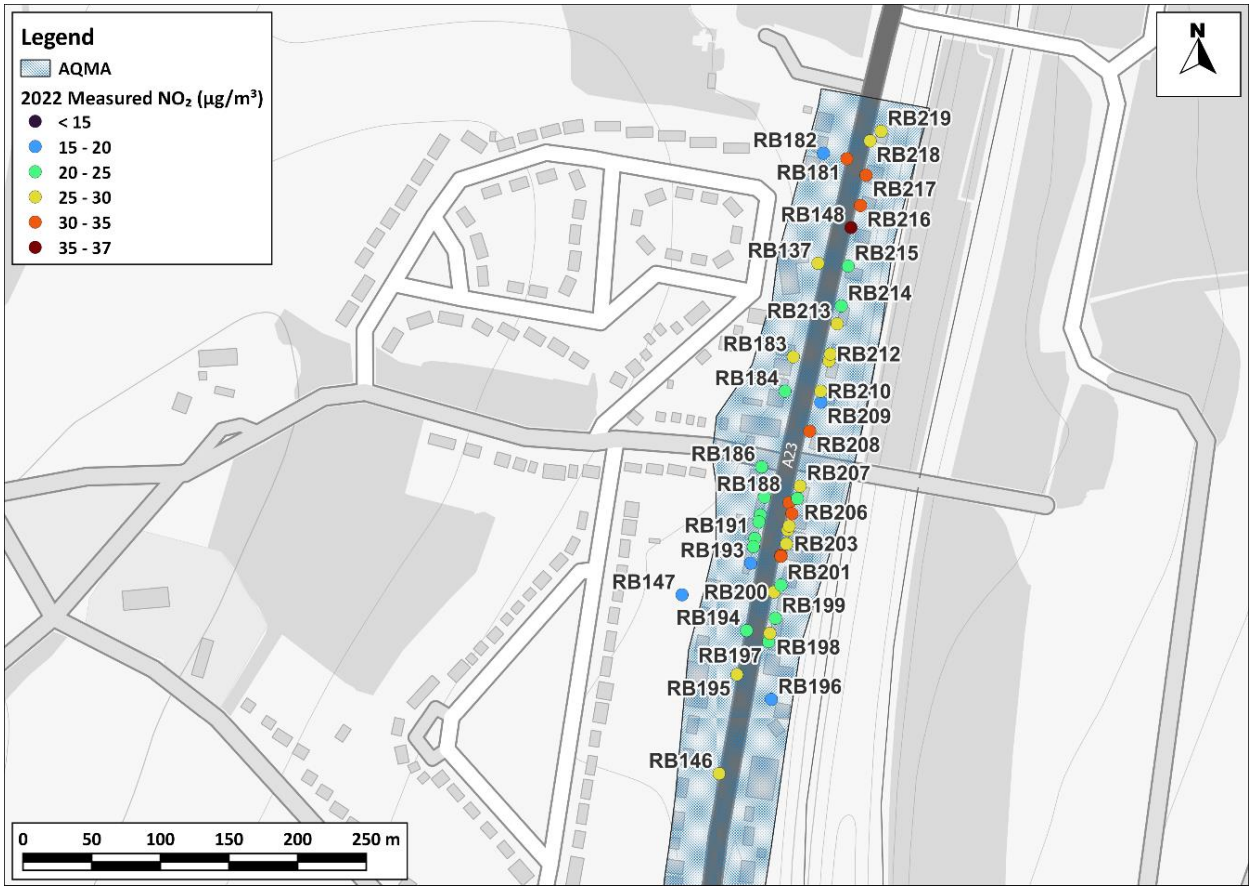

Figure 4: 2022 Annual Mean Nitrogen Dioxide Concentrations - Hooley AQMA

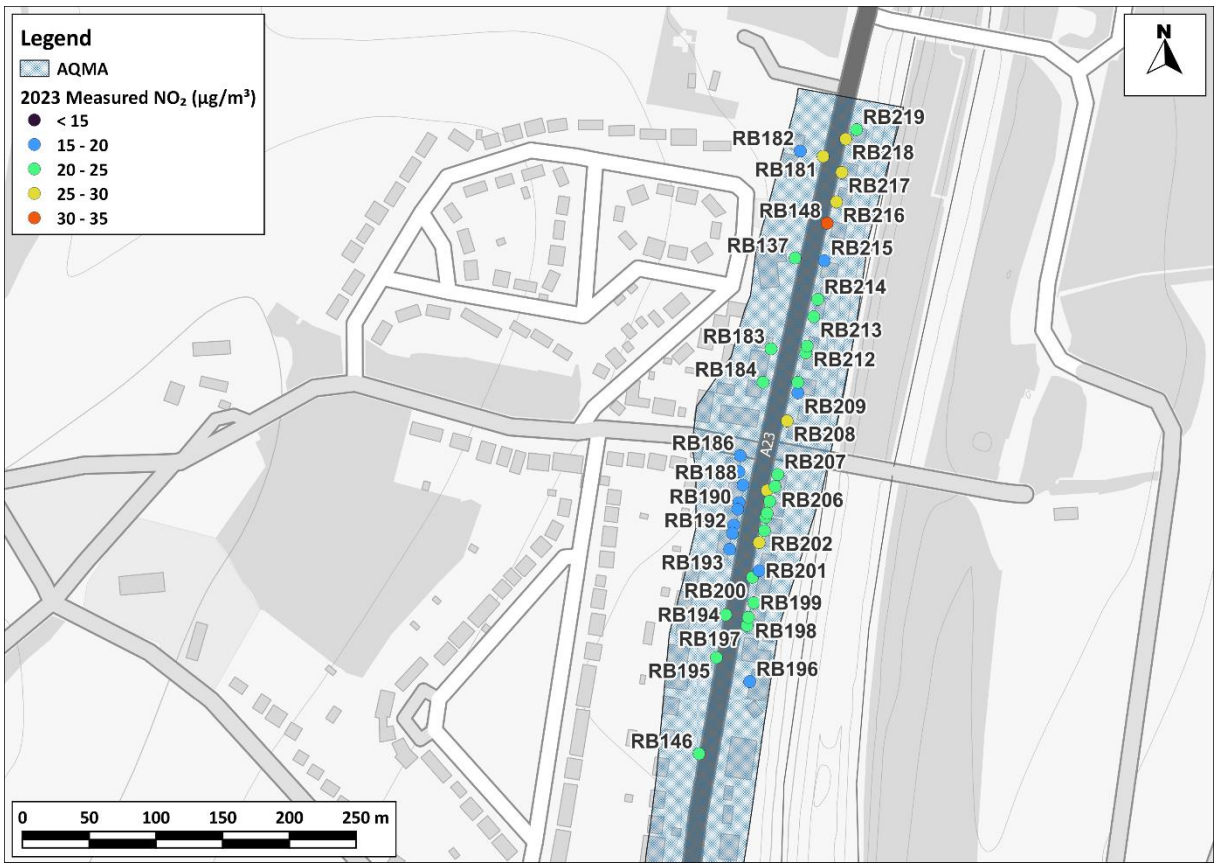

Figure 5: 2023 Annual Mean Nitrogen Dioxide Concentrations - Hooley AQMA

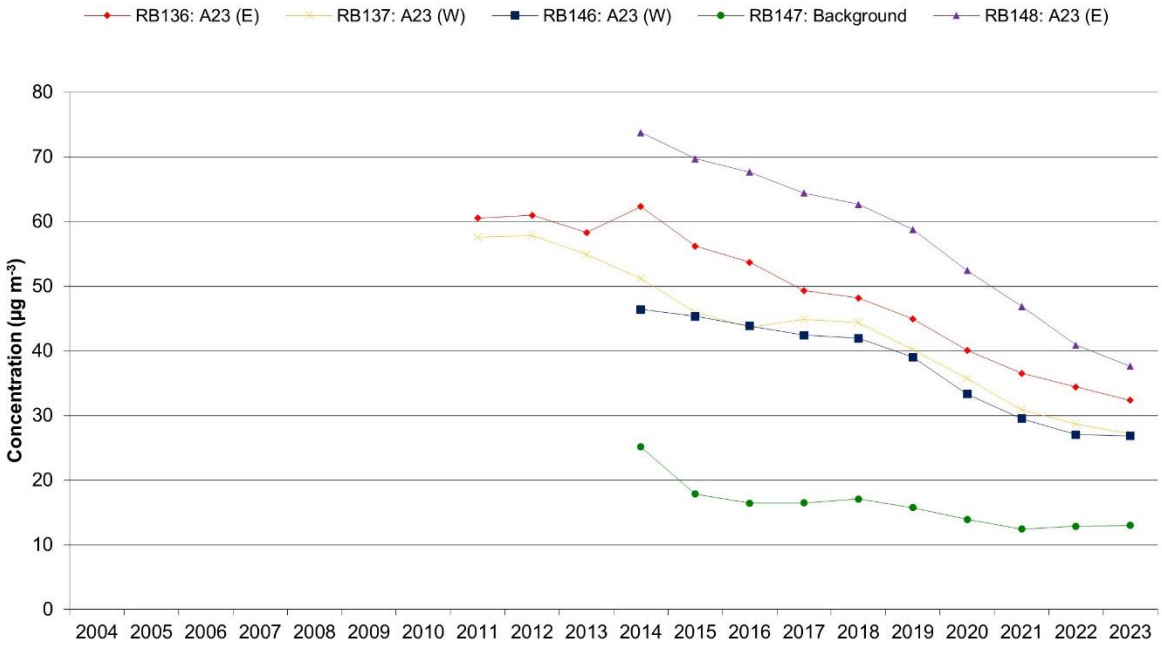

Figure 6: Three Year Rolling Mean Nitrogen Dioxide - Hooley AQMA

2.3 Ultrafine Particles (UFP)

Particle concentrations traditionally have been measured using a mass based system, and particle measurements made around Gatwick within the Horley AQMA are no exception to this. These measurements focus on particles under 10 µm in diameter (strictly aerodynamic diameter) known as PM_{10}, and more recently $PM_{2.5}$, as these particles are deposited deep down inside the lungs.

However, research over the past 15 plus years has consistently indicated that the finer particulate fractions, including particles under 0.1 µm in diameter known as ultrafines, tend to have the largest biological effects especially when derived from combustion sources.

In view of this the council undertook some preliminary monitoring of ultrafines - a quick 'look/ see' study - in December 2011 over a single day. The results of this work suggested that residents within the Horley AQMA were exposed to significantly higher levels of ultrafine particles than residents living elsewhere in the borough, although the exposures in Horley on the day were no higher than those seen at a central London roadside site.

However this initial work along with studies elsewhere in the world[8,9] indicated that a longer term initial study was needed in Horley to look at variations in ultrafine particle concentrations and size distributions over time and by wind direction, and also for the equipment used to be comparable to that used on the UK national network so that measurements made in Horley could be compared on a like for like basis with data from the national network to help put the results into context.

Gatwick Airport Limited (GAL) were approached to fund such a study in 2012 (and onwards to date) but felt unable to contribute to such work as there was no UK standard for ultrafines. As a consequence, the Council undertook its own monitoring in conjunction with Kings College, Imperial College, and Leicester University in 2018 / 19 to begin to examine if

[8] Zhu, Y., *et al.* (2011) Aircraft emissions and local air quality impacts from takeoff activities at a large International Airport. *Atmospheric Environment* 45 pp.6526 – 6533. https://doi.org/10.1016/j.atmosenv.2011.08.062
[9] Hsu, H., *et al.* (2012) The relationship between aviation activities and ultrafine particulate matter concentrations near a mid-sized airport. *Atmospheric Environment* 50 pp.328 – 337. https://doi.org/10.1016/j.atmosenv.2011.12.002

residential exposure to ultrafine particles in the vicinity of Gatwick was significant, given the increasing evidence of the impact of ultrafine particles on health and GAL's on-going unwillingness to examine the potential extent of the issue on residents around Gatwick.

While there is no UK legislated standard for UFP the WHO did issue guidance[10] in 2021 defining 'High' and 'Low' UPF exposures in terms of both hourly exposures and daily exposures.

The main outcomes of the 2018/19 monitoring programme as presented to the steering group of the airport consultative committee in June 2019, June 2020 and June 2021 were:

a) that despite being in the middle of a residential housing estate 350m from the nearest part of the airport, ultrafine particle concentrations when winds were off airport were comparable to those at a kerbside site 1.5m from a six lane highway in central London.

b) over the 9 month period of sampling for over 50 % of the days residents were exposed to ultrafine particle concentrations that were 'High' on either an hourly or daily basis while zero days were classed as 'Low' based on WHO guideline values.

c) on days matched to a similar UPF monitor located kerbside next to a 6 lane road in central London 216 hours were classed as high in the residential estate 350 m from the airport boundary, compared to 111 hours kerbside in London.

While the initial monitoring took place at the RG1 site towards the centre of the Horley Gardens Estate, additional monitoring undertaken as part of the research project suggests that residents' exposure to ultrafine particles closer to the airport is higher still.

The health impacts of ultrafine particulate exposure are still being examined although research around Schiphol Airport[11] suggests children suffer more respiratory complaints on days with high exposures to ultrafine particles, while researchers in Canada[12] found a significant association between ultrafine particle exposure in general and an increase in

[10] WHO (2021) Global air quality guidelines: particulate matter ($PM_{2.5}$ and PM_{10}), ozone, nitrogen dioxide, sulfur dioxide and carbon monoxide. ISBN 978-92-4-003421-1. https://apps.who.int/iris/handle/10665/345329 .
[11] Janssen, N.A.H. *et al.* (2019) Research into the health effects of short-term exposure to ultrafine particles in the vicinity of Schiphol Airport. RIVM report 2019-0084 https://www.rivm.nl/en/bibcite/reference/323511
[12] Weichenthal, S. *et al.* (2020) Within-City Spatial Variations in Ambient Ultrafine Particle Concentrations and Incident Brain Tumors in Adults. *Epidemiology* v.31(2) pp.177-183.

incidence of brain tumours in adults. Further work[13] has also been undertaken in California around Los Angles International Airport which has also found an increased risk of brain cancer associated with airport related ultrafine particles.

Guidance from DEFRA[14] states that: '*In addition to NO_2, there is growing evidence of the health impacts associated with Ultra-Fine Particulates (UFP) linked to airport activities. Measurements of UFP close to airports suggest that aircraft are an important source of UFP that can result in elevated concentrations tens of km from airports. Mobile UFP measurements from non-UK locations also suggest that UFP concentrations can be elevated due to landing aircraft. Local authorities should be aware of UFP as a potential pollutant and consider it when preparing Air Quality Plans/Strategies alongside airport operators.*

The following points support further investigation of UFP concentrations in the Horley AQMA:

- the very high levels of ultrafine exposures seen within the Horley AQMA;
- the growing research base suggesting a health impact;
- the significant forecast growth in aircraft movements at Gatwick both with and without the airport's planned use of the emergency runway; and
- the airports unwillingness to fund monitoring in a residential location at Gatwick (in the absence of standards) in its Development Consent Order submission.

The council, in the first instance, will look to secure long term funding to purchase and operate equipment to monitor ultrafine particle number concentrations and also the size distribution of those particles (which is critical in determine the particle source) within the Horley AQMA. The aim at this stage is to understand the long term trends in exposure, and how these change with airport growth and the introduction of biofuels, and to create a high quality data set for use in research given that no UK airport currently monitors ultrafine particle concentrations and size distribution in a residential setting.

Further actions are then planned to follow from this once the nature of the problem is better understood, and the equipment is in place to assess the success or otherwise of the planned measures.

[13] Wu, A. *et al.* (2021) Association between Airport-Related Ultrafine Particles and Risk of Malignant Brain Cancer: A Multiethnic Cohort Study. *Cancer Res.* v.81(16) pp.4360–4369.
[14] DEFRA (2022) Local Air Quality Management Technical Guidance (TG22) August 2022.p382 para 7.19

3 Reigate and Banstead'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 Organisation 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) has 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[15] (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 lifetime 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)[16].

As discussed in section 2.1 the health impacts of air pollution do not stop just because a legal limit / objective level has been met, and there are health risks associated with a consistent low level of exposure. The Council's own work[17] in 2019 found that despite the air quality standards being met across the majority of the borough the health cost of air pollution in 2017 was in the region of £38 to £45 million.

More recently the Public Health Outcome Framework (PHOF) for England which in part examines the burden of ill health resulting from poor air quality found (PHOF Indicator D01) that 5.6% of deaths in Reigate and Banstead during 2021 were attributable to particulate air

[15] https://www.gov.uk/government/publications/nitrogen-dioxide-effects-on-mortality/associations-of-long-term-average-concentrations-of-nitrogen-dioxide-with-mortality-2018-comeap-summary
[16] https://www.gov.uk/government/publications/clean-air-strategy-2019
[17] CERC (2019) Detailed Air Quality Modelling and Source Apportionment for Reigate and Banstead Borough Council.

pollution ($PM_{2.5}$), which is slightly lower than for Surrey as a whole (5.8%) but slightly higher than the England average (5.5%)[18].

This current AQAP&S is intended to complement work underway at County level where the Joint Strategic Needs Assessment (JSNA)[19] will have a section on air quality. The JSNA informs the Health and Wellbeing Strategy (HWS)[20] which is a strategy for meeting the needs identified in the JSNA.

3.2 Planning and Policy Context

3.2.1 Reigate and Banstead Five Year Plan

Reigate and Banstead 2025[21] explains the Council's priorities for the 5 years between 2020 and 2025, and how services will be delivered to those living, working and spending time in the borough. It includes commitments to, "*work with partners including Surrey County Council and the Local Enterprise Partnership to tackle areas of poor air quality across the borough and promote the use of low emission vehicles*" and "*seek to reduce waste and emissions across our own estate, assets and activities, and use natural resources more efficiently*". The corporate plan for the period 2025 to 2030 (Reigate and Banstead 2030)[22] under objective 1.1.2 and environmental sustainability states, '*Maintain and improve local environmental quality through environmental health regulation including air quality and ground contamination*'.

3.2.2 Reigate and Banstead Environmental Sustainability Strategy

The Five Year Plan, and the ambition to reduce climate change emissions is supported by an Environmental Sustainability Strategy[23] in which energy and carbon is one of three main themes. This acknowledges that initiatives around promoting active travel and reducing gas

[18] Data available at https://fingertips.phe.org.uk/profile/public-health-outcomes-framework/data#page/1/gid/1000043/pat/6/par/E12000008/ati/301/are/E07000211/yrr/3/cid/4/tbm/1
[19] https://www.surreyi.gov.uk/jsna/
[20] https://www.healthysurrey.org.uk/about/strategy
[21] Reigate & Banstead 2025: Our Five Year Plan (2020) https://www.reigate-banstead.gov.uk/info/20205/plans_and_policies/280/reigate_and_banstead_2025#:~:text=Our%20five%20year%20plan&text=This%20includes%20things%20like%20how,towns%2C%20villages%20and%20local%20businesses.
[22] Reigate & Banstead 2030: Our Corporate Plan: The next five years (2025). https://www.reigate-banstead.gov.uk/downloads/file/7388/reigate_and_banstead_2030_-_draft_corporate_plan
[23] Reigate and Banstead (2024) Environmental Sustainability Strategy https://www.reigate-banstead.gov.uk/downloads/file/7369/environmental_sustainability_strategy_2024

consumption will improve air quality as well as reduce greenhouse gas emissions. As a result, there are a number of actions in the associated Environmental Sustainability Action Plan[24] that will reduce emissions of local air pollutants and these are identified within the Measures table, where applicable.

Progress with the Environmental Sustainability Strategy is reported annually to the Executive Committee.

3.2.3 Local Plan

The Reigate and Banstead Local Plan: Core Strategy[25] was adopted in July 2014 and reviewed in 2019[26], and within this there is one policy which refers to air quality. Core Strategy (CS) 10 refers to sustainable development and states that:

> *"Development will:*
>
> *…8. Be designed to minimise pollution, including air, noise and light, and to safeguard water quality…"*

The Reigate & Banstead Development Management Plan[27] was adopted in 2019. Policy DES9 for Pollution and Contaminated Land states that:

> *"1. For all types of development, across the Borough:*
>
> *Development will only be permitted where it can be demonstrated that (on its own or cumulatively) it will not result in a significant adverse or unacceptable impact on the natural or built environment (including sensitive habitats); amenity; or health and safety due to fumes, smoke, steam, dust, noise, vibration, smell, light or any other form of air, land, water or soil pollution. Where there would be potential adverse effects from pollution and adequate mitigation cannot be provided, development will not normally be permitted. This includes pollution from construction and pollution predicted to arise during the life of the development. Particular attention should be paid to development within Air Quality Management Areas.*
>
> *New development will not normally be permitted where existing fumes, smoke, steam, dust, noise, vibration, smell, light or any other form of air, land, water or soil pollution are unacceptable and there is no reasonable prospect that these can be*

[24] Reigate & Banstead Environmental Sustainability Strategy: Action Plan (2024) https://www.reigate-banstead.gov.uk/downloads/file/7370/environmental_sustainability_strategy_action_plan_2024
[25] Reigate and Banstead Local Plan: Core Strategy. Adopted July 2014
[26] Review of the Reigate & Banstead Local Plan: Core Strategy. June 2019
[27] Reigate & Banstead Local Plan Development Management Plan. Adopted September 2019

mitigated against to satisfactory levels. This is particularly relevant for sensitive development such as residential.

….

Measures to reduce air pollution will be encouraged.

2. Within areas of poor air quality (as defined by the presence of Air Quality Management Areas) development must be designed to minimise the occupants' or users' exposure to air pollution, both internally and externally."

In addition, Reigate & Banstead Borough Council has a Supplementary Planning Document (SPD) dealing with Climate Change and Sustainable Construction[28], which has some requirements which provide a positive impact on air quality.

3.2.4 Local Transport Plan

Surrey County Council's fourth Local Transport Plan[29], (LTP4) sets out plans for Surrey's transport network from 2022 up to 2032 and beyond, including changes required to achieve net zero emissions by 2050. LTP4 sets out the following key policies:

- Active travel and personal mobility;
- Public and shared transport;
- Promoting zero emission vehicles; and
- Planning for Place.

In the short-term (to 2025) the LTP measures will focus on achieving a 'green' and 'healthy' recovery of transport choices after Covid-19, and taking action and strengthening transport links to deliver the planning, development, design, public space management and digital connectivity aspects of the LTP4. It also includes building on the increased interest in walking and cycling, rebuilding trust in public transport, accelerating EV uptake, continuing to build on existing good practice, and delivery of relevant schemes. All of these measures will reduce local air quality emissions and therefore assist with the delivery of this AQP&S.

[28] Reigate & Banstead Borough Council Climate Change and Sustainable Construction SPD. Adopted 16 September 2021
[29] https://www.surreycc.gov .uk/roads-and-transport/policies-plans-consultations/transport-plan

3.2.5 Surrey Climate Change Strategy

Surrey's Climate Change Strategy 2020[30] and the more recent Climate Change Adaptation and Resilience Strategy 2023[31] (known as "Surrey Adapt") set out Surrey's collective approach with the Boroughs and Districts to reducing greenhouse gas emissions and adapting to climate change.

County Council Emissions

In relation to County Council emissions, the Climate Strategy acknowledges that with direct control over its estate and operations, it has the potential to have significant influence in driving emissions down at a faster rate than other sectors of the economy. Strategic Priority 2 (SP2), that all county council owned vehicles, including SCC-owned bus fleet, to be zero carbon by 2030 or sooner is the most relevant to this Air Quality Action Plan and Strategy.

Transport

In relation to transport and air quality the county strategy takes a three-pronged approach of; reducing journeys, shifting to an increased use of public and active transport modes, and developing zero emission vehicle options. This approach is consistent with the aims of this AQAP&S, hence collaboration with Surrey County Council's transport team in the preparation of this document. There is a target for 60% emission reduction in the Transport sector by 2035 against 'Business As Usual' as a minimum. The County Council's strategic priorities are:

- Strategic Priority 1 (SP1) - Prioritise investment in place-based development that creates well-connected communities close to high quality places, spaces and services to reduce the number and length of car journeys for all residents.
- Strategic Priority 2 (SP2) - Invest in initiatives and infrastructure to increase the uptake of walking, cycling and public transport, alongside schemes to reduce reliance on the car for example ultra-low emission zones, pedestrianisation and car-free zones.

[30] Surrey's Climate Change Strategy 2020 https://www.surreycc.gov.uk/community/climate-change/what-are-we-doing/climate-change-strategy/2020
[31] Surrey's Climate Change Adaptation and Resilience Strategy https://www.surreycc.gov.uk/community/climate-change/what-are-we-doing/adaptation-and-resilience/adaptation-strategy

- Strategic Priority 3 (SP3) - Invest in and support the development of the infrastructure required to support the move to zero emission vehicles for journeys that cannot be made on foot, by bicycle or public transport.

Housing and Planning

The county council strategy focuses on improving the energy efficiency of buildings, which would reduce NOx emissions from gas boilers. Additionally, Strategic Priority 3 (SP3) minimises transport emissions by promoting residential development that is sustainably located and allows safe and easy access for residents to existing services and transport hubs.

3.2.6 Future Developments

Gatwick

Gatwick Airport (operated by Gatwick Airport Limited, GAL) is near to the Horley AQMA. The airport is currently seeking to expand operations (via a development consent order - DCO) from 285,000 movements and 46.5 million passengers per annum in 2019, to 333,000 movements and 61.3 mppa by 2029, rising to 381,000 movements and 72.3 million passengers per annum by 2032 i.e. an increase of 33 % in aircraft movements and a 55 % increase in passenger numbers by 2032 compared to 2019. If given consent, this will lead to an increase in NOx and PM emissions from both aircraft and traffic on the local road network compared to that currently forecast.

GAL has produced an air quality action plan for the airport related emissions[32] associated with its planned development consent order (DCO), but this consists simply of a list of measures that it is considering with no implementation dates nor any indication of the potential reduction in emissions or concentrations such a measure might produce.

The plan also assumes that measures such as the introduction of SAF (sustainable aviation fuels) will reduce NOx emissions despite evidence to the contrary[33], and with its plans for hydrogen it is unclear if this is being used in a fuel cell to produce electricity or being burnt. If

[32] GAL DCO Submission to Planning Inspectorate: Air Quality Action Plan (Annex 5 to draft s106) REP6-064 from pdf page 83). https://infrastructure.planninginspectorate.gov.uk/wp-content/ipc/uploads/projects/TR020005/TR020005-002412-DL4%20-%20JLA%20D4%20submissions%20Air%20Quality.pdf

[33] ACI – Integration of sustainable aviation fuels into the air transport system – p.15.

hydrogen is being burnt this will have little to no impact on NOx emissions, and where the thermal / energy performance is optimised this could lead to higher NOx emissions than carbon based fuels.

Therefore measures in this AQAP&S include further working with GAL to reduce aircraft and airport related traffic emissions, as well as reducing pollution from non-airport related sources of NOx pollution which are primarily focused on road transport.

The Council will continue to discuss with the airport the need for a clear set of measures to reduce residents' exposure to airport related pollution, including airport related road traffic pollution, as part of the DCO process and in general. This is in line with LAQM Policy Guidance (PG(22), paragraph 9.53) where airports are encouraged to develop their own Air Quality Plans or Strategies. These should include how the airport will work with local authorities to improve air quality, especially where emissions from travel to and from the airport contributes to pollution concentrations within an AQMA, as is the case with the Horley AQMA.

Trunk Roads

Both the Horley and Hooley AQMAs have sections of the A23 which are managed by National Highways. Horley comes under Area 4 and Hooley Area 5. Both area teams have been consulted with directly, and any future schemes discussed. Measures are included in Table 5.1 and Table 5.2 for Horley and Hooley respectively. There are no immediate funded plans on either section of the A23, but potential future developments are outlined later in this document.

3.3 Source Apportionment

The AQAP&S measures presented in this report are intended to be targeted towards the predominant sources of emissions within Reigate and Banstead Borough Council's area. Two source apportionment studies have been undertaken, which are used to support this AQAP&S. The first was part of a Surrey wide modelling exercise undertaken by CERC with a baseline of 2017 and the second has been derived from modelling undertaken by Gatwick Airport for the DCO.

3.3.1 Surrey-wide Modelling

Figures 7 and 8 show sources in 2017 at diffusion tube sites in Horley and Hooley, for NO_2 and $PM_{2.5}$, showing both overall sources and a further breakdown of road traffic emissions.

Figure 7 shows that large industrial sources contributed a very limited amount (< 1 µg/m^3) to NO_2 concentrations at measurement locations within both the Horley and Hooley AQMAs. Background sources of NO_2 were also very similar across both the AQMAs, accounting for approximately 17 µg/m^3 at all locations. The largest difference in the source apportionment between the two areas is the relative contributions of 'road' and 'other' sources.

The largest source of NO_2 in Hooley was road traffic, accounting for 44 µg/m^3 at RB136 in 2017, while 'other' sources contributed 4 µg/m^3. Of the road traffic component, the largest contribution to NO_2 in Hooley is from diesel cars (13 µg/m^3, on average) and LGVs (11 µg/m^3, on average).

Conversely, in Horley there is larger contribution from 'other' sources to NO_2 concentrations. For example, 'other' sources accounted for 9.3 µg/m^3 at RB149 in Horley, while road sources accounted for 18.6 µg/m^3. This is to be expected as airport emissions are included in the 'other' category.

Figure 7: Source Apportionment for NO_2 derived from modelling undertaken by CERC

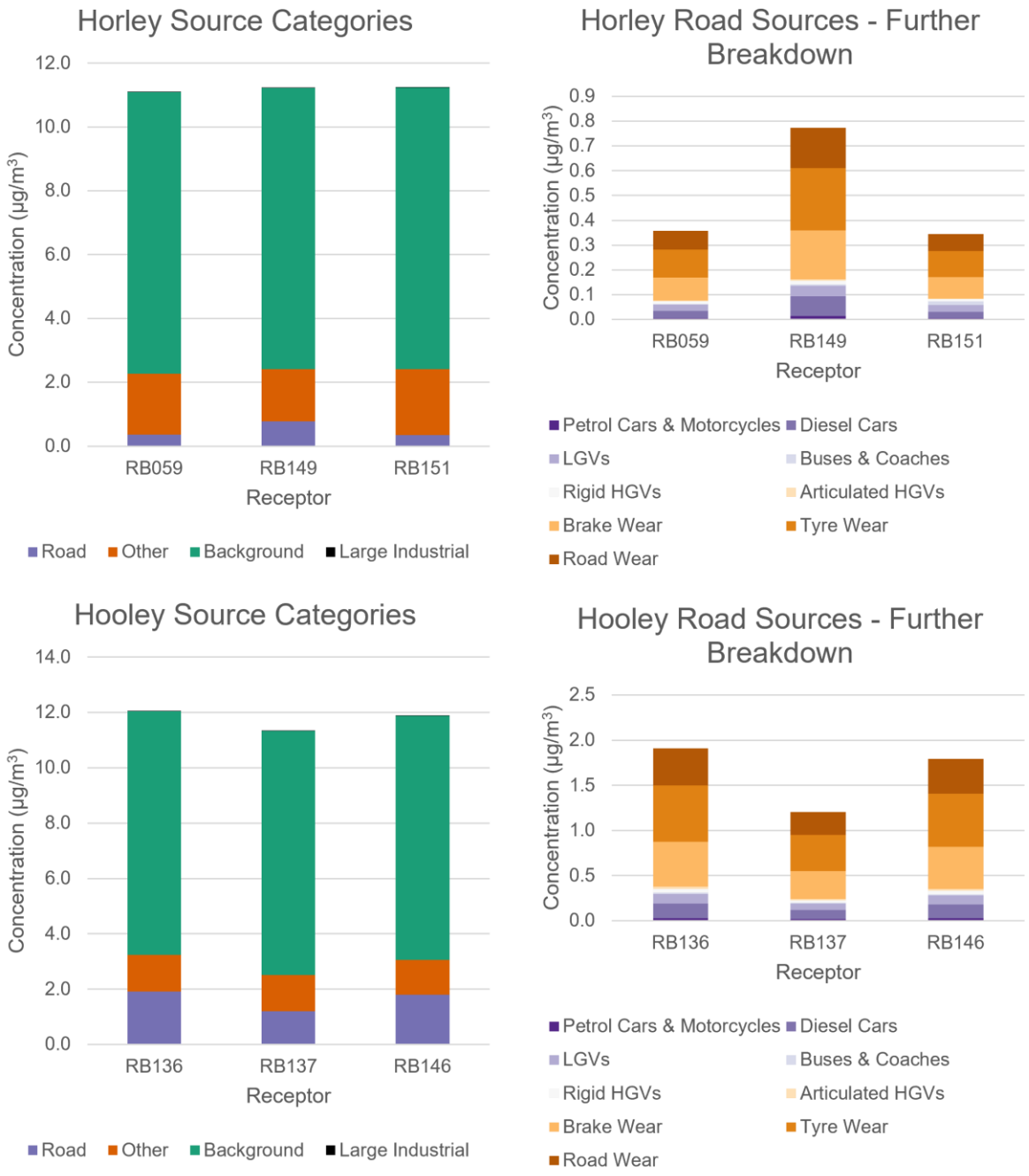

Figure 8: Source Apportionment for $PM_{2.5}$ derived from modelling undertaken by CERC

Figure 8 shows that the distribution of $PM_{2.5}$ sources across Hooley and Horley are similar. The largest source of $PM_{2.5}$ is the background, contributing 9 µg/m^3 in both areas and reflecting the transboundary nature of this pollutant. In Horley, 'other' sources contribute up to 2 µg/m^3, while road sources contribute less than 1 µg/m^3, and large industrial sources contribute less than 0.1 µg/m^3 to $PM_{2.5}$ concentrations. In Hooley, road sources contribute up to 2 µg/m^3 to $PM_{2.5}$ concentrations, of which the largest contribution are from tyre wear, brake wear, and road wear, followed by diesel cars.

3.3.2 Gatwick Airport Modelling

The second source apportionment exercise has been derived from modelling undertaken by Gatwick Airport for the Development Consent Order (DCO). The modelling was undertaken with a baseline of 2018 and specifically splits out airport operations and airport related traffic. This modelling is useful for looking at changes in sources over time, and the following figures show both average source apportionment for the two AQMAs (for NOx and $PM_{2.5}$) as well as at specific receptors. The 'do minimum' (DM) scenario represents business as usual in the future, while the 'do something' (DS) scenario modelled the impact of expanding Gatwick Airport's operations. The majority of the growth in flights and passenger numbers is predicted to be between 2029 and 2032 (beyond the timescale of this plan), at a time when the majority of improvements in terms of the road traffic fleet have happened. Hence proportionately (and in some cases as absolute concentrations), airport related emissions are predicted to rise into the future, unlike the majority of other sources of NOx and $PM_{2.5}$.

Figure 9 and Figure 10 show the average contributions of different sources across all receptors in the Horley and Hooley AQMAs for NOx and $PM_{2.5}$. Figure 9 shows onsite airport operations contribute to NOx concentrations in Horley AQMA to a much greater extent than in the Hooley AQMA, which would be expected based on proximity to the airport; Horley is adjacent to the airport whereas Hooley is approximately 15 km north. The contribution from onsite airport activities remains relatively constant into future years but a small increase is modelled in the 2032 DS scenario for receptors in Horley. The contribution to concentrations from road traffic associated with the airport is relatively similar across both AQMAs, which is forecast to decrease in the future, largely due to improvements in vehicle technology. Similarly, the contribution to concentrations from other road traffic is forecast to decrease between 2018 and 2032. Background NOx concentrations are also similar across both areas and are also forecast to decrease between 2018 and 2032.

Figure 10 shows background sources are by far the greatest contributor to $PM_{2.5}$ concentrations in both AQMAs. Background sources are forecast to decrease from 2018 to 2024, but then remain at a constant level. The next largest contributor to $PM_{2.5}$ concentrations is non-airport related road traffic, which is also anticipated to remain relatively constant between 2018 and 2032.

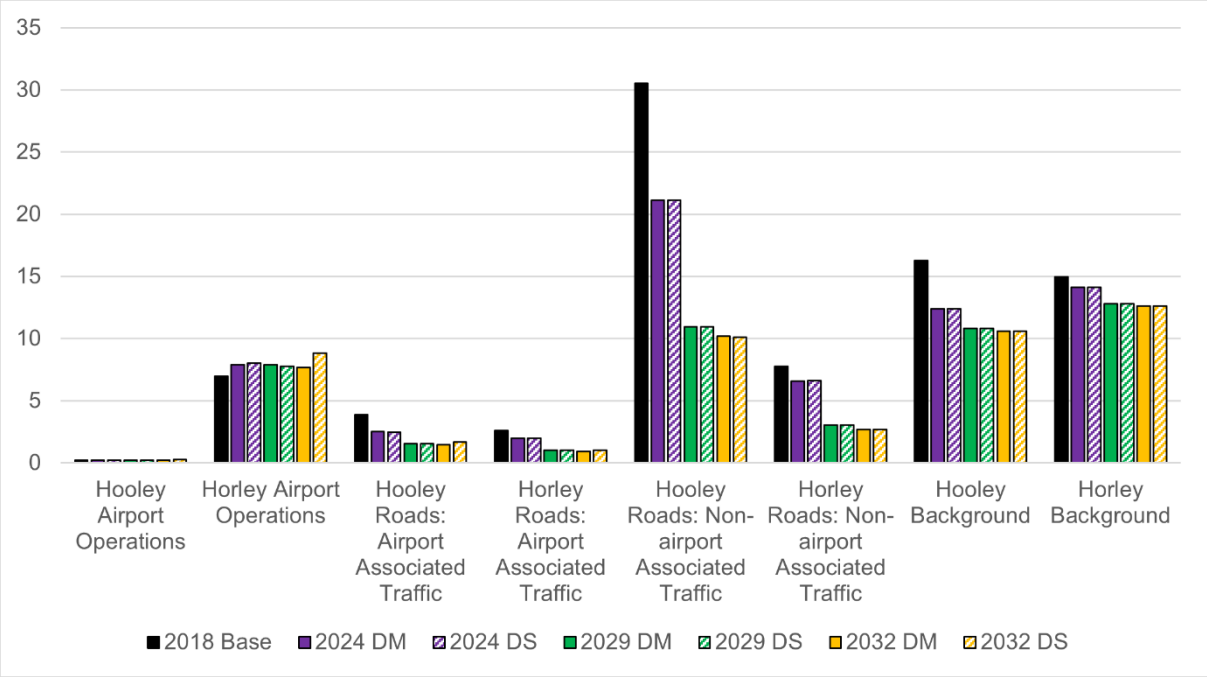

Figure 9: Average source apportionment for NOx (µg/m^3) derived from modelling undertaken by Gatwick Airport across all modelled receptors in Hooley and Horley AQMAs

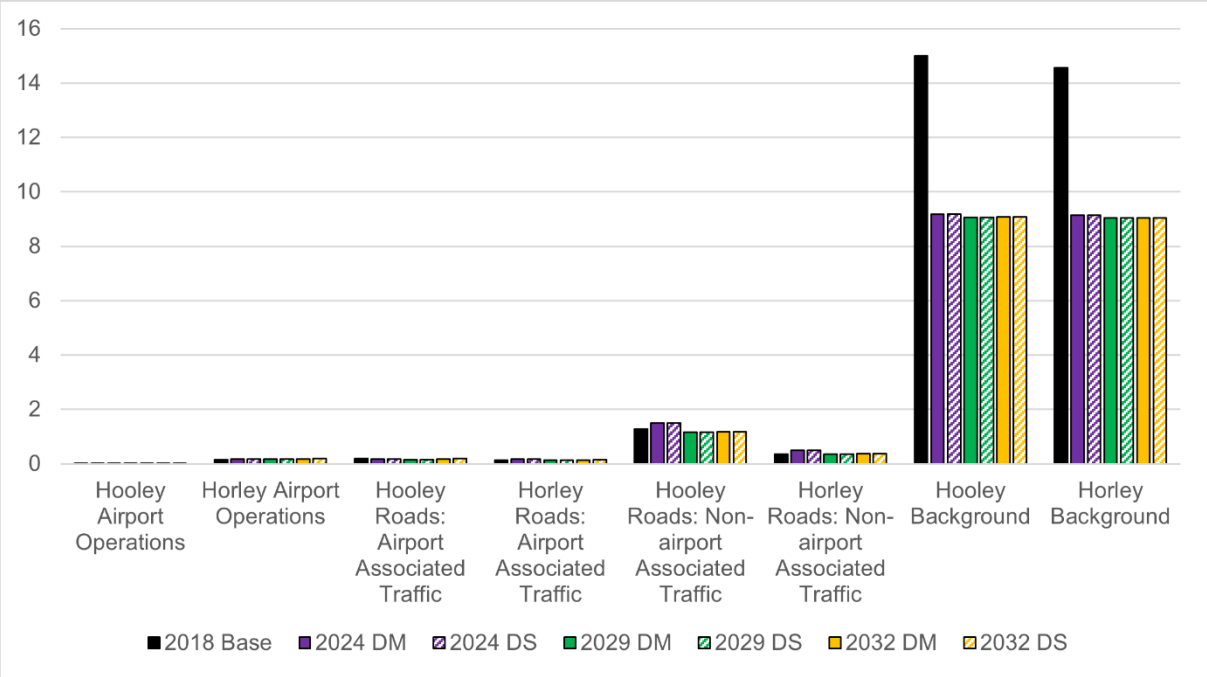

Figure 10: Average source apportionment for $PM_{2.5}$ (µg/m^3) derived from modelling undertaken by Gatwick Airport across all modelled receptors in Hooley and Horley AQMAs

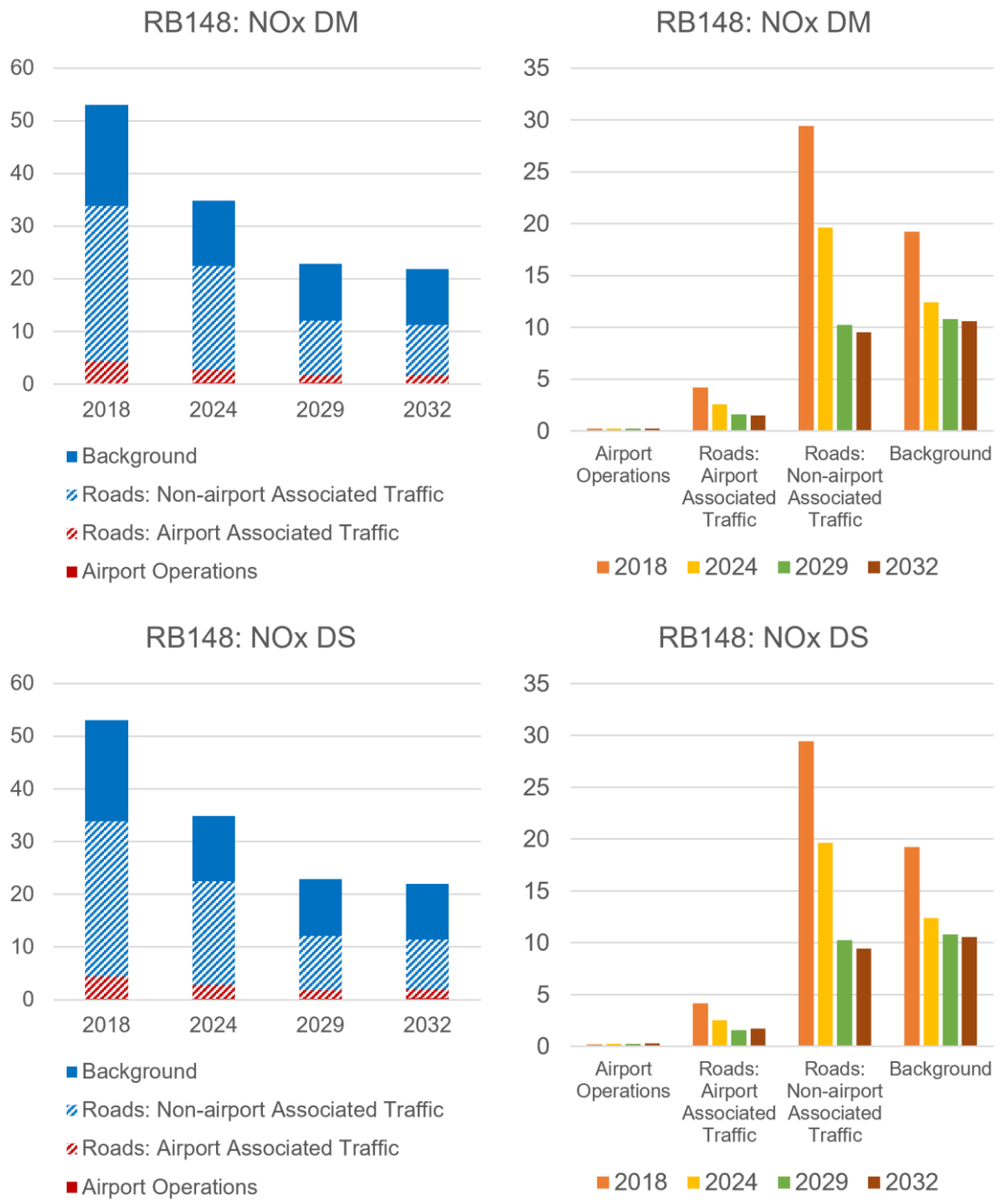

Figure 11: Source apportionment of modelled NOx concentrations (µg/m^3) at receptor RB148 (Hooley) in both the DM and DS scenarios derived from modelling undertaken by Gatwick Airport.

Figure 11 shows that the total NOx concentration at RB148 in Hooley is forecast to reduce from 2018 to 2032 in both the 'do minimum' and 'do something' scenarios. It is also clear that the largest contributions to NOx are from non-airport related sources. While the concentration of NOx is predicted to be elevated in the 'do something' scenario compared to the 'do nothing' scenario, the magnitude is less than 1 µg/m^3.

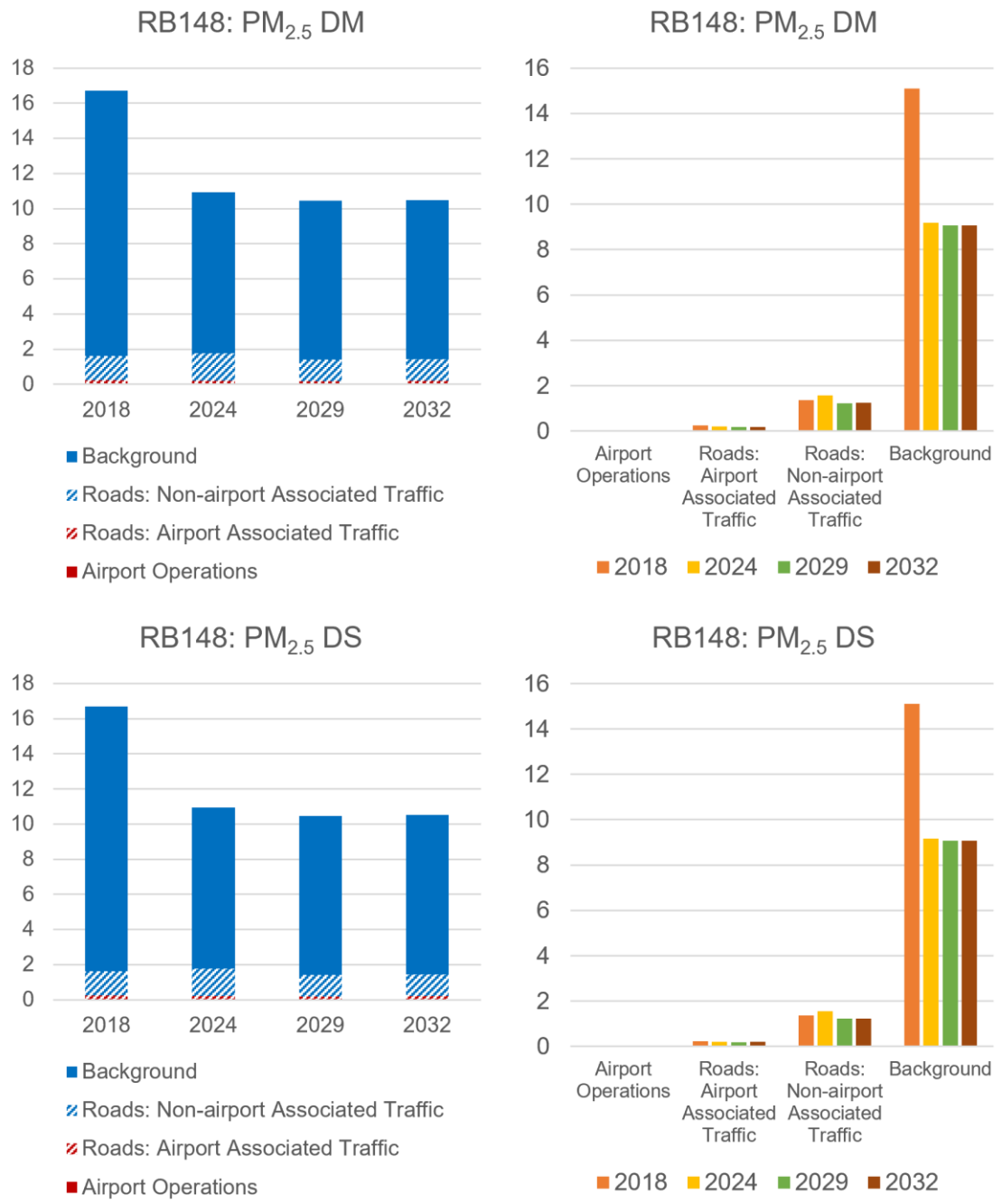

Figure 12: Source apportionment of modelled $PM_{2.5}$ concentrations (µg/m^3) at receptor RB148 (Hooley) in both the DM and DS scenarios derived from modelling undertaken by Gatwick Airport.

Figure 12 shows that $PM_{2.5}$ concentrations are predicted to decrease between 2018 and 2024 at RB148 in Hooley, largely due to a decrease in background concentrations, and then remain relatively stable at just over 10 µg/m^3 between 2024 and 2032. The total airport contributions to $PM_{2.5}$ in Hooley are less than 1 µg/m^3, as is the difference between the 'do minimum' and 'do something' scenarios in 2031 (less than 0.1 µg/m^3).

Figure 13: Source apportionment of modelled NOx concentrations (µg/m^3) at receptor ER5 (Horley) in both the DM and DS scenarios derived from modelling undertaken by Gatwick Airport.

Figure 13 shows that there is a considerable contribution to NOx concentrations from both onsite airport operations and from the road traffic associated with the airport at receptor location ER5 in Horley. In the 'do minimum' scenario, total NOx concentrations are predicted to decrease year on year between 2018 and 2032, due to decreases in background concentrations and road traffic (airport related and non airport related), despite an increase in NOx (2018 vs 2032) from onsite airport operations. In the 'do something' scenario, total NOx

concentrations are predicted to decrease between 2018 and 2029 but increase between 2029 and 2032. The decrease is largely accounted for by decreases in background concentrations and road traffic. While there is a small increase in NOx concentrations from road traffic associated with the airport between 2029 and 2032, the largest increase is seen in onsite airport operations.

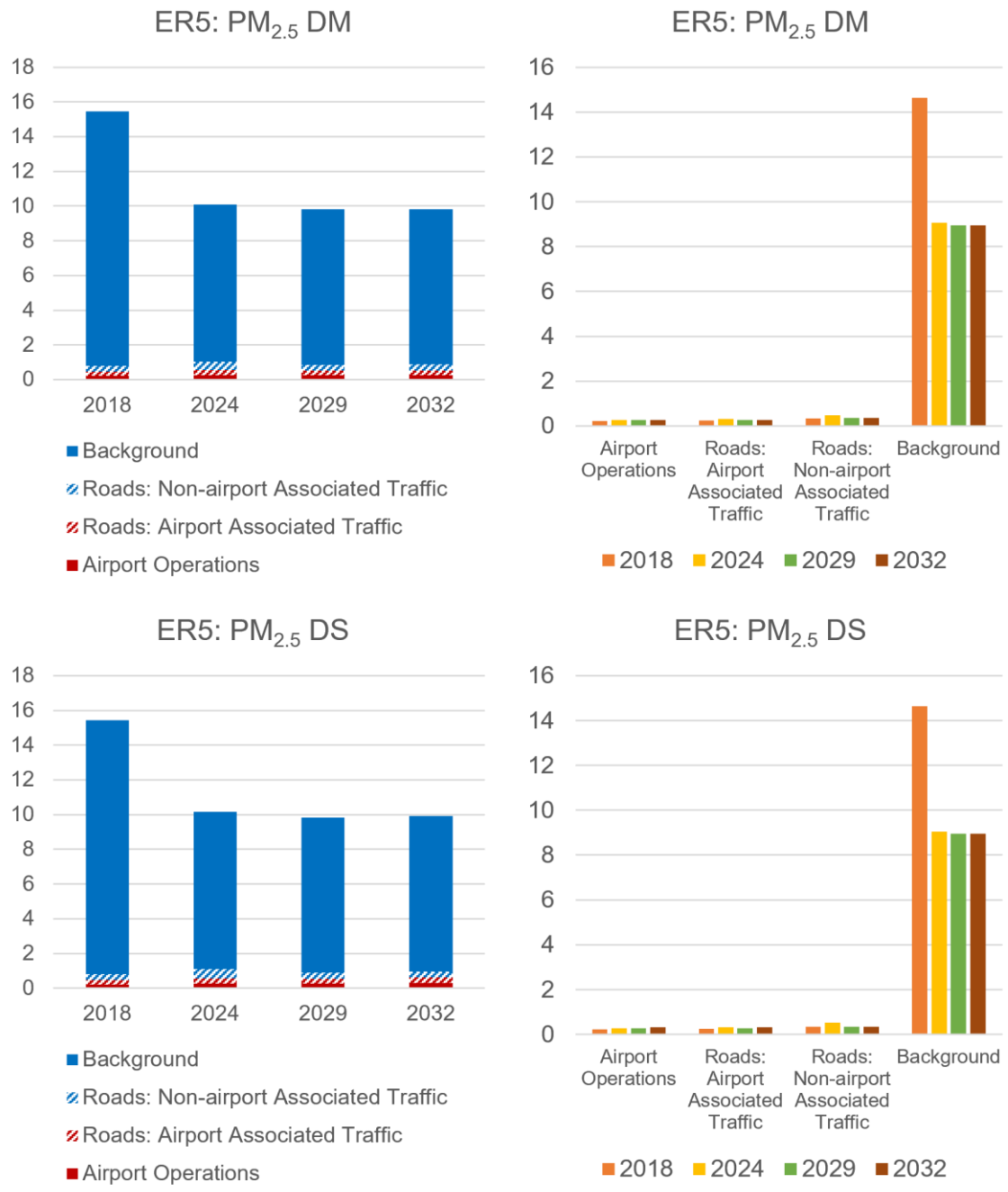

Figure 14: Source apportionment of modelled $PM_{2.5}$ concentrations (µg/m^3) at receptor ER5 (Horley) in both the DM and DS scenarios derived from modelling undertaken by Gatwick Airport.

Figure 14 shows that total $PM_{2.5}$ concentrations are predicted to decrease between 2018 and 2024, and then remain relatively stable at receptor ER5 in Horley, mirroring the pattern discussed for $PM_{2.5}$ concentrations in Hooley. This is largely due to the reduction in background concentrations, whereas contributions from road traffic and airport operations are relatively minor. The impact of increased airport activities in the 'do something' scenario is equally small; the difference in $PM_{2.5}$ concentrations at ER5 in 2032 between 'do something' and 'do minimum' scenarios is less than 0.1 µg/m^3.

3.4 Required Reduction in Emissions

As the air quality objectives are currently being met (2023) in Reigate & Banstead there is no specific reduction in emissions required. However, as noted previously, although compliance with air quality objectives is important, from a health perspective, a general reduction in emissions of the key pollutants (including PM_{10} and $PM_{2.5}$) may provide better health outcomes than focussing on hotspot locations. For this reason, wider, more strategic measures have been included and the Council will be working towards on going improvements in pollutant concentrations below the current air quality objectives.

3.5 Key Priorities

The air quality objectives have been achieved at all sites of relevant exposure since 2019, however, the need to reduce concentrations below air quality objectives is recognised and incorporated into this AQAP&S.

In Hooley, for nitrogen dioxide, road transport is the largest source and therefore in order to reduce NO_2 concentrations, reductions need to focus particularly on diesel vehicles, mainly cars and LGVs and to a lesser extent HGVs.

In Horley, for nitrogen dioxide, airport operations and airport related traffic have the largest contribution, which provides challenges for the Council's actions to reduce emissions. Airport NOx emissions are forecast to have increased between 2018 and 2024, and in the 'Do Minimum' scenario do not reduce in future years, up to 2032. In the event of the airport increasing capacity, emissions from airport operations will increase up to 2032, but in either scenario, proportionally the airport will become the more dominant source of pollution. RBBC is working with GAL to identify actions to reduce operational emissions, which is being undertaken through the DCO process.

For $PM_{2.5}$, in both Hooley and Horley, background (i.e. non-road) concentrations are the largest contributor to overall concentrations. This 'background' concentration includes large contributors, even to primary $PM_{2.5}$ concentrations, such as domestic solid fuel burning, which have not been explicitly modelled. $PM_{2.5}$ has a wide range of sources and in order to assist with reductions in $PM_{2.5}$, RBBC will be introducing measures to reduce greenhouse gas emissions (which should also reduce $PM_{2.5}$ due to a reduction in combustion) and ensure that domestic solid fuel burning is addressed.

In terms of traffic related $PM_{2.5}$, Figure 8 shows that the majority of emissions are from brake, trye and road wear, rather than from the tailpipe. For this reason, the switch to electric vehicles will not reduce particulate matter to the same extent as it does for nitrogen dioxide, although the use of regenerative braking in electric vehicles will help reduce brake wear. Nevertheless actions are included to reduce / minimise the growth in vehicle use (for example by encouraging active forms of travel).

As secondary particulates are an important source of both PM_{10} and $PM_{2.5}$, the Council will also investigate the potential for reducing precursors (which include NOx, ammonia and VOCs) when the opportunity arises. The Council are also mindful that there is likely to be emerging guidance from Government on reducing $PM_{2.5}$ emissions through the planning system, which may also include precursors, which will also be implemented as required.

As a result of the source apportionment outlined above, the following priorities have been identified:

- Priority 1 – to work collaboratively with SCC to ensure that wider transport measures are delivered, in particular to increase the use of active travel and public transport and reduce the use of private vehicles, as well as to increase the proportions of low and zero emission vehicles;
- Priority 2 – work collaboratively with National Highways to ensure that emissions from the strategic road network are reduced, in particular the sections of the A23 in Horley and Hooley, but also more widely across the district e.g. M25 and M23;
- Priority 3 – work collaboratively with Gatwick Airport Limited to address emissions associated with airport operations, particularly within the Horley AQMA, including monitoring ultrafine particles (UFP), and to identify actions to minimise future increases in emissions;

- Priority 4 – to work collaboratively across Surrey to ensure that projects are delivered to reduce the impacts of domestic solid fuel burning and other sources of $PM_{2.5}$; and
- Priority 5 – report on an annual basis to Defra the implementation of the measures set out in this report, as well as monitored concentrations within the AQMAs.

4 Development and Implementation of the Reigate and Banstead AQAP&S

4.1 Consultation and Stakeholder Engagement

In developing this AQAP&S, RBBC have worked with Surrey County Council, National Highways, other local authorities (through the Surrey Air Alliance), Gatwick Airport Limited 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. Consultation based on this document will be undertaken both online and 'off line', with feedback on measures asked for directly.

The response to the Council's consultation stakeholder engagement will be given in Appendix A: Response to Consultation.

Table 4.1 – Consultation Undertaken

Consultee	Consultation Undertaken
The Secretary of State	Yes, draft report accepted by Defra
The Environment Agency	Not relevant for measures included in the AQAP&S
The highways authority (Surrey County Council)	Yes – direct consultation at outset of the process
All neighbouring local authorities	Yes, through Surrey Air Alliance, and with Crawley BC direct. London Boroughs will be consulted as part of the wider public consultation.
Other public authorities as appropriate, such as Public Health officials	Yes, through Surrey Air Alliance
Bodies representing local business interests and other organisations as appropriate	Will be undertaken through online / offline consultation

Although a steering group has not been set up specifically for this action plan, consultation has been undertaken directly with local authority officers across departments, both within RBBC and Surrey County Council. This has entailed engaging with the following officers:

- Sustainability Officer (RBBC)
- Fleet Transport Manager (RBBC)
- Head of Planning Policy (RBBC)
- Highways (Surrey County Council)
- Health Protection Team Manager (Public Health Surrey County Council)
- Ongoing engagement with Gatwick Airport Limited (GAL) via the Development Consent Order (DCO) process, which is considering future airport emissions
- Surrey Air Alliance (partners from other local authorities in Surrey, including SCC Public Health, SCC Transport, and SCC Trading Standards)
- National Highways Route Managers (Area 4 and 5)

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5 AQAP Measures

The measures included in this AQAP&S include those specific to the AQMAs and more strategic measures which should reduce emissions of NOx and Particulate Matter across the borough, as well as define any issues around ultrafine particles. Measures include those which will improve the electric vehicle (EV) charging infrastructure (with the ultimate aim to increase both the number and proportion of EVs in the fleet), investigate potential traffic management measures within the AQMAs, promote alternatives to using private vehicles and reducing non-transport emissions specifically from Gatwick Airport, which is a major source of emissions within the Horley AQMA. Many of the measures are not within the control of the Council and hence a theme of this document is ongoing collaborative working with other organisations including Surrey County Council, GAL, National Highways, academic institutions, and across local authorities in Surrey through both improvements in policy and direct actions.

Table 5.1 to Table 5.3 shows the Council's AQAP&S measures. Table 5.1 and Table 5.2 contain measures specifically related to the Horley and Hooley AQMAs, respectively, whilst Table 5.3 sets outs supporting measures to reduce emissions across the Borough, which would form the basis of an Air Quality Strategy, when the AQMAs are revoked and an AQAP no longer required. The tables contain:

- a list of the actions that form part of the plan
- the responsible individual and departments/organisations who will deliver this action
- estimated cost of implementing each action (overall cost and cost to the local authority)
- expected benefit in terms of pollutant emission and/or concentration reduction
- the timescale for implementation
- how progress will be monitored

Please see future ASRs for regular annual updates on implementation of these measures

Table 5.1 – Air Quality Action Plan Measures – Horley AQMA

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	Installation of fast (22kW) charging points in Central Car Park Horley.	Promoting Low Emission Transport	Procuring alternative Refuelling infrastructure to promote Low Emission Vehicles, EV recharging, Gas fuel recharging	Jan 2023	Sept 2025	RBBC – Policy / Projects.	RBBC	No	Funded	£50 to £100K	Planning	Across measures designed to improve EV charging infrastructure 1+ µg/m^3 and much higher as fleet goes electric.	Installation of equipment	Contractors for work secured / suppliers appointed / installation on going Mar 24.	Forms first of the council's formal EV charging stations, which are to be rolled out to all carparks based on a priority list as and when funding becomes available.
2	Gridserve EV charging hub at Gatwick.	Promoting Low Emission Transport	Procuring alternative Refuelling infrastructure to promote Low Emission Vehicles, EV recharging, Gas fuel recharging.	2020	Completed 2024 but on going monitoring of usage till 2029.	Main funding: GAL GridServe RBBC / SCC LA support.	Gatwick / Private	No	Funded	£1 to £10 million private company	Implemented	1+ µg/m^3 (Across measures designed to improve EV charging infrastructure)	Completion of works and operational. Then on going growth in usage.	Installation completed 2024	Initial work to assist the airport with introductions to contacts / landowners associated with the mains grid connection. Site has 36 chargers up to 350 kW. Important for both the Horley AQMA and encouraging EV uptake amongst the local taxi fleet who operate on the airport run as lack of charging has been an issue – hence on going monitoring of usage.

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	Introduction of Hydrogen Fuel Cell buses on Fastway 20 route.	Promoting Low Emission Transport	Company Vehicle Procurement -Prioritising uptake of low emission vehicles	April 2018	Initial buses running (Oct 2023) fully implemented end 2025.	Metrobus	GAL / Metrobus	No	Funded	£> 10 million	Implemented	<0.1 µg/m^{3}at borough level. But potentially 0.1 to 1 µg/m^3 at RB149.	Introduction of retrofitted buses.	Company originally supplying fuel cells went into administration hence delay from first action plan.	Once complete 50 % of all bus movements past the RB149 site in the Horley AQMA will be via a hydrogen fuel cell bus. Project is a demonstrator for Metrobus - if operational savings as forecast the remaining high frequency bus service past RB149 is likely to also be converted to H2 fuel cell.
4a	Ultrafine Particle monitoring within the vicinity of Gatwick Airport.	Other/ Public Information	Other	Q2 2025	Once installed on going.	RBBC Leon Hibbs	Environment Agency	No	Funded	£100K to £500K	Installation phase	N/A	Equipment installed and then data capture > 90 %.	First data due 2025	Aim is to install equipment to monitor this emerging pollutant to characterise residential exposure (number and size distribution) and examine long term trends in exposure.
4b	Examining toxicity of aviation derived ultrafine particles.	Other	Other	2025 - 2030	Subject to funding	RBBC – Env. Health plus university partner	RBBC / other grant source	No	Unfunded at this stage.	£10 to £20K.	Planning	n/a	Study output / findings	In discussion with universities	Key barrier is funding. Aim of work is to look at toxicity of ultrafine particles on the Horley Gardens Estate near Gatwick. Toxicology method subject to discussion with universities, though in first instance likely to focus on oxidative potential (OP).

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
5	Local Forums / Policy: - AQ Working Group with GAL.	Policy Guidance and Development Control.	Regional Groups Co-ordinating programmes to develop Area wide Strategies to reduce emissions and improve air quality.	April 2005 and on going.	On going.	RBBC - Env. Health GAL Crawley - Env. Health	RBBC / GAL / Crawley BC	No	Funded	£<10K	Implemented	1 µg/m^{3}at RB59 / RB149 – depending on schemes.	No specific measure, but will include Gatwick AQ plan implemented, and ongoing predictive modelling work.	On going. Work in 2024 focused on commissioning retrospective model and inventory for 2019 to check where pollutant reductions are occurring in practice.	AQ work on use of the emergency runway / DCO process resumed in Sept 2021 and continued in 2024. With extra runway 381,000 movements by 2032 compared to 284,987 in 2019. (c.33 % increase).
6	Work with National Highways Area 4 to ensure schemes to increase capacity in AQMA (e.g. GAL DCO process) fully consider air quality.	Transport Planning and Infrastructure	Other	Across the timescale of the AQAP	Ongoing	RBBC, National Highways, GAL	National Highways/ GAL	No	Unfunded	Unclear at this stage	Planning	Unclear at this stage, would work to ensure no increase in concentrations	Dependent on scheme	Initial discussions held with National Highways Area 4 Team	Funding likely to be greatest barrier

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7	Local Forums / Policy: - New section 106 agreement and sustainable development strategy.	Policy Guidance and Development Control.	Regional Groups Co-ordinating programmes to develop Area wide Strategies to reduce emissions and improve air quality.	April 2005 and on going.	On going – current agreement ends 2025.	RBBC GAL Crawley BC WSCC	RBBC / GAL / Crawley BC WSCC	No	Funded to 2025	£50K to £100K for AQ component.	Implemented	1 µg/m^3 at RB59 / RB149 – depending on schemes.	Agreement and Implementation of new agreement and strategy.	Agreement signed in 2024. New agreement due before 2026.	Only if the measures in the agreement are completed by GAL, and the outcome of any studies in the agreement acted upon, will any improvement in air quality occur. Have seen improvements in AQ over past 10 years, but none due to airport itself by 2016. However, there have been airport related improvements in air quality to 2019, although these brought the airport contribution back to levels seen 15 years ago.
8	National / EU measures: - Tighter aircraft engine emissions standards.	Policy Guidance and Development Control.	Other	April 2005 and on going.	On going.	RBBC – Env. Health. Plus GAL.	N/A	No	Funded at LA level.	£<10K to LA	Implemented	Aim is to reduce the rate of growth of aircraft emissions.	Higher standards in place and ideally an overall reduction in aircraft ground emissions. 2005: 644 tonnes	2010: 471 tonnes 2015: 520 tonnes Originally discussed informally with DfT representative in 2007 especially the need	APU emissions are also a source of concern, and the lack of manufacturers' data on emissions makes assessing the scale of the impact difficult. Thus in the first instance emissions testing of APUs needs to be introduced. Still limited work in this area that is in public domain (April 2022). However APU

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													(aircraft ground and APU)	initially for better and publicly available data on APU emissions. This has continued over the years most recently with GAL and their AQ consultants working on the DCO (2022).	running times at Gatwick have reduced significantly since 2010. Current DCO work (to date) indicates that out to 2038 the only growing source of NOx emissions are aircraft / APUs, all other sources show declines despite significant planned growth at the airport.

Table 5.2 – Air Quality Action Plan Measures – Hooley AQMA

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
9	Changes in physical road layouts to improve air quality	Traffic Management	UTC, Congestion management, traffic reduction	Subject to funding, and availability of suitable emissions data set.	2026/27	RBBC – Env. Health, National Highways	RBBC	No	Not funded	£50K to £100K	Planning	Unknown until modelling undertaken	i) Micro-simulation scoping study. ii) implementation of scheme (if appropriate)	On going - Funding sources being sought. 2018 and 2019 National Highways looking to make layout changes without AQ modelling. No further progress 2024.	Work is to focus on the A23 Hooley AQMA. Aim of the microsimulation study is to look at changes in the physical road layout especially in the vicinity of the Star Lane Junction, with a view to reducing pollution levels by moving stop start traffic away from residential properties, along with the impact of speed changes (similar study undertaken at Drift Bridge Banstead).
10	Investigation into potential gross vehicle polluters on A23 Hooley, and if in line with	Vehicle Fleet Efficiency	Testing vehicle emissions	Oct 2023	Initial Study subject to funding 2025.	RBBC	TBC	Possible funding source	Not funded	£10 to £50K	Planning	Unknown at this stage – whole point of study.	Initial Study completed.	Initial discussion held with National Highways about principle of the investigation	Aim of the initial study is to see if the incidence of grossly polluting vehicles is greater than assumed in national figures e.g. through defeat devices / emulators. If not, then project ends at this point. If a higher incidence is found then will look to see potential level of reduction that

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
	national 'failure' rates.														improving this 'failure' rate could deliver and then look at routine testing / enforcement on this section of the road network.
11	Work with National Highways Area 5 team to implement 30 mph speed limit on A23 at Hooley	Traffic Management	Reduction of Speed Limits	2025	2025	National Highways	Internal NH funding	No	Funded	£<10K to LA	Implementation phase.	Variable depending on what extent it smooths traffic flow. Not designed to reduce traffic or improve fleet	Implementation of new speed limit. Then on going monitoring of impact for 2025, 2026, and 2027.	Build work commenced 2025.	Work on going.
12	Work with National Highways to explore schemes on the A23, such as traffic management measures to improve flow past properties	Traffic Management	Strategic highway improvements	2027	Depends on whether schemes identified but to take place across the timescale of this plan	RBBC and National Highways	No funding identified, but funding could be available though NH Environment fund or Defra AQ Grant	Potential for looking at feasibility of measures	Not funded	£10K - £50K for initial feasibility work	Planning phase	Unknown, would undertake feasibility work to look at target pollutant reductions	Feasibility work undertaken	Initial discussion held with National Highways	Funding. See also Action 9 as a project under consideration.

Table 5.3 – Air Quality Action Plan and Strategy Measures – Supporting borough-wide improvements

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
13	Trial of rapid charging points (50 kWh) for electric vehicles.	Promoting Low Emission Transport	Procuring alternative Refuelling infrastructure to promote Low Emission Vehicles, EV recharging, Gas fuel recharging	Oct 2015	Oct 2018 Extended to Oct 2026 (using new kit installed 2021)	RBBC – Env. Health	OLEV / Sussex Air	No	Funded	£10 - £50K	Implemented	Across measures designed to increase EV infrastructure 1+ µg/m^{3}and much higher as fleet goes electric.	Steady growth in number of charges and kWh of electricity supplied.	Jan – June '20 total charges 287 (5,269 kWh) Jan – June 21 total charges 28 (404.7 kwh) Jan – June 22 total charges 731 (14,942 kwh) Jan – June 23 total charges 702 (15,400 kwh) Jan – June 24 total charges 639	Trial project to look at - demand for rapid electric vehicle charging in the borough, and how this changes with time. - to understand the practicalities and costs of running such equipment. Low usage for 2021 due to site works. In period July to Sept 21 (3 months) 189 charges 3,171 kWh. Significant growth in 2022 reflects increase in EVs in the road fleet and larger batteries in the vehicles. Figures from 2023 suggest a plateau, which may reflect increasing reliability of surrounding chargers.

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
														(14,916 kWh)	
14	Trial of destination charging of electric vehicles using fast (7 -22 kWh) chargers.	Promoting Low Emission Transport	Procuring alternative Refuelling infrastructure to promote Low Emission Vehicles, EV recharging, Gas fuel recharging	2017	End 2027	RBBC – Env. Health	RBBC / Gatwick	No	Funded	£10 - £50K	Implemented	1+ µg/m^3 across measures designed to increase EV infrastructure	Installation of charge points. Steady growth in number of charges and kWh of electricity supplied.	Victoria Road car park (22kW) installed April 2018. Reigate Town Hall installed Aug 2018. Victoria Road Extension March 2020. Banstead High Street due to go live end 2025 / Q1 2026/ (see 15).	Complementary project to rapid charging project, to look at demand and usage pattern of destination chargers and gain practical experience of running such equipment including costs. Demand at Victoria Road was such that additional two sockets installed Match 2020. Usage Victoria Road: July to Dec 2020: 10,073kWh (431 sessions) July to Dec 2021: 8,740 kWh (406 sessions) with 1 post down) July to Dec 2022: 42,053 kWh (1,817 sessions) July to Dec 2023: 47,734 kWh (2,530 sessions) July to Dec 2024: 28,210 kWh (1,199 sessions) Fall in 2024 reflects increasing local options for charging.

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
15	Installation of fast (22kW) charging points in High St Banstead Car park	Promoting Low Emission Transport	Procuring alternative Refuelling infrastructure to promote Low Emission Vehicles, EV recharging, Gas fuel recharging.	Jan 2021	Dec 2025	RBBC – Env. Health	RBBC	No	Part Funded	£50 to £100K	Implemented	Across measures designed to increase EV infrastructure 1+ µg/m^3 and much higher as fleet goes electric. Note this is to feed into future work.	Installation of equipment	Equipment installed – awaiting legal work prior to grid connection	Initial works complete now waiting on legal. Final completion Banstead due 2025/26.
16	On street charge point provision.	Promoting Low Emission Transport	Procuring alternative Refuelling infrastructure to promote Low Emission Vehicles, EV recharging, Gas fuel recharging.	Oct 2023	2029+ (speed of roll out depending on funding).	SCC / RBBC	SCC / RBBC/ Private funding	No	Not funded in full but SCC have private sector partner.	£1 to £10 million	Implemented	1+ µg/m^3 (Across measures designed to increase EV infrastructure)	Increasing number of on street charging sites installed and operational.	On going project suppliers appointed by SCC 2023. Rollout commenced 2024 and on going.	This is the installation phase following on from work in late 2021 to draw up a priority list of areas where charging is needed on street in the borough as there is no off road parking, and feasible to go on street. The study also took account of socio-economic factors so areas are not left behind, and to examine council car parks that might be prioritised for overnight charging by local residents with no off road or no charging point.

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17	Implementation of the A23 (Redhill to Horley) Design Code.	Traffic Management	UTC, Congestion management, traffic reduction	Oct 2023	Consulted on in 2023. Adopted 2024. Implemented 2025 onwards.	RBBC	TBC	No	Funding will follow agreement on the code.	£> 10 million	Planning	Variable but in places over 1 µg/m^3, depending on scheme.	Implementation and build out of code.	Adopted June 2024.	Aside from wider pavements / cycleways to encourage walking / cycling for shorter trips, this has the impact of moving the road away from the residential houses facing onto the road in some cases by several metres hence potentially some significant falls in pollutant exposure.
18	'High Quality Bus Corridors' (Bus priority routes) within borough.	Transport Planning and Infrastructure	Bus route improvements	April 2024	April 2025 onwards	SCC / RBBC – Planning Policy (Peter Boarder, SCC David Ligertwood)	SCC	No	Partially funded	£> 10 million	Planning (Para 3.1.1 appendix A Surrey Enhanced partnership plan for buses August 2022).	Variable but up to 1 µg/m^3, depending on scheme, and buses operating on that route.	Completion of Redhill to Salfords route	Planning underway (2023) for Redhill to Horley.	Surrey Enhanced partnership plan for buses was produced in August 2022 and details the following: Junction improvements, bus lanes, intelligent bus priority at traffic signals, bus friendly traffic management for the following sites: A23 from Gatwick, Horley, Redhill, Merstham; A217 Gatwick, Horley, Reigate; Services: Fastway 20, 100, 315, 400, 420, 422, 424, 430, 435, 460

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19	Upgrade of bus fleet to Euro VI or zero emission vehicles.	Promoting Low Emission Transport	Company Vehicle Procurement -Prioritising uptake of low emission vehicles	August 2022	April 2026 (provisional)	SCC / Metrobus	SCC / Private	No	Partially funded	£> 10 million	Planning	Variable but up to 1 µg/m^3, depending on scheme, and buses operating on that route.	% of vehicles that are Euro VI or zero emission	In planning stage.	Surrey Enhanced partnership plan for buses published August then November 2022. Statement on p9 for higher specification buses. Current (as of Oct 2021) fleet: Zero Emission: 16 (2.3% of fleet) Euro VI: 349 (49.4% of fleet)
20	Electrification of the council's vehicle fleet.	Promoting Low Emission Transport	Public Vehicle Procurement -Prioritising uptake of low emission vehicles	April 2018	Late 2029/30 (staged approach).	RBBC – Fleet Anthony Hathaway / RBBC - Env Health Leon Hibbs	RBBC	No	Funded	£> 10 million	Implemented	<0.1 µg/m^3 at borough level. Project also for CO_2 savings.	Change in fleet from Diesel / Petrol to Electric	In Progress. Pool cars and car sized van fleet replaced 2019 to 2022. Work on larger van fleet replacement has begun.	Initial bin lorry purchase 2024/25. Heavy EV charging infrastructure design 2024/5 (provisional). Vehicle Programme replacement (indicative): 2024/25 2 (non refuse) 2025/26 14 (non refuse) 2026/27 18 (non refuse) 2027/28 13 (non refuse) 9 (Refuse) 2028/29 9 (non refuse) 9 (Refuse) 2029/30 8 (non refuse) 4 (Refuse)
21	Maintain current taxi	Promoting Low		April 2015	On going		RBBC	No	Funded	<£10K	Implemented	<0.1 µg/m^3		On going	Current scheme means that entire taxi fleet is replaced

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	licensing regime.	Emission Transport	Taxi Licensing conditions			RBBC Licensing.							Taxi standards maintained		every 9 years, with majority replaced within 7 years. Important in wider AQ context as fleet has grown since 2005 from c.500 to 928 (Apr. 2023) to 1305 (June 2024) to 1413 (Mar 25).
22	Encourage EV uptake via taxi licensing regime.	Promoting Low Emission Transport	Taxi emission incentives	April 2019	On going	RBBC Licensing.	RBBC	No	Funded	<£10K	Implemented	<0.1 µg/m^3 at borough level.	Number of pure EVs in the taxi fleet.	EV Introduction day held	First phase of the work completed in 2020 with agreement for 5 dedicated pure electric taxi licences. Then work with Energy Saving Trust in Oct 21 saw 30 drivers take part in an EV 'intro' day, with a further 12 test driving vehicles. EST said that was very good turnout for this type of event. Aim is to get EVs into the local fleet so drivers can assess the practical benefits and issues with EV taxi ownership and share with other drivers.
23	EV Taxi trial project.	Promoting Low	Taxi emission incentives	April 2023	2026/27	SAA / SCC / RBBC	DEFRA	Yes	Funded	£10 to £50K	Planning	<0.1 µg/m^3 at borough level	No. of vehicles	Funding in place (July 21),	Final form of the project will essentially enable taxi drivers to lease an EV for private hire

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		Emission Transport				for local aspect							taken up by drivers	however following project delays SCC withdrew project funding (Nov 2023) – awaiting final approval from DEFRA (2025).	or Hackney carriage work at a discounted rate. Seven boroughs in Surrey (including RBBC) involved. Project intended to help the 'early adopter' drivers so that they are able to feedback to other drivers the good and bad aspects of EV taxi ownership.
24	Continued Promotion of Surrey Car Share / Lift Share.	Alternatives to private vehicle use	Car Clubs	Apr 2015	On going	SCC – contact Heidi Auld.	SCC	No	Funded	<£10K	Implemented	<0.1 µg/m^3	Steady growth in number of participants. (1300 users at start of 2006).	On going. Currently 3207 (2023) active members. 4809 (2020) 4979 (2017) 3500 (2011)	Measurable improvements in air quality unlikely in the short medium term unless significant increase in users. Surrey scaled back promotion after closure of travelSMART (June 2017), thus limited growth to date.
25	Promotion of cycling within schools.	Promoting Travel Alternatives	Promotion of cycling	Sept 2015	Subject to funding	Sustrans SE / RBBC	RBBC / SCC	No	Funded	£10 to £50K	Implemented	<0.1 µg/m^3	Continuation of existing promotional	On going.	Existing programme is well established. Main need is to keep programme running as

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					will be on going.	Sustainability.							work and training.		new children start and others leave. Promotional work also done on cycling under the R&Be active scheme.
26	Promotion of Active Travel (schools and businesses).	Promoting Travel Alternatives	Promotion of cycling / walking.	Has operated for a number of years but new post created Oct 2023.	Subject to funding will be on going.	RBBC Sustainability	RBBC	No	Funded	£50K to £100K	Implemented	<0.1 µg/m^3	Number of businesses and schools spoken to in first instance, and then movement from vehicles to 'active' travel.	Appointment to post Q3 2023.	
27	Promotion of low NOx boilers, ground and	Promoting Low Emission Plant	Emission control equipment for small and	On going since April	On going.	RBBC Leon Hibbs	RBBC	No	Funded	<£10K	Implemented	<0.1 µg/m^3at borough level but potentially	Measure adopted by developers through	On going.	Low NOx technology is considered to be technology where NOx emissions are less than 40mg/kWh (dry gas and

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	air source heat pumps.		medium sized stationary combustion sources / replacement of combustion sources.	2015, and originally June 2005								up to 1 µg/m^3 locally.	panning process.		0% O_2). The council is aware of developments (in the city of London) where ultra-low NOx appliances (less than 15mg/kWh NOx emissions) have been installed. The use of ultra-low NOx technology is therefore actively encouraged. Aim is to minimise growth in background pollution / reduce if possible. Increasingly seeing air source equipment specified in commercial sector, less so in small scale residential developments.
28	Fit out of council estate with solar and battery storage as appropriate.	Promoting Low Emission Plant	Emission control for small and medium sized stationary combustion sources / replacement of combustion sources.	Oct 2023	On going. Roll out across the estate as and when funding permits.	RBBC Sustainability	RBBC	No	Funded in part	£> 10 million	Implemented	<0.1 µg/m^{3}at borough level but potentially up to 1 µg/m^3 locally.	Steady growth in number of properties upgraded.	Ongoing.	Priory Park Pavilion due for battery and solar installation completed 2024/25, along with 7 residential properties (solar) that the council owns (2024/25). Further 8 residential properties owned by the council are to be fitted with solar panels / air source heat pumps in 2025/26.
29	Discourage use of biomass /	Promoting Low	Other	April 2020	On going.	RBBC Leon Hibbs	RBBC	No	Funded	<£10K	Implemented	<0.1 µg/m^3 at borough level.	No specific measure – impact	Ongoing.	Use of biomass in a commercial setting considered

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	wood burning stoves, where grid gas is available.	Emission Plant											conveyed via talks, planning, and calls regarding smoke control areas.	Number of conversations with local residents on wood burning in general and also residents who have a wood burning stove.	on merits i.e. setting / nearby receptors.
30	Road going construction vehicles to meet the London Low Emission Zone standards, and for projects over 6 months NRMM equipment must as a	Promoting Low Emission Plant	Other	Oct 2023	On going	RBBC – Env. Health	No funding needed at this stage	No	Funded	<£10K	Planning – implemented once action plan agreed.	Variable depending on project size and duration.	Policy implemented.	On going.	Where a development / construction project exceeds 6 months duration (either as a single phase or a number of phases in combination) road going construction vehicles must meet the London Low Emission Zone standards – and for NRMM equipment this must meet London's 'Low Emission Zone' for Non-Road Mobile Machinery standards with equipment as a minimum meeting Stage IV requirements, and stage V from 2030.

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	minimum Stage IV requirements, and stage V from 2030.														
31	Promotion of tree planting within the Borough.	Other	Other	Oct 2023	On going	RBBC	Not funded	No	Unfunded at this stage.	-	Planning	1 hectare of woodland in RBBC removes 7kg of $PM_{2.5.}$	Area of additional woodland planed.	On going.	Tree planting can have an important role in removing pollution. In RBBC 1 ha of tree planting would remove around 7kg of $PM_{2.5}$ per annum based on Centre for Ecology and Hydrology calculator. See: https://shiny-apps.ceh.ac.uk/pollutionremoval/
32	Continue to Work with Surrey Air Alliance on Surrey wide Projects.	Policy Guidance and Development Control	Regional Groups Co-ordinating programmes to develop Area wide Strategies.	April 2015	On going	RBBC Leon Hibbs	Districts and Boroughs in Surrey	No	Funded (staff time)	-	Implemented	Variable depending on project.	Projects in progress	On going.	Group works on various AQ projects e.g. working with the Surrey Heartlands Children and Young People's Asthma Team to date on their project to develop an Asthma care bundle.
33	Air Pollution Warning Service for	Public Information	Via other mechanisms	April 2015 started	On going –subject to funding.	RBBC – Env. Health	RBBC and other boroughs	No	Funded	<£10K	Implemented	n/a	Steady growth in number of participants	On going. 1030 active users (April	Service for pollutants either compliant with LAQM standards (PM_{10}) or outside the regime (O_3), but which

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	vulnerable groups.			Oct 2013			in the service.						(original target was up to a total of 1000 users).	2023). Following supplier change now 246 (Feb 2025).	reach levels capable of having an acute health impact. Despite promotion of change significant number of users were lost following switch to new supplier. Plan to rebuild user base over next 2 years.
34	Production of borough wide mapping of $PM_{2.5}$ and NO_2 including health impact assessment.	Policy Guidance and Development Control	Other	April 2017 (1st model)	2026/27 for 2nd modelling exercise.	RBBC – Env. Health	RBBC and other Surrey Boroughs.	No	Funded	£10 to £50K	Implemented	n/a	Production of map and health calculations	First model of borough produced in 2019. Modelling to be updated in 2026 (baseline 2025).	Mapping is to be used as a policy tool to quantify changes in health impact of pollution on residents with time, and inform county health funding priorities. Also used to inform action planning, if appropriate, at a local level.
35	Monitoring.	Other / Public information	Other	On going	On going	RBBC Leon Hibbs	RBBC / GAL	No	Funded. Horley subject to GAL extension beyond 2025 if no DCO.	£50K to £100K per annum.	Implemented	n/a	Data capture > 90 %.	On going. Data capture consistentl y in excess of 90 %.	Sites are important for examining trends in measured pollutant concentrations, calculating the actual health impact, compliance monitoring, informing the pollution warning service, and also model validation.

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36	Monitoring of Ammonia.	Other / Public information	Other	By 2029	End of AQS. Subject to funding.	RBBC Leon Hibbs	RBBC / Other	No	Not Funded	£50K to £100K	Planning	n/a	1 year ammonia data set.	Initial discussion on potential equipment.	Aim is to collect minimum of a years data on ammonia concentrations in the borough to look at public exposure on a High St (Reigate), and at a suburban / rural site (RG1), to compare to national datasets and with a view to potentially reducing this secondary particulate precursor.

Appendix A: Response to Consultation

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

Consultee	Category	Response
To be completed following consultation		DEFRA are the initial consultee on this document to check that there are no fundamental issues with the scale and nature of the measures being proposed. Once DEFRA have confirmed that the approach is sound the document will be subject to a full public consultation before being taken to the council portfolio holder / council executive for final sign off. An updated document will then be submitted with this section completed.

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)
Environmental Permits	RBBC carries out permitting role but judged not to need an action in this AQAP&S	Not a large contributor to emissions in Reigate and Banstead – proportionate measures included in the AQAP
Freight and Delivery Management	Freight consolidation	Not considered suitable measure for the AQMAs in question (Strategic Roads)

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'
AQAP&S	Air Quality Action Plan and Strategy
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
CERC	Cambridge Environmental Research Consultants
COMEAP	Committee On the Medical Effects of Air Pollution
CS	Core Strategy
DCO	Development Consent Order
Defra	Department for Environment, Food and Rural Affairs
EU	European Union
GAL	Gatwick Airport Limited
HGV	Heavy Good Vehicles
HWS	Health and Wellbeing Strategy
LAQM	Local Air Quality Management
LGV	Light Goods Vehicle
LTP	Local Transport Plan

NH	National Highways
NHS	National Health Service
NO_2	Nitrogen Dioxide
NO_x	Nitrogen Oxides
NRMM	Non Road Mobile Machinery
PHOF	Public Health Outcomes Framework
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
RBBC	Reigate and Banstead Borough Council
SAA	Surrey Air Alliance
SCC	Surrey County Council
UFP	Ultra Fine Particles
UTC	Urban Traffic Control
WHO	World Health Organization