

Surrey

Transport Plan

Low Emissions Transport
Strategy

Draft for Cabinet approval

November 2018



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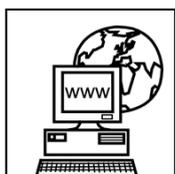
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Foreword



A handwritten signature in black ink that reads "Mike Goodman".

Mike Goodman
Cabinet Member for the
Environment and
Transport



A handwritten signature in black ink that reads "Colin Kemp".

Colin Kemp
Cabinet Member for Place

The Government has set a long term vision for walking and cycling to be the natural choice for shorter journeys, for an improved customer experience of public transport and for nearly every car and van on UK roads to be a zero emissions by 2050.

Improving air quality and reducing carbon emissions is a joint responsibility, involving the county council, boroughs and districts. Together, we will work with businesses and communities to find effective solutions which reduce emissions from transport and support sustainable economic growth and healthy and vibrant places.

Surrey has significant potential for adopting ultra low emissions vehicles, an extensive rail network and excellent standards in cycle training. However, there are many challenges such as some rural areas being highly dependent on cars to reach services and employment opportunities.

Whilst additional funding for measures has been announced, this is limited in relation to the scale of the challenge. We will continue to secure funding and seek the right balance between voluntary measures and tighter regulations and between issues today and in the long term. This strategy sets out our ambition to work together to reduce polluting emissions from transport in Surrey; for the benefit of everyone who lives or works in Surrey.

Executive summary

This is the Surrey Low Emissions Transport Strategy, which is part of the Surrey Transport Plan¹. It covers emissions from transport which are harmful to health and the environment including local air pollutants and greenhouse gases (together referred to as ‘polluting emissions’).

Surrey County Council recognises the significant health and environmental problems of air pollution and climate change. As the highway authority, the county council has a specific duty to work with districts and boroughs to bring forward measures to improve air quality.

Since last publishing our Air Quality Strategy (2016) further evidence has emerged on the damaging effects of air pollution, most notably the Royal College of Physicians report² in 2016 which raised the profile of research into the quantification of deaths attributable to specific air pollutants. Furthermore, since publishing the Surrey Transport Plan’s Climate Change Strategy in 2011, which is superseded by this new strategy, the environmental, social and economic cases to limit climate change has become ever more compelling and urgent.

Monitoring shows there are breaches to legal limits for air pollution in localised areas across Surrey for nitrogen dioxide. Also particulate emissions have adverse health impacts across the whole county, contributing to 5% of deaths in Surrey³.

While air quality has improved in some areas of Surrey, others have been identified and declared as places where action is required. Reductions in greenhouse gas emissions from transport are currently lagging behind reductions in other sectors.

Reducing particulate and nitrogen dioxide emissions from vehicles could significantly improve public health in Surrey, particularly for the most vulnerable in our communities. There are significant opportunities for sustainable transport options to simultaneously support clean economic growth, increase physical activity and reduce emissions contributing to local air pollution and climate change.

Our aim is to reduce polluting emissions from road transport across the county and work with partners to achieve legal compliance for air quality locally.

¹ The Surrey Transport Plan is Surrey’s third (and current) statutory local transport plan, and is often referred to as LTP3.

² Royal College of Physicians. Every breath we take: the lifelong impact of air pollution. Report of a working party. London: RCP, 2016.

³ [Public Health Outcomes Framework Indicator 3.01](#)

The county council's strategy for reducing polluting emissions from transport is by:

- Improving transport networks and infrastructure for sustainable travel such as highway improvements for walking, cycling and passenger transport and supporting the growth of Surrey's public EV charge point network.
- Travel behaviour change such as initiatives and campaigns in schools/workplaces, road safety initiatives to create a safer environment for walking and cycling, expanding car clubs, encouraging lift sharing, raising awareness and public understanding of air quality and climate change.
- Partnership working such as working with district and borough councils on air quality matters, advising on transport impacts of new development, strategic planning input to Local Plans and partnerships with transport providers for modal shift and lower emissions vehicles, including bus companies and train operators.
- Reducing emissions from the council's own estate and operations such as influencing staff business travel, procuring electric vehicles / ultra-low emissions fleet vehicles where viable and where value for money is shown and opportunities in highways operations and maintenance supply chain.

Funding is essential for delivery and we will work with all relevant partners to secure external funding to improve local air quality and reduce countywide greenhouse gas emissions.

This strategy supports the council's 2030 vision that residents live in clean, safe and green communities, where people and organisations embrace their environmental responsibilities

Glossary and abbreviations

The table below provides a glossary, which includes abbreviated terms found in this document.

Term	Description
$\mu\text{g}/\text{m}^3$	Micrograms per cubic metre; in this context, it is used to illustrate the level of pollutant present in a given area.
Air Quality Action Plan	A plan developed by a local authority to address the areas of poor air quality that have been identified within an Air Quality Management Area.
Air Quality Management Area (AQMA)	Where local authorities find locations where pollutant levels are not likely to meet or are already not meeting national objectives, the authority must declare an air quality management area (AQMA).
Air Quality Standard (AQS)	A concentration of a pollutant recorded over a given time (e.g. annually) considered to be acceptable in terms of what is known scientifically about the effects of each pollutant on health and the environment ⁴ .
Annual Status Report (ASR)	Report produced by district/borough councils describing air quality in their area, submitted annually to DEFRA.
Committee on Climate Change (CCC)	Committee providing independent advice to government on building a low-carbon economy and preparing for climate change.
Community Infrastructure Levy (CIL)	A form of monetary contributions collected from developers by district/borough councils for infrastructure in the local area.
Carbon dioxide (CO ₂)	A greenhouse gas which contributes to global warming and climate change.
Department for Environment, Food and Rural Affairs (DEFRA)	UK government department responsible for safeguarding the natural environment, supporting the food and farming industry and sustaining the rural economy.
Department for Transport (DfT)	A ministerial department which supports the transport network across the UK to keep people and goods travelling around the country; plan and invest in transport infrastructure.
Emissions standards	Emissions standards were first introduced in 1992 by the European Union and refer to the level of emissions produced by a given vehicle. The 'Euro 6' emissions standard is the most recent, and the strictest yet in relation to permitted pollutant levels from a vehicle.

⁴ <https://uk-air.defra.gov.uk/air-pollution/uk-eu-limits>

Term	Description
Greenhouse gases (GHG)	Gases that are known to trap heat within the atmosphere and contribute to global warming and climate change. Examples are carbon dioxide, ozone, methane and nitrous oxide.
Local Air Quality Management (LAQM)	The process through which local air quality is monitored and reported.
Nitrogen dioxide (NO ₂)	An air pollutant, see 'Nitrogen oxides' below.
Nitrogen oxides (NO _x)	Made up of nitrogen dioxide (NO ₂) and nitric oxide (NO), released from combustion processes of domestic, industrial and road transport (engines). Exposure to high levels can cause inflammation of the airways, and NO ₂ can increase susceptibility to respiratory infections and allergens ⁵
Ozone (O ₃)	Gas formed when other pollutants react in the atmosphere) ⁶ ;
Public Health Outcomes Framework (PHOF)	The Public Health Outcomes Framework examines indicators that help us understand trends in public health and sets out outcomes to be achieved across the public health system.
Particulate Matter (PM) PM _{2.5} PM ₁₀	A form of air pollution consisting of fine particles, typically below ten micrometres in diameter, which can cause damage to human health. PM _{2.5} consists of smaller sized particles less than 2.5 micrometres in size. PM ₁₀ consists of slightly larger sized particles less than 10 micrometres in size. In relation to transport, PM includes combustion particles from petrol or diesel engines and tyre and brake wear from all motorised vehicles.
Royal College of Physicians (RCP)	The Royal College of Physicians (RCP) aims to improve patient care and reduce illness. It is an independent patient centred and clinically led organisation, that drives improvement in the diagnosis of disease, the care of individual patients and the health of the whole population both in the UK and across the globe
Section 106 Agreement	A form of monetary contributions paid by developers to the council for infrastructure related to their development.
Sulphur dioxide (SO ₂)	Emitted primarily as a result of combustion of sulphur containing fuels in power stations (for heat and electricity). It can cause irritation to the respiratory system, causing constriction of the airways. Short-term exposure to high concentrations can have significant effects on health. ⁷
Surrey Air Alliance	An officer level group bringing together representatives from districts/boroughs and Surrey County Council (Transport and Public Health), to discuss local air quality issues.
Surrey Energy and Sustainability Partnership	A collaborative group involving the county council, all 11 borough and district councils, focusing on improving household energy efficiency working through Action Surrey.

⁵ Defra/DfT 2017 'UK plan for tackling roadside nitrogen dioxide concentrations' Technical Report.

⁶

https://consult.defra.gov.uk/communications/laqm_changes/supporting_documents/LAQM%20Policy%20Guidance%202016.pdf

⁷ Defra/DfT 2017 'UK plan for tackling roadside nitrogen dioxide concentrations' Technical Report.

Term	Description
Surrey Health and Wellbeing Board	A county council committee where representatives from the NHS, public health, social care, local councillors and user representatives work together to improve the health and wellbeing of the people of Surrey.
Surrey Transport Plan (LTP3)	The county council's statutory Local Transport Plan, currently in its third version and available to view online at www.surreycc.gov.uk/surreytransportplan
Ultra-Low Emission Vehicles (ULEVs)	Vehicles which use low carbon technologies, emit less than 75g of CO ₂ per kilometre from the tailpipe / exhaust, or is capable of operating zero tailpipe emission mode for a range of at least ten miles ⁸
World Health Organization (WHO)	The WHO works with governments and other partners to ensure the highest attainable level of health for all people, seeking to ensure the safety of food and water and the air people breathe.

⁸ <https://www.smmmt.co.uk/industry-topics/technology-innovation/ultra-low-emission-vehicles-ulevs/>

1. Introduction

- 1.1 This is the Low Emissions Transport Strategy, which is part of the [Surrey Transport Plan](#). It covers pollutants which are known to be emitted by local transport and which damage health and the environment. These are principally nitrogen dioxide (NO₂) and particulate matter (PM) and greenhouse gas emissions, including carbon dioxide (CO₂), which are causing climate change.
- 1.2 The Surrey Transport Plan is now on its third version (LTP3) and runs to 2026. This particular strategy has been reviewed in 2018 and will be kept under review in light of future changes in government policy and local priorities.
- 1.3 A low emissions transport network has multiple benefits including greater long term economic and community prosperity and improved health and wellbeing.
- 1.4 Road transport is a major source of NO₂, particulate matter and greenhouse gases and measures to address air quality and reduce greenhouse gases are often complementary.
- 1.5 However, measures to reduce greenhouse gas emissions across the county will not, on their own, be sufficient to return air quality to safe levels for human health in the shortest possible timeframe and vice versa, reducing emissions only in declared areas of air pollution will not sufficiently reduce overall carbon emissions in the long term. This means we need both a more immediate approach to reductions in AQMAs and strategic and long term approach to county wide carbon emissions reduction.
- 1.6 Having a strategy which considers both air quality and climate change together, ensures that resources are used effectively and opposing or conflicting actions are avoided where possible. If compromises are needed between objectives, these should be considered in a balanced way to consider benefits to both air quality and climate change.
- 1.7 Furthermore, the legislative context is different for the issues of air quality and climate change. Air quality has tightly prescribed and regulated emission levels applicable at a local level. Climate change is driven by national and international level agreements to reduce overall emissions, with policy aims across sectors, including within land use planning and local transport policy.

- 1.8 The county council and borough and district councils across Surrey are taking steps to reduce emissions from across the local transport network and in air quality in target areas. However while there is a strong case to reduce emissions for health, economic and environmental reasons, available funding is currently insufficient and county council capital borrowing is severely constrained.
- 1.9 This strategy provides evidence of the problem in Surrey and sets out the county council's approach and activities, in the context of funding challenges.

2. Defining the Problems

- 2.1 Air pollution is the largest environmental risk to public health. It contributes to cardiovascular disease, lung cancer and respiratory diseases. Bad air quality affects everyone and it has a disproportionate impact on the young and old, the sick and the poor⁹.
- 2.2 Climate change will have impacts at all scales. Parts of Surrey are already badly affected by flooding, and this is likely to become more frequent and severe with climate change, along with the extensive impacts of climate change nationally and globally.

Air quality

What causes air quality problems?

- 2.3 Air pollutants from transport sources that impact significantly on health are Nitrogen dioxide (NO₂) and Particulate Matter (both PM₁₀ and PM_{2.5}). Where pollutant levels are shown to be higher than nationally set acceptable levels (known as 'Air Quality Objectives'), locations are declared Air Quality Management Areas (AQMAs). For more information on AQMAs, please see Appendix 1 (Frequently Asked Questions). All AQMAs in Surrey to date have been declared in relation to excessive nitrogen dioxide (NO₂). The primary source of both NO₂ and also particulate matter in Surrey is road traffic. This reflects the national picture, where transport is identified as the main source of pollution in most AQMAs¹⁰.
- 2.4 Although road traffic volumes in Surrey are significantly higher than those experienced nationally or elsewhere in the South East¹¹, the AQMAs declared are localised to limited sections of the county and Highways England road networks. The exception is the borough of Spelthorne which has been designated in its entirety as an AQMA.
- 2.5 In combination with high road traffic flows, the typical conditions that can give rise to air pollution in exceedance of the national air quality objectives are as shown in Table 2.1 below.

⁹ Defra and Public Health England (2017) Air Quality: A briefing for Directors of Public Health

¹⁰ DEFRA 'Air Pollution in the UK 2016' (2017: 15)

¹¹ Surrey County Council 'Surrey Congestion Programme' (2014)

Highway characteristics	Explanation	Example in Surrey
Narrow highly-trafficked streets with residential properties close to the kerb	Concentrations are often higher where traffic is slow moving, with stop/start driving, and where buildings on either side reduce dispersion	Compton, Guildford
Busy streets where people may spend 1-hour or more close to traffic	There will be some street locations where individuals may regularly spend 1-hour or more, for example, streets with many shops and streets with outdoor cafes and bars	Cobham High Street. This could also include well-used footpaths alongside busy roads.
Roads with a high flow of buses and/or heavy goods vehicles (HGVs) (which tend to be more polluting per vehicle than cars or vans.)	There will be some street locations where traffic flows are not necessarily high (fewer than 20,000 vehicles per day) but there is an unusually high proportion of buses and/or HGVs	Redhill town centre
Junctions	Concentrations are usually higher close to junctions, due to the combined impact of traffic emissions on two roads, and to the higher emissions due to stop-start driving	Anchor Hill, Knaphill; Level crossings, in Runnymede and Reigate & Banstead; Sunbury Cross, Spelthorne; Crooked Billet Roundabout, Staines.
Roads with significantly changed traffic flows	For instance due to new developments	No AQMAs declared in Surrey on this basis currently.
Bus and coach stations	There may be exposure to air pollution at bus stations or sections of bus stations that are not enclosed, including at nearby residential properties	No AQMAs declared in Surrey on this basis currently.

2.6 The number of monitoring locations are limited by cost and practical reasons, therefore it is possible that some undesignated areas could exceed the national air quality objectives and some areas are at levels approaching the threshold for declaring an AQMA.

¹² Defra (2016) Local Air Quality Management: Technical Guidance Table 7.1: Screening Assessment of Road Traffic Sources

- 2.7 This suggests that, in addition to developing mitigation measures for designated AQMAs, measures which reduce NO₂ and particulate emissions over wider areas should be considered. This approach will also reduce greenhouse gas emissions and support a transition towards a low carbon economy.

What is the extent of air quality problems in Surrey?

- 2.8 Overall, the long term trend since the industrial revolution has been general improvement in air quality. This has been achieved through tightening controls on emissions from industry, transport and domestic sources¹³.
- 2.9 However, in the transport sector, total distance travelled has been increasing¹⁴ and whilst some vehicles have got cleaner, 'real world' emissions have not reduced as much as expected, especially for diesel vehicles.
- 2.10 There are 28 locations¹⁵ in Surrey that are AQMAs, meaning that they experience high levels of pollutants that are above national limits. A list of all AQMAs in Surrey is attached as Appendix 3. In Surrey, the main pollutants are NO₂ and PM₁₀. PM_{2.5} is also considered to be an issue although no AQMAs have been declared on this basis to date; PM_{2.5} is not routinely measured by local authorities. There is ongoing partnership work to produce a county-wide model which will show areas affected by PM_{2.5}.
- 2.11 Nine of the eleven boroughs and districts in Surrey have declared AQMAs in their areas. Mole Valley and Tandridge have not declared any to date. Appendix 2 shows the location and extent of AQMAs in Surrey and further details are provided in Appendix 3, along with the pollutants for which they were declared. Each AQMA varies in size, from those specific to junctions or stretches of roads, up to the full area of an individual borough/district. Appendix 4 provide further information on AQMA pollution levels.

¹³ Department for Environment Food and Rural Affairs (DEFRA), 2017

¹⁴ Transport Statistics Great Britain 2017, published by the Department for transport and available at <https://www.gov.uk/government/statistics/transport-statistics-great-britain-2017>

¹⁵ As of November 2018

What are the health and environmental impacts of poor air quality?

- 2.12 Poor air quality has detrimental effects on human health and the environment. The Public Health Outcome Framework¹⁶ reports that 4.6% of deaths in Surrey during 2015 were attributable to particulate air pollution.
- 2.13 Children, older people, pregnant women and people with long term health conditions are more vulnerable to the effects of air pollution.
- 2.14 Areas of high deprivation suffer a greater burden from air pollution-related ill health, contributing to inequalities in health (Royal College of Physicians, 2016; World Health Organization¹⁷).
- 2.15 It is recognised in the government’s air quality strategy that:
- “Exposure to air pollution can have a long-term effect on health, associated in particular with premature mortality due to cardiopulmonary (heart and lung) effects. In the short-term, high pollution episodes can trigger increased admissions to hospital and contribute to the premature death of those people that are more vulnerable to daily changes in levels of air pollutants. Air pollution also has negative impacts on our environment, both in terms of direct effects of pollutants on vegetation, and indirectly through effects on the acid and nutrient status of soils and waters.”¹⁸*
- 2.16 The health and environment effects of nitrogen dioxide and particulate matter are further detailed in Appendix 5.
- 2.17 Pedestrians, cyclists, and drivers and passengers in vehicles are all affected. Occupants of vehicles having been shown to be exposed to the same, if not higher high levels of pollutants: *“High pollutant exposure levels in urban areas, particularly under typical commute driving conditions, exposes vehicle occupants to health risks that are often significantly greater than that for those travelling by other modes”¹⁹.*

Why have AQMAs been revoked in Surrey in the past?

- 2.18 Four AQMAs have been revoked since 2011 where concentrations of pollutants have reduced to below the legal maximum level (leaving 26 AQMA locations in Surrey that have not yet been revoked). There are a number of factors at play which may have helped reduce pollutant levels, so it is not

¹⁶ PHOF Indicator 3.01

¹⁷ <http://www.who.int/airpollution/ambient/health-impacts/en/>

¹⁸ [Air Quality Strategy for England, Scotland, Wales and Northern Ireland \(Defra, July 2007\)](#), Volume 1, para 14)

¹⁹ <https://travelwest.info/project/ee-162-air-pollution-exposure-among-motor-vehicle-occupants>

possible to state a firm reason why pollutants have fallen in some locations and not others.

- M23 (South) – revoked due to a fall in the pollutant levels meant that the objectives were met and the AQMA could be revoked.
- A217 Rushworth Road, Reigate – revoked due to a fall in the pollutant levels meant that the objectives were met and the AQMA could be revoked.
- A23 / Dean Lane, Hooley – revoked due to a fall in the pollutant levels meant that the objectives were met and the AQMA could be revoked. However, note that while this stretch of the A23 was revoked, a larger stretch was declared an AQMA, also in Hooley.
- Hindhead – revoked following reduced emissions in the town centre after construction of the Hindhead Tunnel on the A3 in 2011, which diverted traffic away from the village.

Greenhouse gas (carbon) emissions

Sources of greenhouse gas (carbon) emissions from transport

2.19 At a national level cars contribute over half of all transport sector emissions, with HGVs and vans as the next largest contributors (Figure 2.1). In this strategy we will refer to all greenhouse gases (GHGs) i.e. those which contribute to climate change, as ‘carbon emissions’.

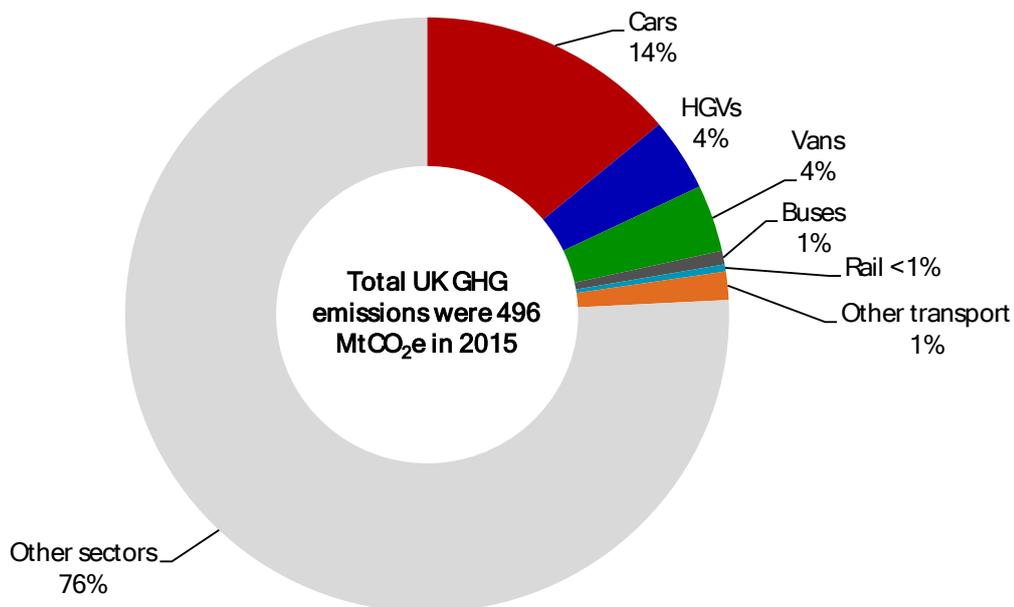


Figure 2.1 Share of domestic transport GHG emissions (2015) (Source: Committee on Climate Change)

Level of carbon emissions from transport in Surrey

- 2.20 Surrey has a higher than average proportion of carbon emissions from transport compared to other sectors, due to high traffic volumes and low levels of industry. This includes through traffic on the strategic road network (M25, M3, M23 and A3) passing through the county. Variations between boroughs and districts reflect the layout of the strategic road network; with areas such as Guildford and Tandridge having the highest emissions and Woking and Epsom & Ewell having the lowest emissions. Comparisons between areas on this basis are not informative for targeting carbon reduction measures.
- 2.21 The change in road transport carbon emissions in Surrey between 2005 and 2015 is shown in the chart below²⁰. Emissions have reduced over the past decade, however there has been a slight but concerning increase in recent years. There may be a variety of factors influencing this, including improving the accuracy of the calculation of emissions factors and increases in distance travelled in particular by vans and HGVs.

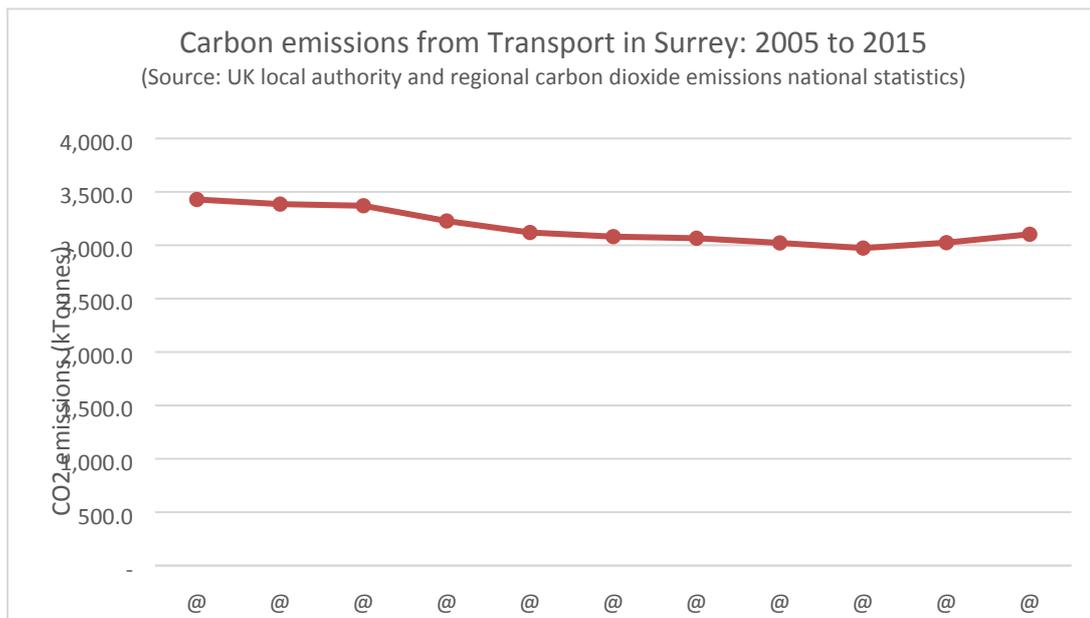


Figure 2.2 Carbon emissions from transport in Surrey 2005 to 2015

- 2.22 Overall carbon emissions from road transport are dependent on the emissions per mile and the total miles driven. Over the past five years nationally, emissions intensity i.e. the amount of carbon emissions per km travelled (gCO₂/km) has reduced but total distances travelled have increased. This emissions intensity improvement is due to a combination of petrol and diesel fuel efficiency improvements and to a lesser extent the increasing use of

²⁰ UK local authority and regional carbon dioxide emissions national statistics: 2005-2015 (BEIS, 2015)

electric vehicles. Numbers of biofuel vehicles (fueled by biodiesel and bioethanol which also produce lower carbon emissions) have remained steady²¹.

- 2.23 At a national level, the Committee on Climate Change (CCC) advises that the transport sector's contribution to overall carbon emissions reductions should be a 44% reduction in emissions between 2016 and 2030. This comprises a shift to sustainable modes of transport, an increase in electric and biofuel vehicles, emissions reductions from petrol and diesel vehicles and efficiency improvements in the freight industry²².

Council vehicle fleet

- 2.24 Carbon emissions from the county council's vehicle fleet and staff business travel vary year on year. There was a small reduction in emissions between 2011/12 and 2016/17, but there were large fluctuations in the intervening years, which occurred because of a range of factors, including variations in service demand, such as the Fire and Rescue Service response to floods which had large impacts on fuel consumption.

What are the impacts of climate change?

- 2.25 Climate change will have numerous negative impacts on people and natural systems around the world. If emissions are not reduced, countries will face severe impacts, ranging from disruption and loss of life from more extreme weather events to far reaching impacts such as food shortages and mass migration. The Met Office provides further information of the global impacts, based on international evidence²³.
- 2.26 In the context of the south east of England, localised risks for Surrey include drought, extreme heatwaves, flash flooding, major river flooding incidents, land movement, severe environmental pollution and the spread of infectious human and animal diseases and wildfires²⁴.
- 2.27 Climate change has been predicted to lead to an increase in the frequency and severity of summer heatwaves, which is expected to further exacerbate air quality problems, through a higher frequency of summer pollution episodes²⁵.

²¹ [Committee on Climate Change \(2017\) Report to Parliament](#)

²² [Committee on Climate Change \(2017\) Report to Parliament](#)

²³ Met Office (2018) <https://www.metoffice.gov.uk/climate-guide>

²⁴ Surrey's Local Resilience Forum Strategic Climate Change Guidance (2016)

²⁵ Defra (2007) Air Quality and Climate Change: A UK Perspective

3. Opportunities and challenges

- 3.1 Changes in lifestyles, new technology and new vehicle ownership models are creating opportunities to act to reduce emissions from travel, against a backdrop of increased public concern over the impact of emissions on health and climatic change. However, these effects are offset to some degree by an increasing demand for travel. A schedule of opportunities and challenges with regards to reducing emissions in Surrey is included as Appendix 6.

Case studies of opportunities

Car club including electric vehicles

- 3.2 The principal car club in Surrey is operated by Enterprise, in partnership with the county council. There are currently 23 car club vehicles in operation within Surrey of which roughly a quarter are electric and further vehicle locations are planned. Car clubs in general provide opportunities for more efficient and flexible travel, reducing the need to own a car and discouraging unnecessary car travel. Car clubs and more specifically, EVs have proven popular with users in Surrey and are offered at cheaper rates to petrol or diesel fuelled cars.

Emissions based parking charges for car park season ticket holders

- 3.3 Woking Borough Council has introduced graduated parking charges for season ticket holders based on the CO₂ emission rating of the vehicle. A 50% discount is given for drivers of the lowest emission vehicles ('CO₂ band A') and; a 25% discount is permitted for 'band B' vehicles. Those rated in 'band G' must pay a 25% surcharge.

EV charge points at county council workplaces and on street

- 3.4 Through government grants, SCC has installed a small network of EV charge points in county council workplaces, at highways depots and also three on-street charge points in Guildford. These points are currently available to car club users and staff. It is intended that the emerging SCC Electric Vehicle Strategy (2018) will help us to provide more charge points and make them accessible to more users.

Green scheme for electric vehicles²⁶

- 3.5 Guildford Borough Council has initiated a Green Scheme to incentivise electric car use in the borough. The permit scheme allows owners of electric vehicles to access discounted car parking in public car parks. The scheme does not apply to short-stay spaces.

Anti-idling campaign

- 3.6 Together with Reigate and Banstead Borough Council, SCC installed anti-idling banners encouraging drivers to turn off their engines while waiting at the approaches to Reigate level crossing, and so reduce their vehicle emissions with the aim of improving local air quality. A downward trend in pollutants was observed within the vicinity of the level crossing.

²⁶ <https://www.guildford.gov.uk/carparks>

4. Aim and preferred approach

Low emissions transport strategy aim

To reduce polluting emissions from road transport across the county which are harmful to health and the environment, and work with partners to achieve legal compliance for air quality locally.

- 3.7 The county council will reduce emissions of greenhouse gases, nitrous oxides and particulate matter and reduce exposure to poor air quality, through four key opportunity areas:
- i. **Transport networks and infrastructure for sustainable travel** such as highway improvements for walking, cycling and passenger transport and supporting the growth of Surrey's public EV charge point network.
 - ii. **Travel behaviour change** such as initiatives and campaigns in schools and workplaces, road safety initiatives, expanding car clubs, encouraging lift sharing, raising awareness and public understanding of air quality and climate change.
 - iii. **Partnership working** such as working with district and borough councils on air quality matters, advising on transport impacts of new development, strategic planning input to Local Plans and partnerships with transport providers for modal shift and lower emissions vehicles, including bus companies and train operators.
 - iv. **Reducing emissions from the council's own estate and operations** such as influencing staff business travel, procuring electric vehicles / ultra-low emissions fleet vehicles where viable and where value for money is shown and opportunities in highways operations and maintenance supply chain.

5. Delivery and funding

- 5.1 Many activities to minimise and reduce emissions from transport are already ongoing and the council will continue to deliver these and seek funding where necessary, to secure the future of these and expand their scale and scope. A number of additional opportunities are identified for the council to investigate further.
- 5.2 Activities to deliver this strategy are set out in Table 5.1.

Table 5.1: Activities to deliver the Low Emissions Transport Strategy

Action	Lead service
Transport networks and infrastructure for sustainable travel	
Opportunities to reduce emissions will be considered within Surrey County Council's Local Transport Strategy for each district and borough, and scheme proposals that result will be added to the corresponding Forward Programme.	Transport Policy
Develop and implement Local cycling plans for each district and borough that are responsive to local needs and concerns for the development of high quality and joined up cycle routes (see Cycling strategy)	Transport Policy
Develop walking strategy, considering issues such as surface maintenance, vegetation growth, pedestrian segregation from heavy traffic, filtered permeability and street-user hierarchy which prioritises pedestrians more than today, removing pavement clutter, preventing parking on pavement, preventing 'rat-running' and actual and perceived safety issues.	Transport Policy
Vehicle and cycle parking standards include guidelines for provision of EV charging points in new developments	Boroughs and Districts to implement
Review of signal timings endeavours to encourage walking and cycling, whilst not excessively increasing queueing traffic.	Network Management
HGV re-routing away from AQMAs, whilst taking account of local business needs and where this does not cause negative air quality impacts elsewhere.	Network Management

Co-ordinate roadworks to minimize congestion impacts and temporary emissions increases	Network Management
Take account of air quality issues in reviews of parking and loading restrictions via the Controlled Parking Zone rolling programme	Highways
Keep up to date with opportunities and the evidence base for emissions-based parking charges and/or Workplace Parking Levy, including at county council buildings	Transport Policy
Make rights of way more useful/suited for every day journeys to work and school, through Rights of Way strategic plan	Countryside
Action	Lead service
Travel behaviour change	
Continue comprehensive offer of Bikeability cycle training to pupils and bespoke training for adults	Road Safety and Active Travel
Support schools to develop and implement travel plans using ModeSHIFT stars and deliver campaigns and initiatives including 'Walk It'	Road Safety and Active Travel Living Streets
DriveSMART campaign and partnership initiatives	Road Safety and Active Travel
Seek funding for further sustainable travel campaigns and events to promote increased walking, cycling and public transport use	Road Safety and Active Travel
Raise public awareness and understanding of air quality ²⁷ via Healthy Surrey website and self-help for vulnerable people in the most severe periods of air pollution via the Air Alert service ²⁸ .	Surrey Air Alliance
Investigate non-infrastructure policy incentives for EVs through EV strategy implementation	Transport Policy
Liftsharing website for workplaces, council staff and the public https://liftshare.com/uk/community/surrey	Liftshare

²⁷ From National Highways and Transport surveys we know that people care about air quality, but that they felt uninformed about the issue.

²⁸ The Air Alert system within Surrey operates in 7 districts and boroughs; find out more at: <http://www.airalert.info/surrey/default.aspx>

Action	Lead service
Partnership working	
Work collaboratively with boroughs and districts to improve air quality in AQMAs and county-wide background air pollution and carbon emissions reduction, in particular working with district and borough councils to support them to monitor and assess air pollution levels and develop and delivering joint Air Quality action plans in AQMAs	Transport Policy and Boroughs and Districts
Work with public transport operators to increase the appeal of public transport e.g. bus priority schemes, public transport interchange improvements and lobbying for rail improvements including electrification and capacity improvements via Surrey Rail Strategy	Strategic Transport
Work with public transport operators to reduce emissions from buses and community transport where most feasible, including delivery of electric buses and bus charging points at Park and Ride for Guildford	Strategic Transport
Review evidence and national policy to take account of impact on air quality when setting local speed limits, in future review of county speed limit policy.	Road Safety and Active Travel
Work with car club operator to expand car hire, including electric vehicles, for personal and business use which reduces the need to own a car (see Car Club strategy)	Transport Development Planning
Review Surrey Transport Plan Freight strategy to give additional weight to air quality problems and consider ways to tackle emissions Heavy Goods Vehicles e.g. supporting infrastructure for low emissions HGV fuels learning from the Low Emissions Freight and Logistics Trail ²⁹ and re-routing. Also to address the growth in mileage and emissions of Light Goods Vehicles (vans) e.g. through and low emissions local delivery partnerships/technology solutions.	Transport Policy
Develop business plan to procure partner to install and operate electric vehicle charge points on-street and off-street strategic locations	Transport Policy

²⁹ *Low Emissions Freight and Logistics Trial (LEFT)*. In 2017, OLEV and Innovate UK awarded £20 million of grant funding to 20 projects, leveraging £12m in private investment. The aim is to support industry-led trials of alternative propulsion technologies for commercial fleets in the UK, including electricity, hydrogen and gas. This will include emissions testing of a number of the latest gas HGVs. The results of this testing will be used to inform decisions on future government policy and support for natural gas as a potential near term, lower emission fuel for HGVs. (Road to Zero (DfT) 2018)

Advise Local Planning Authorities to manage transport impacts of new developments, apply of Manual for Streets ³⁰ design principles	Transport Development Planning
Provide and co-ordinate strategic planning advice on Local Plan development	Transport Development Planning
Implement development-related travel plans Good Practice Guide	Transport Development Planning
Participate in ACT Travelwise to share best practice across public and private sectors on a regional basis	Transport Development Planning
Action	Lead service
Council's own operations and estate:	
Maintain and expand electric vehicle charge points at council offices (9 charge points in October 2018)	SCC Property
Continue staff Travel Plan to encourage sustainable travel modes and remote working using technology. Provide electric pool cars to staff, via car club Car lease scheme for low emissions cars (less than 75gCO/km)	Corporate / Business services
Investigate procurement of lower CO emissions and higher Euro standard vehicles, including electric vehicles, in the council fleet, where most operationally feasible and cost effective	Highways Fire and Rescue Other relevant services
Pilot and evaluate electric fire engine	Fire and Rescue
Investigate street lighting further efficiency and business case for conversion to LEDs	Highways Asset Management
Specification of highway maintenance materials and methods e.g. use of recycled materials and minimizing waste and carbon emissions	Highways Asset Management

5.3 Surrey's [Local Transport Strategies](#) provide a plan for addressing transport problems and opportunities on a district and borough basis. These include

³⁰ <https://www.gov.uk/government/publications/manual-for-streets>

measures to improve air quality, including within AQMAs and should be informed by Air Quality Action Plans.

Partnership working arrangements for air quality

5.4 The county council will work in partnership with boroughs and districts, as part of the Surrey Air Alliance, and in reporting to the Surrey Health and Wellbeing Board, to fulfil its statutory duties, by:

- Providing timely responses to all AQMA-related consultations received from the borough and district councils; enquires should be sent to surreytransportplan@surreycc.gov.uk;
- Meeting reasonable requests for traffic and other data; in support of this, the county council will develop an air quality data protocol, including potential charges, if requests cannot be met within existing resources of the council and/or additional data collection is required;
- Incorporating appropriate physical transport measures into infrastructure schedules e.g. within the local transport strategies³¹;
- agreeing options for amending and enforcing existing parking and loading regulations e.g. unloading times restricted to off-peak periods;
- supporting travel choices that are better for air quality through appropriate infrastructure provision and consider air quality issues in planning and other processes and areas of responsibility; and
- Bringing air quality-related proposals to the local / joint committees.
- Communicating and collaborating with Defra.

5.5 Recognising the need for collective action to address air quality issues, officers from Surrey's eleven district and borough councils and Surrey County Council (Transport Policy and Public Health) formed the Surrey Air Alliance (SAA) in 2016. The SAA aims to share best practice and work together at an operational level to address air quality issues across a number of areas, including: joint approach to communication and awareness raising; influencing behaviours, such as decisions around vehicle fleets; addressing air quality through planning policy; and transport and infrastructure measures to reduce emissions from road traffic, including through increasing uptake of low emission vehicles.

5.6 Highways England has an important role to play in improving air quality, and in 2017 released a new Air Quality Strategy³² which includes the intention to

³¹ As per government guidance, which suggests that air quality measures should be incorporated into Local Transport Plans. Delivery will be subject to funding

³² Highways England 'Our strategy to improve air quality' 2017: https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/634933/N160081_Air_Quality_Strategy_Final_V18.pdf

support local authorities as they explore options for their local air quality plans and work with others to develop and deliver policies to improve air quality.

- 5.7 In conjunction with the relevant lead borough or district council, the county council will continue to work in partnership with Highways England (HE) to address air pollution, particularly where AQMAs are declared on the HE network within Surrey.
- 5.8 The Surrey Energy and Sustainability Partnership will be consulted where appropriate however currently this group has a focus on domestic energy efficiency and does not focus on addressing emissions from transport.

Funding of activities to reduce emissions

- 5.9 Some activities outlined previously (Table 5.1), are dependent on securing funding, if these are not statutory responsibilities. There is no specific funding within current Surrey County Council budgets specifically to address air quality or carbon emissions reduction.
- 5.10 Funding for the delivery of sustainable transport schemes and congestion relief schemes which have air quality and carbon reduction objectives integrated within them, is drawn from:
- Local Enterprise Partnership (LEP) ‘Local Growth’ and ‘Structural’ funds)
 - Borough, district and county council capital match funding, where available
 - Developer contributions e.g. Section 106 and Community Infrastructure Levy (CIL) or successor schemes
 - Defra Clean Air Fund
 - Defra for grants to aid air quality monitoring³³
 - Department for Transport direct funding schemes
 - Other funding sources including charities, when and where available.
- 5.11 CIL and LEP-funded schemes are identified through the Surrey Transport Plan process and the associated local transport strategies and so these are very important in seeking to address areas of poor air quality, or trying to reduce wider emissions. The county council works with borough and district councils to ensure the schemes are given high priority in the CIL Regulation 123 Lists³⁴ and when calls for funding from the LEP and other sources are forthcoming.

³³ Borough and District councils can apply for annual funding from Defra for grants to aid air quality monitoring. The County Council’s Transport Policy and Transport Policy teams can assist in the development of bids for such funding.

³⁴ The mechanism by which districts and boroughs can allocate funding to certain schemes

The county council and its partners regularly bid for funding from external sources. Examples of funding bids are given in Table 5.2.

Fund	Year	Project	Award
Local Growth Fund (DfT, via Local Enterprise Partnerships)	2015-18	Sustainable transport capital schemes in towns across Surrey - https://www.surreycc.gov.uk/roads-and-transport/policies-plans-consultations/major-transport-projects	£56m
Air Quality Grant scheme (Defra)	2017-18	Awareness and behaviour change campaign in schools	£0.145m
Air Quality Grant scheme (Defra)	2017-18	EuroVI bus retrofit	Bid submitted, unsuccessful
Low Emissions Bus Scheme (DfT)	2017-18	9 electric buses for Park and Ride services in Guildford	£1.740m
Access Fund for sustainable travel revenue fund (DfT)	2017-20	Living Streets Walk To: walking and cycling to school	Share of £7m pot across 10 authorities
Air Quality Grant scheme (Defra)	2016-17	EV strategy development and EV charge points in AQMAs	Bid submitted, unsuccessful
Access Fund for sustainable travel revenue fund (DfT)	2016-17	Travel SMART East Surrey expansion	Bid submitted, unsuccessful
Car Club Challenge Fund (DfT)	2015-16	Electric vehicle car club	£0.100m
Access Fund for sustainable travel revenue fund (DfT)	2015-16	Travel SMART further roll out West Surrey focus	£1.684m
Go Ultra Low City scheme (OLEV)	2014-15	Electric vehicle charge point network and EV demonstration	Bid submitted, unsuccessful
Public sector estate chargepoint scheme	2013-15	Electric vehicle charge points at county council sites and East Surrey College	£ 0.058m
Local Sustainable Transport Fund (DfT)	2012-15	Travel SMART in three towns, including revenue and capital projects	£25.000m

6. Indicators

6.1 We will assess the effectiveness of this strategy ahead³⁵ of the next review of this strategy, using a range of indicators as follows:

Local Air pollution:

- Number of AQMAs within Surrey (total number, new declarations and areas revoked)
- County wide variations in air pollution levels and health costs

Greenhouse gas emissions:

- Carbon emissions from road transport in Surrey in the context of the Climate Change Act and the national carbon budgets³⁶
- Carbon emissions from the county council's vehicle fleet³⁷
- Carbon emissions from council staff business mileage

Travel behaviour:

- Walking and cycling rates from National Travel Survey
- School travel to school mode share
- Number of cycle trips on certain routes
- Number of physically active adults ³⁸
- Bus patronage
- Number of car club members
- Number of electric vehicles registered in Surrey

New infrastructure delivery:

- Length of new segregated and non-segregated cycling routes
- Number of electric vehicle charge points on county council estate (workplaces and on-highway)
- Number of car club vehicles (and EVs)

³⁵ From the time of the start of this Low Emissions Transport Strategy (November 2018).

³⁶ At a national level, the Committee on Climate Change (CCC) projects the cost-effective path for the transport sector's contribution to overall carbon emissions reductions is a 44% reduction in emissions between 2016 and 2030. This comprises an increase in electric vehicles, emissions reduction of conventional fuel vehicles, an increase in biofuels, freight operator efficiency improvements and modal shift to active/public transport, against a background increase in population ([2017 CCC Report to Parliament](#)).

³⁷ The council's has an emissions reduction target of 10% over 5 years, by 2018/19, which covers all emissions from our estate and operations, including buildings, fleet and business travel.

³⁸ PHOF Indicator 2.13.

Appendix 1: Air quality management areas – frequently asked questions

1. What is the air pollution like in Surrey?

Generally, the air quality within Surrey is good. However, in some areas, monitoring has identified that the average annual level of certain pollutants, primarily Nitrogen Dioxide (NO₂) is higher than the Government's National Objective for those pollutants. In these cases, districts and boroughs must declare an Air Quality Management Area (AQMA).

The National Air Quality Strategy sets air quality objectives for England and Wales. These air quality objectives have been set with health impacts in mind. The aim is to ensure that everyone is able to enjoy acceptable levels of air quality that meet these objectives, posing no significant risk to human health or quality of life.

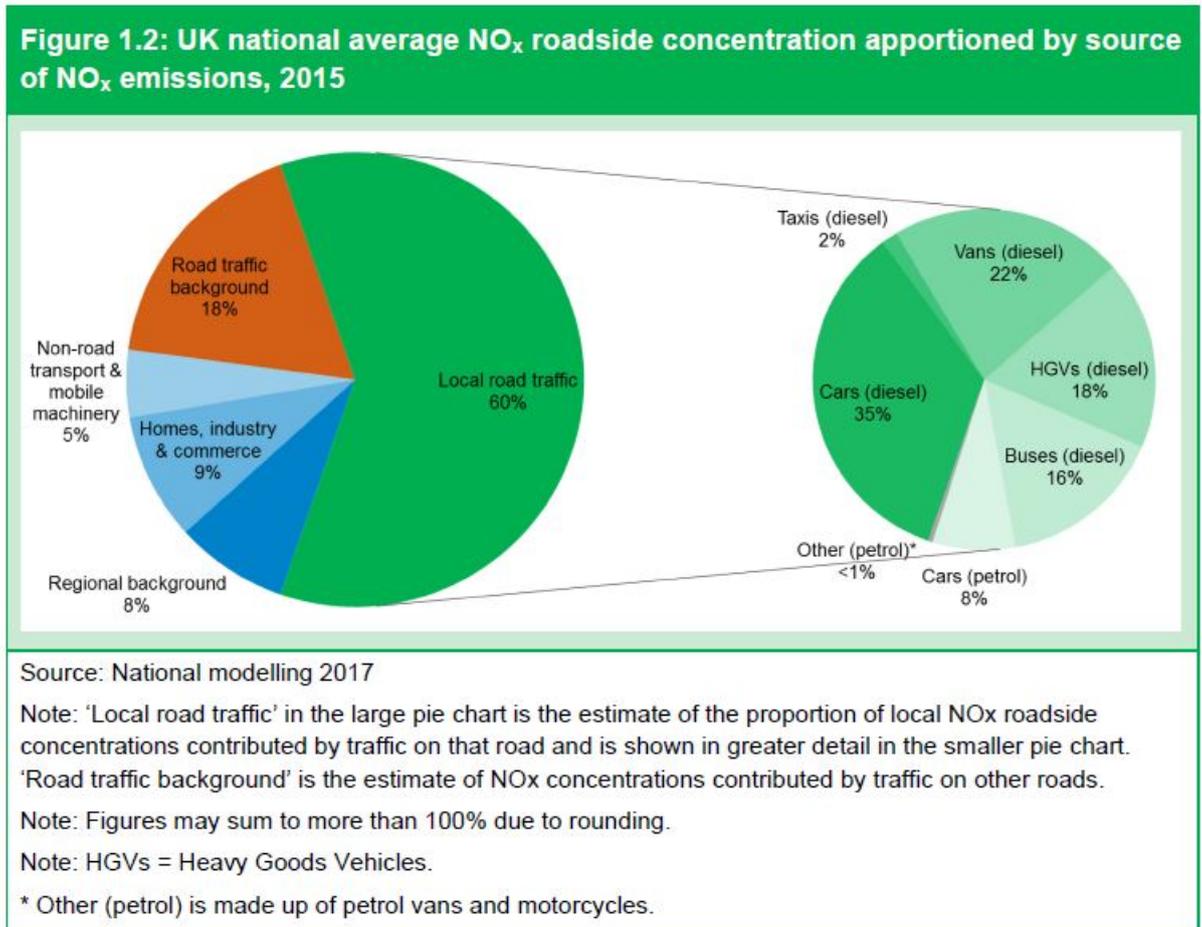
2. How is air quality monitored?

Under the Local Air Quality Management process (LAQM), District and Borough councils are responsible for monitoring air quality in their areas. Usually this is carried out using diffusion tubes, which are sent to laboratories for analysis. Some districts and boroughs also have real time analysing equipment. More information about monitoring can be read in each district and borough's Annual Status Report (ASR) which can be found on their websites.

Progress reports are then produced annually using the results from the monitoring and using modelling programs to assess the air quality in the borough, and to help inform any action taken to improve air quality.

3. Where does nitrogen dioxide come from?

The burning of coal, natural gases and fuel produce oxides of nitrogen (NO_x) emissions, mainly in the form of Nitrogen Oxide (NO). Chemical reactions then occur in the atmosphere with NO, which produces Nitrogen Dioxide. The main source of NO₂ emissions are from tailpipe emissions from internal combustion engines in road vehicles. The chart below breaks down the main sources of NO_x in the UK.



Source: DEFRA/DfT 'UK plan for tackling roadside nitrogen dioxide concentrations' Technical Report July 2017 (Figure 1.2, p.10)

4. What are the health effects associated with high NO₂ levels?

Nitrogen Dioxide can have both long and short term health effects on humans. Short term effects include irritation of the eyes and throat and can lead to the increase of symptoms of respiratory conditions including asthma, and bronchitis. The long-term health effects will increase the susceptibility to respiratory conditions among healthy individuals, and lead to gradual deterioration in health of people already suffering from respiratory problems, particularly in elderly people.

5. What is an Air Quality Management Area?

The Department for Environment Food and Rural Affairs (DEFRA) has a website dedicated to air pollution, and it describes how each local authority in the UK has been required to carry out assessments of air quality in their area since December 1997³⁹. Where local authorities find locations where pollutant levels are not likely to meet or are already not meeting national objectives, the authority must declare an air quality management area (AQMA). The local authority will then develop an action plan for the AQMA with measures to improve the air quality in that area and reduce pollutant levels to within legal limits.

6. What are the implications of an Air Quality Management Area (AQMA)?

An AQMA means that, within that area, the levels of a certain pollutant are above those required by legislation for health reasons. Any declaration, in summary, means that further monitoring of that pollutant has to be undertaken and a plan has to be put in place to improve the air quality within it. Therefore, the implications of an AQMA are all to encourage positive steps.

7. How many local authorities have declared AQMAs in Surrey?

Nationally, over 250 local authorities have active AQMAs declared within their boroughs. Within Surrey, 9 of the 11 districts and boroughs have one or more designated AQMAs. Further information on where AQMAs have been declared can be obtained from <https://uk-air.defra.gov.uk/aqma/maps>.

8. What steps are local authorities taking to resolve the matter?

Where they declare an AQMA, districts/boroughs must aim to produce an Air Quality Action Plan (AQAP) has to be produced within 12 months. The AQAP is produced in consultation with Surrey County Council as the highways authority, and will identify steps which can be implemented to try improve the Air Quality within the AQMA below the national objectives.

9. What role does the county council have in local air quality management?

Under the Environment Act 1995, the county council can make recommendations to the district/borough council in respect of any air quality review and assessment, and the preparation of any particular action plan or revision to an action plan.

³⁹ <https://uk-air.defra.gov.uk/aqma/>

The county council is also a statutory consultee on Annual Status Reports⁴⁰.

In practice this means that the county council will engage with districts and boroughs where potential AQMAs become apparent, and when they are declared will engage and inform the development of the Air Quality Action Plan; input could include traffic surveys and potential options for reducing pollutant levels through highway measures.

10. Does the AQMA stay in place forever?

No. Following a review, an AQMA can be revoked entirely or reduced if pollutant levels have dropped below the required limits, and will continue to be below these limits. Usually, this is after three straight years of compliant levels.

11. Where can I find copies of district/borough council's air quality reports and details of declared AQMAs?

All annual air quality status reports are filed and submitted to DEFRA who then publish the reports on their website.

⁴⁰ Local Air Quality Management Policy Guidance (PG16) April 2016; Defra

Appendix 3: Air Quality Management Areas (AQMAs) in Surrey and their pollutants

Borough or district	Name of AQMA	Number of properties affected	Pollutants	Highway authority
Elmbridge	Esher High Street	61	NO ₂	Surrey CC
	Walton Road, Molesey	237	NO ₂	Surrey CC
	Weybridge High St	78	NO ₂	Surrey CC
	Walton High Street	27	NO ₂	Surrey CC
	Cobham High Street	90	NO ₂	Surrey CC
	Hampton Court	567	NO ₂	Surrey CC
	Hinchley Wood	137	NO ₂	Surrey CC
Epsom & Ewell	Ewell High Street	>10	NO ₂	Surrey CC
Guildford	The Street, Compton	3	NO ₂	Surrey CC
Reigate & Banstead	M25	53	NO ₂	Highways England
	Horley (near Gatwick)	1568	NO ₂	Surrey CC, West Sussex CC and Highways England
	A217 / Blackhorse Lane	1	NO ₂	Surrey CC
	A2022/A240 Drift Bridge	2	NO ₂	Surrey CC
	Reigate High Street / West Street	197	NO ₂	Surrey CC
	A23 Merstham High Street	37	NO ₂	Surrey CC
	A217 Reigate Hill	111	NO ₂	Surrey CC

	A23 / Redhill Town Centre	35	NO ₂	Surrey CC
	A23 Hooley	52	NO ₂	Highways England
Runnymede	M25/ Egham and Pooley Green	40	NO ₂ & PM ₁₀	Highways England
	Addlestone town centre	174	NO ₂	Surrey CC
Spelthorne	Spelthorne	Whole borough	NO ₂	Surrey CC and Highways England
Surrey Heath	Camberley	105	NO ₂ & PM ₁₀	Highways England
Waverley	Farnham	483	NO ₂	Surrey CC
	Godalming	40	NO ₂	Surrey CC
Woking	Anchor Hill	33	NO ₂	Surrey CC
	A320 Guildford Road, Woking	4 houses plus frontage of The Heights	NO ₂	Surrey CC

Last updated: November 2018

Air Quality Management Areas as per Defra web site 13 November 2018. <https://uk-air.defra.gov.uk/aqma/list?la=S&country=england&pollutant=all>

Roads under ministerial direction:

Borough or district	Name of road under ministerial direction	Number of properties affected	Pollutants	Highway authority
Surrey Heath, Guildford and Rushmoor	A331	0	NO ₂	Surrey CC and Hampshire CC

Appendix 4: Surrey AQMAs and their levels of NO₂

Data in this table uses the most recently published Annual Status Monitoring Reports.

Borough	AQMA name	AQMA Description	Is air quality in the AQMA influenced by roads controlled by Highways England?	Level of Exceedance (maximum monitored/modelled concentration at a location of relevant exposure)	
				At declaration (µg/m ³)	Most recently published Annual Status Monitoring Report (µg/m ³)
Elmbridge	Walton High St	An area encompassing part of the High Street, Walton-on-Thames, between its junction with Hepworth Way/Church Street and Ashley Road/Hersham Road	Yes	42.3	35.6
Elmbridge	Weybridge High St	An area encompassing Balfour Road, Church Street, High Street and Monument Hill, Weybridge.	Yes	62	45
Elmbridge	Hampton Court	An area encompassing parts of Hampton Court Way and Riverbank.	No	50.7	38.7

Elmbridge	Cobham High St	An area along the High Street, Cobham	Yes	39.5	34.1
Elmbridge	Hinchley Wood	An area encompassing part of the A309 Kingston Bypass between Littleworth Road and Manor Road North.	Yes	57.7	38.3
Elmbridge	Esher High St	An area extending along the High Street, Church Street and including parts of Esher Green and Lammas Lane.	Yes	62.1	44.9
Elmbridge	Walton Road, Molesey	An area extending 50m either side of the centre line of Walton Road, Molesey between its junction with Tonbridge Road and Esher Road/Bridge Road.	No	55.8	36.8

Epsom and Ewell	Ewell High St	An area encompassing the section of High Street, Ewell from the junction with Spring Street to the mini roundabout at the junction with Cheam Road and continues a further 30 metres south on High Street Ewell	No	63	42
Guildford	Compton	A section of B3000, The Street, Compton	No	n/a	n/a
Reigate and Banstead	M25	The length of the M25 to a distance 30m either side of the carriageway between Junction 7 and the point to the west of Junction 8 where the motorway meets the borough boundary.	Yes	43	No exceedances measured
Reigate and Banstead	Horley nr Gatwick	An area of the south-west quadrant of Horley near to Gatwick airport.	Yes	43 (see note b)	49.8 (Distance corrected to 41.5 µg/m ³ at nearest site of relevant exposure)

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<p>Reigate and Banstead</p>	<p>A217 / Blackhorse Lane</p>	<p>An area encompassing the house "Highlands" near the junction of the A217 Brighton Road with Margery Lane and Blackhorse Lane</p>	<p>Yes</p>	<p>63 (see note c)</p>	<p>44.7 (Distance corrected to 40.0 µg/m³ at nearest site of relevant exposure)</p>
<p>Reigate and Banstead</p>	<p>A2022 /A240 Drift Bridge</p>	<p>An area encompassing a couple of residential properties immediately to the north of the junction of the A240 (Reigate Road) and A2022 (Fir Tree Road).</p>	<p>Yes</p>	<p>48</p>	<p>No measured exceedances</p>
<p>Reigate and Banstead</p>	<p>Reigate High St / West St</p>	<p>An area encompassing all properties facing on to part of the A23 in Merstham. The area commences on London Road South (south of the junction with School Hill) and extends north along Merstham High Street and then just to the north of the junction with Station Road North.</p>	<p>Yes</p>	<p>47</p>	<p>43.3 µg/m-3</p>
<p>Reigate and Banstead</p>	<p>Merstham High st</p>	<p>An area encompassing all properties facing on to part of the A23 in Merstham. The area commences on London Road South (south of the junction with School Hill) and extends north along Merstham High Street and then just to the north of the junction with Station Road North.</p>	<p>Yes</p>	<p>52</p>	<p>No measured exceedances</p>

Reigate and Banstead	A217 Reigate Hill	Properties within the area of Reigate Hill covering either partially or entirely properties between the level crossing in Reigate Town and J8 of the M25.	Yes	43	No measured exceedances
Reigate and Banstead	A23 / Redhill town centre	Yes: Brighton Road (A23), Marketfield Way (A23), London Road (A25), Station Road (A25), Queensway (A25), St Matthew's (A25), Cromwell Road (A25), High Street (A25)	Yes	48	No measured exceedances
Reigate and Banstead	A23 Hooley	Properties within the Hooley area covering either partially or entirely properties of the following roads, A23 Brighton Road, Star Lane and Church Lane	Yes	77	65.9 µg/m-3 (distance corrected to 52.4 µg/m-3 at nearest site of relevant exposure)
Runnymede	M25 and Pooley Green	Entire length of M25 within the Borough and an extended area in December 2016 to include area in Egham near to railway crossing	Yes	Unknown	Greater than 40 at some locations

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Runnymede	Addlestone town centre	Addlestone town centre traffic light 4 way junction- Brighton Road/Church Road/ Station Road/High Street	No	59	47
Spelthorne	Whole borough	An area encompassing the whole Borough including the majority of Staines, Shepperton, Ashford and Sunbury-on- Thames extending from west of the M25 in the northwest to the River Thames in the southeast.	Yes	up to 80	up to 50
Surrey Heath	Camberley	The strip of land from Frimley Road Camberley to Ravenswood Roundabout Camberley which embraces the M3 Motorway and the houses on both side of the motorway which border the highway.	Yes	44-50 (NO ₂) 26-30 (PM)	32 (NO ₂) 16 (PM)
Waverley	Farnham	Central town location encompassing the main one-way traffic system	No	See Annual Status Report for data and commentary	

Waverley	Godalming	An area encompassing 500m stretch of road from Ockford Road to Flambard Way and incorporating the junction with Station Road and Holloway Hill	No	See Annual Status Report for data and commentary	
Woking	Anchor Hill	A small area covering a 4 way junction at the top of a steep hill.	No	41.5	36.0 (with distance correction)
Woking	A320 Guildford Rd	A small section of the road where Guildford Road meets Constitution Hill and Mount Hermon Road	No	42.2 (modelled)	32.6 (with distance correction)

Last updated: November 2018 using most recent data available from Annual Status Reports compiled by Borough and District councils.

Appendix 5: Policy context

Air quality

This appendix lists the relevant policies and guidance notes for air quality.

European and domestic policies dictate roles and responsibilities for authorities, and also set air quality objectives, which state the legal levels of pollutants which must be complied with.

European policy

The main policy drivers for action to improve and manage air quality in the UK is derived from European legislation. The 2008 ambient air quality directive ([2008/50/EC](#)) sets legally binding limits for concentrations of major air pollutants which impact on public health⁴¹. These include particulate matter (PM10 and PM2.5) and nitrogen dioxide (NO₂), which have direct effects themselves and can also combine in the atmosphere to form ozone (O₃), a harmful air pollutant (and potent greenhouse gas) which can be transported over long distances via weather systems⁴².

The 2008 directive was incorporated into English law in 2010 via the [Air Quality Standards Regulations 2010](#).

UK policy

Key policies for the UK and for the Local Air Quality Management (LAQM) process are:

- Environment Act 1995 (specifically Part IV)
- The Air Quality Strategy for England, Scotland, Wales and Northern Ireland Vol 1 2007
- Local Air Quality Management Policy Guidance (revised 2016)
- Local Air Quality Management Technical Guidance (revised 2016)
- Local Air Quality Management practice notes 2009
- UK air quality plan (2017), consisting of:
 - An overview
 - Detailed plan
 - Technical report

⁴¹ Information source: <https://uk-air.defra.gov.uk/air-pollution/uk-eu-policy-context>

⁴² Cullingworth et al (2015) 15th edition 'Town and Country Planning in the UK' Routledge

- Public Health Outcomes Framework (PHOF), specifically Indicator 3.01

As well as requiring the development of a national strategy, the Environment Act 1995 (section 82, Part IV) set out the statutory duties of local government in relation to air quality and introduced the present system of Local Air Quality Management (LAQM) through which local air quality is monitored, reviewed and reported.

Section 83 of the Act requires local authorities to designate an Air Quality Management Area (AQMA) when one or more of the air quality objectives for each of the seven pollutants included in the [national objectives](#) have not been met, or are unlikely to be met. These areas could be small consisting of one or two houses, or could be much bigger taking in whole towns or administrative areas.

Once an AQMA is declared, the local authority is required to put together a plan to improve the air quality in pursuit of the objectives – this is known as a local Air Quality Action Plan, ideally within 12 months.

In two tier local authority areas such as Surrey, borough and district councils monitor air quality in their areas, declare AQMAs and prepare the action plans.

The revised guidance from Defra (2016) has introduced new responsibilities around addressing levels of PM_{2.5}. Local authorities should work closely with local Directors of Public Health and 'Health and Wellbeing Boards', particularly with regard to PM_{2.5}.

The county council / the local highway authority

Under the LAQM process, obligations are also placed on the relevant county council. Under section 86(3) of the Environment Act: "Where a district council is preparing an action plan, the county council shall, within the relevant period, submit to the district council proposals for the exercise (so far as relating to the designated area) by the county council, in pursuit of the achievement of air quality standards and objectives, of any powers exercisable by the county council."

Relevant powers exercisable by the county council could include:

- Developing policies for the promotion and encouragement of safe, integrated, efficient and economic transport, as set out in the Local Transport Plan⁴³;
- Reducing the causes of congestion and disruption on the road network, by coordinating and managing road and street works effectively, the management of incidents, event planning, the control of parking and the network as a whole under the Network Management Duty (Traffic Management Act 2004); and,

⁴³ Local Transport Act 2000 as amended by the Local Transport Act 2008

- Maintaining and repairing the highway on county roads as a local highway authority.

Road traffic is one of the main contributors to air pollution in Surrey's AQMAs. The county council is the local transport authority for the county roads which make up the majority of the AQMAs in Surrey. There are also AQMAs which involve the Strategic Road Network managed by Highways England. The county council therefore has a key role to play in the mitigation of air pollution in these AQMAs.

Highways England, as the national executive organisation responsible for managing the national strategic road network, also has a role in relation to those AQMAs in Surrey which are on the motorways and trunk roads that pass through Surrey. Such AQMAs cover sections of the M25, M3, A30, A316 and A23. The county council will liaise and work in partnership with Highways England.

Public Health Outcomes Framework

The biggest health burden is understood to be from long-term exposure to small particulate air pollution (PM_{2.5}), which is estimated to decrease life expectancy by an average of six months (DEFRA, 2016). Therefore, PM_{2.5} is included as an indicator in the Public Health Outcomes Framework (PHOF).

Indicator 3.01 of the PHOF considers the fraction of mortality attributable to particulate matter, and it is possible to access the data on a local authority basis. The fraction of mortality attributable to particulate air pollution in Surrey in 2015 was 4.6%, this compared with an average of 4.7% across England⁴⁴.

Action to improve air quality supports delivery of wider public health outcomes, for example: active travel to reduce air pollution can also support getting people more active to reduce obesity; improving air quality in the short term could reduce hospital admissions for cardiovascular and respiratory conditions; and in the long term reduce the burden of disease and increase life expectancy. Therefore, it is important to ensure air quality is considered and aligned with other health improvement interventions and strategies such as physical activity and active travel.

National climate change policy and local context

Climate policy in the UK is underpinned by the Climate Change Act (2008) which is a legally binding framework for climate change mitigation and adaption. This includes legally binding carbon budgets and an 80 percent carbon emissions reduction by 2050 against a 1990 baseline. Key policies include.

⁴⁴ <http://www.phoutcomes.info/public-health-outcomes-framework#page/4/gid/1000043/pat/6/par/E12000008/ati/102/are/E10000030>

The Clean Growth Strategy (2017) sets out the government's current plans for reducing carbon emissions across power generation, industry, transport, commercial buildings, homes, agriculture and land use and waste and Road to Zero (2018) focusing on reducing emissions from vehicles.

The government's strategy and analysis by the Committee on Climate Change, highlight that significant decarbonisation has been achieved in power and waste sectors, but transport and buildings are lagging behind.

The Committee on Climate Change has stated that the cost-effective path to achieving the UK's future carbon budgets in the transport sector includes:

- increase in electric vehicles, in particular 60% of new vehicles should be electric by 2030
- further technological improvements in conventional fuel vehicles,
- an increase in biofuels⁴⁵,
- freight operator efficiency improvements
- demand management and modal shift to active/public transport

The spatial planning and transport functions of local authorities have a key role to play. In land use planning, density of development, settlement size and access to facilities and services have been shown to influence travel behaviours⁴⁶ which are relevant to many of the target outcomes above, in particular demand management and modal shift over the longer term.

The government has sought to influence local authority transport priorities towards low carbon modes of travel through competitive funding allocations such as the Local Sustainable Transport Fund in 2012 to 2016. For capital projects, funding is allocated by government to Local Enterprise Partnerships (LEPs), who then distribute funding for major transport schemes in their areas, on a competitive basis, in the context of their Strategic Economic Plans. These are required to support the delivery of new jobs and homes and the decarbonisation objectives of the government's Clean Growth Strategy. Therefore carbon emissions reduction and other environmental sustainability objectives, including air quality should be supported through these LEP funding allocations.

⁴⁵ Biofuels are considered to have neutral impact, with variations between different fuel types and this is being kept under review. Other change areas (electric vehicles and conventional vehicle efficiency improvements have positive co-benefits).

⁴⁶ Banister and Anable (2009) *Transport Policies and Climate Change* in 'Planning for Climate Change' Earthscan

Appendix 6: Schedule of opportunities and challenges

The table below offers an illustrative and non-exhaustive schedule of opportunities and challenges with regards to reducing transport emissions in Surrey.

Opportunities	Challenges
<ul style="list-style-type: none"> • High potential for EV take up from higher than average car ownership level in the county; nationally 60% of new vehicles should be electric by 2030⁴⁷ • Home working and virtual access to services to reduce need to travel • Extensive rail network with good connectivity to London, and opportunities to improve connectivity to nearby airports • Increased popularity of cycling • Cycling over longer distances and hillier terrain is being made easier with electric bicycles • Anticipated changes to vehicle ownership models such as 'Mobility as a Service' and autonomous vehicle technologies • Co-benefits for health and environmental improvements from active travel • Efficiency improvements in the freight industry • Potential to work in partnership with public transport operators to reduce emissions, e.g. from buses and community transport. 	<ul style="list-style-type: none"> • Limited funding available for improvement measures (sustainable transport, road realignment, vehicle charging points etc) • Public support for introducing restrictions on vehicle use for air quality purposes e.g. road user charging, routing restrictions, minimum vehicle emissions standards • High car dependency for travel to work and access to services from rural areas • Electric vehicles still produce small particulates from tyre wear, and will not reduce congestion • Over-crowded trains into London, the increasing cost of rail fares and limited rail connectivity between some Surrey towns • Legislation requires specific Air Quality Objectives to be met 'in the shortest possible timeframe' meaning that additional activity may be required in AQMAs • Balancing concerns for health with other objectives e.g. preservation of historic buildings

⁴⁷ Committee on Climate Change

Opportunities	Challenges
<ul style="list-style-type: none"> • Local Enterprise Partnership priorities provide opportunities for funding • Increased public awareness air quality as a health issue • Trend of lower car use amongst young adults compared with previous generations 	<p>and maintaining an effective highway network limits localised options to address air quality</p> <ul style="list-style-type: none"> • The impact of through-traffic • Trend for an overall increase in passenger miles travelled each year • Sustainably accommodating additional development in Surrey • Uncertainty regarding environmental legislation resulting from the UK's departure from the EU • Travel habits are often slow to change

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