

Surrey Transport Plan

Low Emissions Transport Strategy
Draft for Public Consultation

June 2018



SURREY

Alternative formats

Surrey County Council has actively considered the needs of blind and partially sighted people in accessing this document.

We are happy to give information in either large print or in another language. If you want this service please call us on 03456 009 009.

If you have other needs in this regard please contact Surrey County Council in one of the following ways.



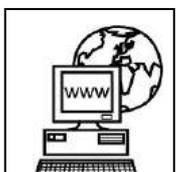
In writing

Surrey County Council Contact Centre
Room 296-298
County Hall
Kingston upon Thames
Surrey KT1 2DN



By phone

03456 009 009
SMS: 07860 053 465



Online

Email: contact.centre@surreycc.gov.uk
www.surreycc.gov.uk/cleanertravel

Surrey Transport Plan, 2011-2026

Low Emissions Strategy

Draft for Public Consultation

June 2018

Version	Date	Author / Owner	Rationale
This version			
Consultation draft v1	Jun18	Transport Policy team	Public consultation draft, for publication
Previous versions			
0.1 – 0.11	Mar-18	Transport Policy team	Full review and update of Climate Change and Air Quality strategies (merged into new Low Emissions Transport Strategy), working drafts – circulated to key stakeholders for comment Senior management sign off to consult approved May 2018.

Table of Contents

Executive summary	7
Glossary and abbreviations	10
1. Introduction.....	13
2. Problems, challenges and opportunities.....	15
Air quality	15
Greenhouse gas (carbon) emissions	20
Air quality and carbon emissions.....	23
Case studies of opportunities.....	25
3. Aim and preferred approach	27
4. Delivery.....	29
5. Indicators	34
Appendix 1: Air quality management areas – frequently asked questions.....	35
Appendix 2: Map of air quality management areas in Surrey	39
Appendix 3: Air Quality Management Areas (AQMA) in Surrey and their pollutants	40
Appendix 4: Improvements in road traffic required to mitigate NO2 exceedances in Surrey’s AQMA.....	42
Appendix 5: Policy context	46
Air quality.....	46
National climate change policy and local context	49

Foreword

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.

This Low Emissions Transport Strategy shows how Surrey County Council supports this vision.

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

Surrey has many strengths and opportunities including significant potential for adopting electric vehicles¹ both for private and commercial use, the increased popularity of cycling, excellent standards of provision in cycle training and an extensive rail network. However, there are many challenges such as some rural areas are highly dependent on cars to reach services and employment in urban areas. Technology such as high speed broadband, has some role to play in addressing this, along with current and future options for demand-responsive transport.

Whilst additional funding for measures have been announced for improving air quality, this is limited in relation to the scale of the challenge and we must continue to work to find the right balance between voluntary measures and regulations and between our needs, today and in the long term.

¹ Steer Davies Gleave Surrey Electric Vehicle Strategy Final Report (2012)

This strategy sets out our ambition to work together to reduce emissions from transport in Surrey; improving air quality and the environment for the benefit of everyone who lives or works in Surrey.



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

This is the consultation version of this draft strategy, and you will see a number of consultation questions throughout the document for your consideration.

These questions can be answered and submitted to us via our online questionnaire available through: www.surreycc.gov.uk/cleanertravel.

Executive summary

This strategy combines the previous Surrey County Council Air Quality Strategy and Climate Change Strategy. It is the Surrey County Council Low Emissions Transport Strategy and following a period of public consultation will be adopted into the Surrey Transport Plan. It covers emissions from transport which harmful to health and the environment at a local level; this includes carbon dioxide emissions which cause climate change.

The two strategies have been combined because the ambitions to reduce air pollutants and greenhouse gases are complementary, and many measures that are suitable for achieving one ambition are also suitable for achieving the other.

Surrey County Council recognises the significant health and environmental benefits that can be gained through reducing air pollutants produced from road traffic. As the highways authority in Surrey, the county council has a duty to work with districts and boroughs to bring forward measures to improve air quality.

Monitoring shows there are breaches to legal limits for air pollution in communities across Surrey (for nitrogen dioxide), and particulate emissions have adverse health impacts across the whole county, contributing to 5% of deaths in Surrey². Reducing particulate and nitrogen dioxide emissions from motor vehicles could significantly improve health, particularly for the most vulnerable in our communities.

Furthermore, reductions in carbon emissions from transport are currently lagging behind reductions in other sectors. In light of this, our aim is to reduce harmful emissions from road transport across the county and work with partners to achieve legal compliance for air quality locally.

² <https://fingertips.phe.org.uk/profile/public-health-outcomes-framework/data#page/3/gid/1000043/pat/6/par/E12000008/ati/102/are/E10000030/iid/30101/age/230/sex/4>

There are significant opportunities for sustainable transport options to support clean economic growth, increase physical activity and reduce emissions.

Therefore, the county council's preferred strategy for reducing levels of harmful emissions and improving air quality, is through:

1. Working with district/borough councils in declared Air Quality Management Areas (AQMAs) via the Surrey Air Alliance
2. Supporting increases in walking, cycling and use of passenger transport
3. Expanding access to the car club network
4. Optimising pedestrian, cyclists and car movements in light of safe and sustainable travel
5. Reducing emissions from highways infrastructure and services e.g. LED streetlights, electric buses
6. Facilitating electric vehicle (EV) charging infrastructure and investigating other supportive policies
7. Reviewing the county council fleet with a view to procuring EVs/ other ultra-low emission vehicles
8. Minimising the need to travel and encouraging use of sustainable modes and EVs by staff
9. Minimising air pollution and carbon emissions from new developments
10. Raising public awareness and understanding of air quality and self-help for vulnerable people in the most severe periods of air pollution
11. Work with bus operators to reduce emissions.

Since last publishing our Air Quality Strategy and Climate Change Strategy, further evidence has emerged on the damaging effects of air pollution, most notably the Royal College of Physicians report³ in 2016 which raised the profile of research into the quantification of deaths attributable to specific air pollutants.

While some areas of poor air quality have improved in Surrey, others have been identified and declared as places where action is required to reduce pollutants.

³ Royal College of Physicians. Every breath we take: the lifelong impact of air pollution. Report of a working party. London: RCP, 2016.

This strategy sets out our preferred approach to working collaboratively to address emissions from transport in Surrey, and to improve air quality for all.

Delivery and indicators of success

We will work with our partners in public health and at the districts and boroughs, to secure funding to deliver projects which support emissions reduction within integrated sustainable transport schemes, from a range of funding streams. A range of indicators of success of the strategy are proposed, which cover both local air pollutants and carbon emissions from transport.

The problems and challenges encountered when trying to reduce emissions are discussed, the impacts of both poor air quality and greenhouse gases are summarised. A key difficulty in this area is funding, as there is currently no specific funding made available within county council budgets to address air quality or carbon emissions reduction. Funding must usually instead be won by the council through various competitive bidding opportunities.

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 answer, 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.
Highways England (HE)	HE operates, maintains and improves England's motorways and major A roads, and works with the Department for Transport.
Local Air Quality Management (LAQM)	The process through which local air quality is monitored and reported.
LTP3	Surrey County Council's third Local Transport Plan, known as the Surrey Transport Plan.
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

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 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, Surrey Police and Action Surrey.
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. It aims to identify opportunities for collaboration and integration across agencies, and will develop direct links to services users, patients and local stakeholders.
Surrey Transport Plan (STP)	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 transport and which damage health and the environment locally. These are principally nitrogen dioxide (NO₂) and particulate matter (PM). The strategy also covers emissions which are causing climate change at a global scale, particular carbon dioxide (CO₂).
- 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 Road transport is a major source of local and global pollution and measures to address air quality and reduce carbon emissions are often complementary. Having a strategy which considers both air quality and climate change / carbon emissions, ensures that resources are used effectively, and opposing or conflicting actions are avoided where possible. If compromises are needed between objectives, these are considered in a balanced way to consider benefits to both air quality and climate change.
- 1.4 Moving to a sustainable, low emissions transport network has multiple benefits including greater long term economic and community prosperity and improved health and wellbeing.
- 1.5 While there are common emissions sources, namely petrol and diesel vehicles, the historical and legislative context is very different for the two issues. 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.

Furthermore, measures to reduce overall carbon emissions across the county will not, on their own, be sufficient to return air quality to safe levels for human health.

- 1.6 The county council and borough and district councils across Surrey are taking steps to reduce carbon emissions from across the local transport network and improve air quality in target areas. However, while there is a strong economic case to reduce emissions for health and environmental reasons, available funding is currently insufficient and county council capital borrowing is severely constrained.
- 1.7 This strategy provides evidence of the problem in Surrey and sets out the county council's role and activities in support of air quality improvements and carbon emissions reduction, in the context of funding challenges.
- 1.8 Addressing poor air quality and reducing emissions cannot be done by the county council alone. We work closely with the Surrey Air Alliance, a working group of officers within the district and borough councils who work to improve air quality in their area, and with the Surrey Health and Wellbeing Board, as well as elected members across the county.
- 1.9 Recognising the need for collective action to address air quality issues, officers from Surrey's eleven district/borough councils and Surrey County Council (Transport 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.

2. Problems, challenges and opportunities

- 2.1 Air pollution is currently estimated to be the largest environmental risk to public health. There is evidence to suggest that poor air quality can impact people at any age across the life course, with a disproportionate effect on children, older people, people with long-term health conditions and less well-off communities. In relation to climate change, parts of Surrey are already affected by flooding, and this is likely to become more frequent and severe with climate change, along with the extensive wider impacts of climate change nationally and globally.

Air quality

What causes air quality problems?

- 2.2 Air pollutants that impact significantly on health include:
- Nitrogen dioxide (NO₂);
 - Particulate Matter (both PM₁₀ and PM_{2.5});
 - Ozone (O₃); and
 - Sulphur dioxide (SO₂).
- 2.3 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 are declared in relation to excessive nitrogen dioxide (NO₂), or both NO₂ and particulate matter under 10 micrometres in size (PM₁₀). The primary source of both NO₂

and PM10 in Surrey is road traffic. This reflects the national picture, where transport is identified as the main source of pollution in 96% of all AQMAs⁹.

2.4 Although road traffic flows in Surrey are significantly higher than those experienced nationally or elsewhere in the South East¹⁰, the designated AQMAs 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 road traffic conditions that can give rise to air pollution in exceedance of the national air quality objectives are as shown in Table 2.1 below.

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	The Borough, Farnham
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 e.g. A331 Blackwater relief road.
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	M25 Reigate & Banstead Redhill town centre

⁹ DEFRA 'Air Pollution in the UK 2016' (2017: 15)

¹⁰ Surrey County Council 'Surrey Congestion Programme' (2014)

Highway characteristics	Explanation	Example in Surrey
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 e.g. Runnymede and Reigate & Banstead Sunbury Cross, Spelthorne Crooked Billet Roundabout, nr Staines
Roads with significantly changed traffic flows	For instance due to new developments	No AQMAs 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 on this basis currently

Table 2.1: Typical road traffic conditions that can give rise to air pollution exceedances. *Source: Based on Table 7.1: Screening Assessment of Road Traffic Sources, from Defra (2016) Local Air Quality Management: Technical Guidance LAQM.TG(16).*

- 2.6 While the designated AQMAs highlight where air quality is poorest, there may be some other locations where air pollution levels are such that an AQMA could be declared in future if, for instance, there was a small increase in traffic. 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.
- 2.7 This suggests that, in addition to developing mitigation measures for designated AQMAs, measures which offer air quality benefits over wider areas should be considered. This approach will also reduce carbon 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. This has been achieved through tightening controls on emissions from industry, transport and domestic sources¹¹.
- 2.9 However, in the transport sector, there are two main trends which historically have worked in opposite directions: new vehicles are becoming individually cleaner¹², but total distance travelled is increasing.
- 2.10 There are currently 26 locations in Surrey that have been declared 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 (see Appendix 2 and Appendix 3 for a map and a list). Mole Valley and Tandridge have not declared any to date.
- 2.12 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 3 includes links to each borough council's webpages on air quality, where you can find more information, including results of districts and boroughs' monitoring and regular air quality monitoring and progress reports.
- 2.13 For each AQMA in Surrey, Appendix 4 sets out:
- The number of properties within the AQMA to give an indication of the potential impact on human health;

¹¹ Department for Environment Food and Rural Affairs (DEFRA), 2017

¹² Arguably, with the exception of the increase in the proportion of newer diesel vehicles which have been shown to be less clean than older models.

- Annual mean NO₂ concentration¹³;
- Contribution to pollutant by source, split into the following sources: background, cars and light good vehicles (LGV); and HGV; and,
- Estimated percentage reduction in road traffic which would, in theory, be required to reduce pollutant levels to within the national Air Quality Objective.

Why does it matter? What are the health and environmental impacts of poor air quality?

- 2.14 Poor air quality has detrimental effects on human health and the environment. The Public Health Outcome Framework¹⁴ reports that 4.6% of deaths in Surrey during 2015 were attributable to particulate air pollution.
- 2.15 Children, older people, pregnant women and people with long term health conditions are known to be more vulnerable to the effects of air pollution.
- 2.16 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 Organization¹⁵).
- 2.17 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.”¹⁶

¹³ PM₁₀ concentrations are not shown, as the figures are not available, however, as a rule, measures which mitigate NO₂ will have a similar proportional effect on PM₁₀

¹⁴ PHOF Indicator 3.01

¹⁵ <http://www.who.int/airpollution/ambient/health-impacts/en/>

¹⁶ [Air Quality Strategy for England, Scotland, Wales and Northern Ireland \(Defra, July 2007\)](#), Volume 1, para 14)

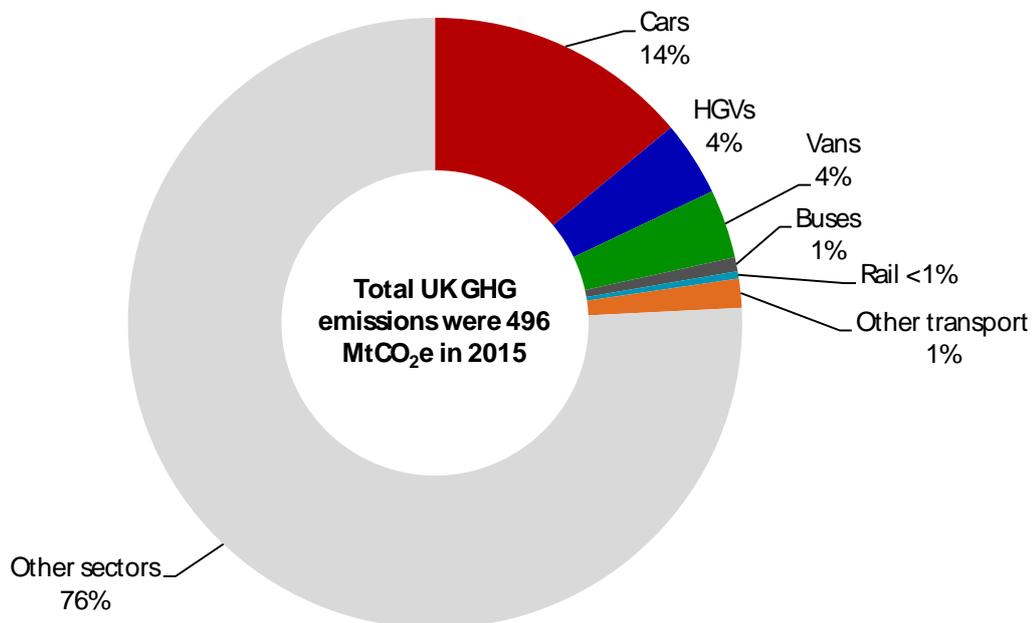
2.18 The health and environment effects of nitrogen dioxide and particulate matter are further detailed in Appendix 5.

2.19 Pedestrians, cyclists, and drivers and passengers in vehicles are all affected to different degrees, with occupants of vehicles having been shown to be exposed to 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*”¹⁷.

Greenhouse gas (carbon) emissions

Sources of greenhouse gas (carbon) emissions from transport

2.20 At a national 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’.

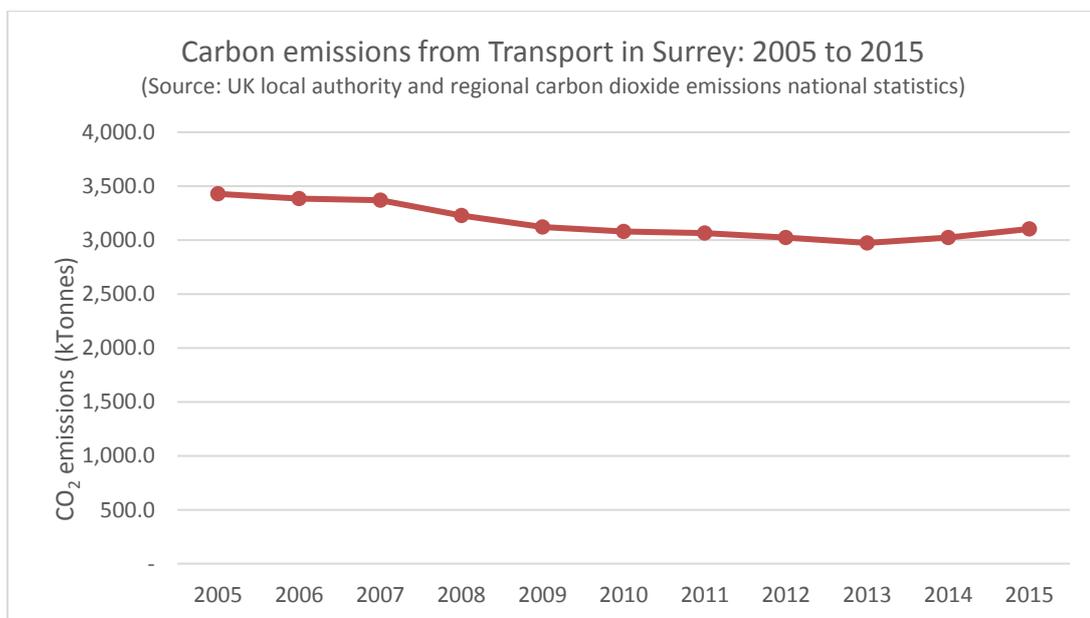


¹⁷ <https://travelwest.info/project/ee-162-air-pollution-exposure-among-motor-vehicle-occupants>

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

Level of carbon emissions from transport in Surrey

- 2.21 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.
- 2.22 The change in road transport emissions in Surrey between 2005 and 2015 is shown in the chart below¹⁸. 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 distance travelled in particular by vans and HGVs.



¹⁸ UK local authority and regional carbon dioxide emissions national statistics: 2005-2015 (BEIS, 2015)

Figure 2.2 Carbon emissions from transport in Surrey 2005 to 2015

- 2.23 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 electric vehicles. Numbers of biofuel vehicles (fueled by biodiesel and bioethanol which also produce lower carbon emissions) have remained steady¹⁹.
- 2.24 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 industry²⁰.

Council vehicle fleet

- 2.25 Carbon emissions from council vehicle fleet and staff business travel vary year on year. There was a small reduction 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.

Why does it matter? What are the impacts of climate change?

- 2.26 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

¹⁹ [Committee on Climate Change \(2017\) Report to Parliament](#)

²⁰ [Committee on Climate Change \(2017\) Report to Parliament](#)

migration. The Met Office provides further information of the global impacts, based on international evidence²¹.

2.27 In the context of the south east of England, localised risks for Surrey include²²:

- Drought
- Extreme heatwave
- Flash Flooding
- Major river flooding incidents
- Land movement
- Severe environmental pollution
- Spread of infectious human and animal diseases
- Wildfires

2.28 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 episodes²³.

Air quality and carbon emissions

How can we address the problems? What are the barriers to successfully addressing them?

2.29 Table 2.2, below, outlines opportunities and challenges faced by Surrey with regards to lowering emissions from transport.

Opportunities	Challenges
<ul style="list-style-type: none"> • High potential for EV take up from higher than average car ownership level in the county; 	<ul style="list-style-type: none"> • Limited funding available for improvement measures

²¹ Met Office (2018) <https://www.metoffice.gov.uk/climate-guide>

²² Surrey's Local Resilience Forum Strategic Climate Change Guidance (2016)

²³ Defra (2007) Air Quality and Climate Change: A UK Perspective

Opportunities	Challenges
<p>nationally 60% of new vehicles should be electric by 2030²⁴</p> <ul style="list-style-type: none"> • Home working and virtual access to services to reduce need to travel • Extensive rail network with good connectivity to London • Increased popularity of cycling and excellent standards of provision in cycle training • 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"> • 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 and limited rail connectivity between some Surrey towns • Public support for introducing any restrictions on travel patterns and/or privately owned vehicles • 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 and maintaining an effective highway network limits localised options to address air quality

Table 2.2 Opportunities and challenges

²⁴ Committee on Climate Change

Case studies of opportunities

Surrey: car club including EVs

- 2.30 The principal car club in Surrey is operated by Enterprise. There are currently 23 car club vehicles in operation within Surrey of which roughly a quarter are EV, with a total of 40 scheduled to be in operation by the end of 2018. 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 fueled cars.

Woking: emissions based parking charges for car park season ticket holders²⁵

- 2.31 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.

Surrey: EV recharging points at county council workplaces and on street in Guildford

- 2.32 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 charging points and open them up to more users.

Guildford: Green scheme for electric vehicles²⁶

- 2.33 Guildford Borough Council has initiated a Green Scheme to incentivise electric car use in the borough. The permit scheme allows owners of electric

²⁵ <https://www.woking.gov.uk/seasontickets>

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

vehicles to access discounted car parking in public car parks. The scheme does not apply to short-stay spaces.

Reigate & Banstead: anti-idling campaign

- 2.34 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.

Why have AQMAs been revoked in Surrey in the past?

- 2.35 Four AQMAs have been revoked since 2011 where concentrations of pollutants have reduced to below the legal maximum level. There are a number of factors at play which may have helped reduce pollutant levels, so it is not 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.

Section 2 Consultation Questions

- Do you agree with the problems, challenges and opportunities identified within this section?
- Are there any other challenges and opportunities you think we should consider including or would like to make us aware of?

3. Aim and preferred approach

Low emissions transport strategy aim

To reduce harmful emissions from road transport across the county and work with partners to achieve legal compliance for air quality locally.

- 3.1 The county council will reduce levels of harmful emissions and improve air quality, by:
1. Partnership working – Working with district and borough councils across the authority to support them to monitor and assess air pollution levels, and working with them in developing and delivering joint action plans in AQMAs, via the Surrey Air Alliance.
 2. Travel behaviour - Enabling and promoting changes in people’s travel behaviour to encourage safer and smarter travel by walking, cycling and use of passenger transport, including demand responsive transport for rural areas, and travel behaviour campaigns in schools.
 3. Car clubs - Expanding access to car club networks, including electric car club vehicles and encouraging the efficient use of private vehicles, for example car sharing, and eco-driving.
 4. Network planning - Optimising movements of all transport modes, while promoting safe and sustainable transport in particular.
 5. Low/zero emission vehicles – Supporting the installation of charging points for electric vehicles and considering other incentives to encourage uptake of ultra-low emissions vehicles.
 6. Council fleet - Reviewing the council’s fleet, with a view to replacing petrol and diesel vehicles with electric vehicles and other ultra-low emissions vehicles, where viable and where value for money is shown.

7. SCC travel behaviour - Minimising the need for staff travel through remote working and video conferencing facilities, encouraging use of sustainable modes and electric vehicles by staff where travel is necessary.
8. SCC emissions - Reducing emissions from, and energy use of, the county council's highways infrastructure and transport services. For example through use of LED streetlights, electric buses and Euro 6 buses²⁷.
9. Planning - Minimising air pollution and carbon emissions from new developments; through strategic planning, application of Manual for Streets²⁸ design principles and requiring development-related travel plans for sustainable travel.
10. Public awareness - Raising public awareness and understanding of air quality²⁹ and self-help for vulnerable people in the most severe periods of air pollution via the Air Alert service³⁰.
11. Buses – work with public transport operators to reduce emissions from buses and community transport where feasible.

Section 3 Consultation Questions

- Do you agree with our identified aim and preferred approach to achieving this aim?
- Do you have any other comments or suggestions on the identified aim or any other items within the preferred approach which are numbered 1 to 11? Please be as specific as you can in your answer.

²⁷ Euro 6 buses are compliant with the latest European emissions standards, and are the least polluting petrol/diesel fuelled buses available.

²⁸ <https://www.gov.uk/government/publications/manual-for-streets>

²⁹ From National Highways and Transport surveys we know that people care about air quality, but that they felt uninformed about the issue.

³⁰ The Air Alert system within Surrey operates in 7 districts and boroughs; find out more at: <http://www.airalert.info/surrey/default.aspx>

4. Delivery

4.1 Opportunities to deliver the above commitments are through relevant strategies and supporting plans of Surrey's Local Transport Plan, core service activities and partnership working with the Surrey Air Alliance. These are as follows (Figure 4.1):

Lead Strategy or Service activity	Preferred strategy reference	Measure in support of low emissions transport strategy
Surrey Air Alliance	1 – partnership working 10 – public awareness	<ul style="list-style-type: none"> • Ongoing partnership activity to work collaboratively to effectively reduce emissions
Asset management	8 – SCC emissions	<ul style="list-style-type: none"> • Street lighting PFI including potential for LEDs for energy efficient lighting • Highway maintenance materials specification and waste management
Car clubs (<i>under development</i>)	3 – car clubs	<ul style="list-style-type: none"> • Car hire for personal and business use, reducing the need to own a car
Congestion	4 – network planning	<ul style="list-style-type: none"> • Urban Traffic Management and Control: optimizing interconnected traffic signals to smooth traffic flows • Installation/removal of traffic signals • Co-ordination of roadworks
Cycling	2 – travel behaviour	<ul style="list-style-type: none"> • Local cycling strategies • Bikeability cycle training
District and Borough Transport Strategies	All	<ul style="list-style-type: none"> • Support for local interventions to support air quality initiatives e.g. anti-idling measures and electric vehicle take-up

Electric vehicles	5 – low/zero emission vehicles 6 – council fleet 7 – SCC travel behaviour	<ul style="list-style-type: none"> • On-highway infrastructure and other policy levers to encourage shift to plug-in hybrid/electric vehicles • Public engagement on plug-in hybrid/electric vehicles • Procurement of low emissions vehicles in the council fleet
Freight	2 – travel behaviour 7 – SCC travel behaviour 9 - planning	<ul style="list-style-type: none"> • Freight Quality Partnerships
Passenger Transport Strategies: Part 1 - Local Bus and Part 2: Information	11 - buses 2 – travel behaviour	<ul style="list-style-type: none"> • Public transport interchange improvement • Park and Ride • Quality Bus Partnerships including bus priority schemes • Smart card ticketing
Parking	1 partnership working- 3 – car clubs 4 – network planning 5 – low/zero emission vehicles 9 - planning	<ul style="list-style-type: none"> • Parking and loading restrictions via Controlled Parking Zone review rolling programme • Parking enforcement arrangements including officers and CCTV • Emissions-based parking charges (potential consideration)
Road Safety	2 – travel behaviour	<ul style="list-style-type: none"> • Campaigns e.g. DriveSMART partnership, Speed limit policy and enforcement
Rights of Way Improvement	2 – travel behaviour	<ul style="list-style-type: none"> • A strategic approach to identifying changes to the local rights of way network to make it more useful to the public
Transport Development Planning	9 - planning	<ul style="list-style-type: none"> • Assessing and managing transport impacts including emissions of new development
Travel Planning	2 – travel behaviour 3 – car clubs	<ul style="list-style-type: none"> • Corporate sustainable travel support measures • Development-related travel plans

	7 – SCC travel behaviour 9 - planning	<ul style="list-style-type: none"> • School travel planning support / Workplace travel planning support
Walking (<i>emerging</i>)	2 – travel behaviour	<ul style="list-style-type: none"> • Supporting Healthy streets, Public realm improvements, Park and Stride, promotional activity • Local Cycling and Walking Infrastructure Plans

Table 4.1 Key delivery areas in support of reducing emissions

4.2 In Surrey, Local Transport Strategies provide a plan for addressing transport problems and opportunities on a district and borough basis. These include measures to improve air quality, including within AQMAs. The intention is that the schemes included in local transport strategies can help inform district and borough air quality action plans.

Partnership working arrangements

4.3 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, subject to funding);
- agreeing options for enforcing existing parking and loading regulations;

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

- agreeing options for supporting travel choices that are better for air quality and consider air quality issues in planning and other processes and areas of responsibility; and
- Bringing air quality-related proposals to the local committees.
- We will also communicate with Defra and work in consultation with them.

4.4 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 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.

4.5 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.

4.6 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

4.7 There is no specific funding made available within current Surrey County Council budgets specifically to address air quality or carbon emissions reduction.

4.8 Funding for the delivery of sustainable transport schemes which have air quality and carbon reduction objectives integrated within them, could, subject to availability, be drawn from:

- Local Enterprise Partnership (Local Growth and Structural funds)
- County council capital match funding, if available
- Developer contributions e.g. Section 106 and Community Infrastructure Levy (CIL) or successor schemes

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

- Defra for grants to aid air quality monitoring³³
- Future Department for Transport funding for transport schemes, where available
- Other funding sources, when and where available.

4.9 Delivery of any area outlined in Table 4.1, above, is dependent on securing funding. The county council will seek to secure funding from available sources as resources allow.

Section 4 Consultation Questions

- Do you have any comments on our proposed approaches to delivery?

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.

5. Indicators

5.1 We will monitor the effectiveness of this strategy using a range of indicators including:

- Total number of AQMAs declared within Surrey³⁴
- Number of AQMAs revoked
- Number of new AQMAs declared
- Health impacts of poor air quality in Surrey, including spatial variations
- Euro emissions ratings of the county council's vehicle fleet
- Carbon emissions from road transport in Surrey in the context of the Climate Change Act and the national carbon budgets³⁵
- Carbon emissions from the county council's vehicle fleet³⁶
- Carbon emissions from council staff business mileage
- Number of physically active adults (PHOF Indicator 2.13³⁷).

Section 5 Consultation Questions

- Do you agree with the indicators identified to help us monitor progress made in achieving the aim of the strategy?
- Are there any other indicators that you think we should consider including in this section, or any identified that you think should be removed?

³⁴ At start of this Low Emissions Transport Strategy

³⁵ 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](#)).

³⁶ 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.

³⁷ As a proxy indicator for measuring active travel levels in Surrey.

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.

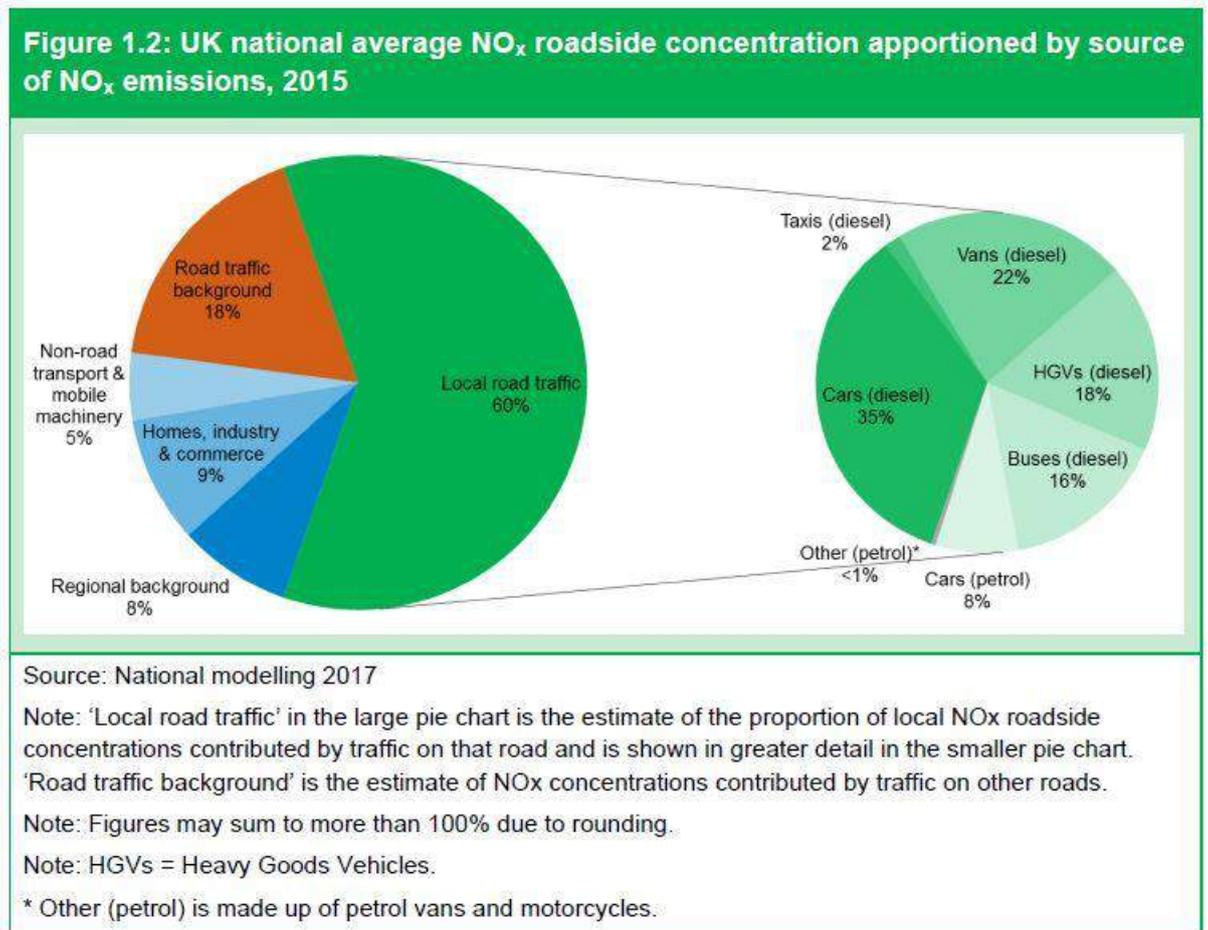
2. How is air quality monitored?

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 1997³⁸. 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

³⁸ <https://uk-air.defra.gov.uk/aqma/>

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.

The county council is also a statutory consultee on Annual Status Reports³⁹.

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?

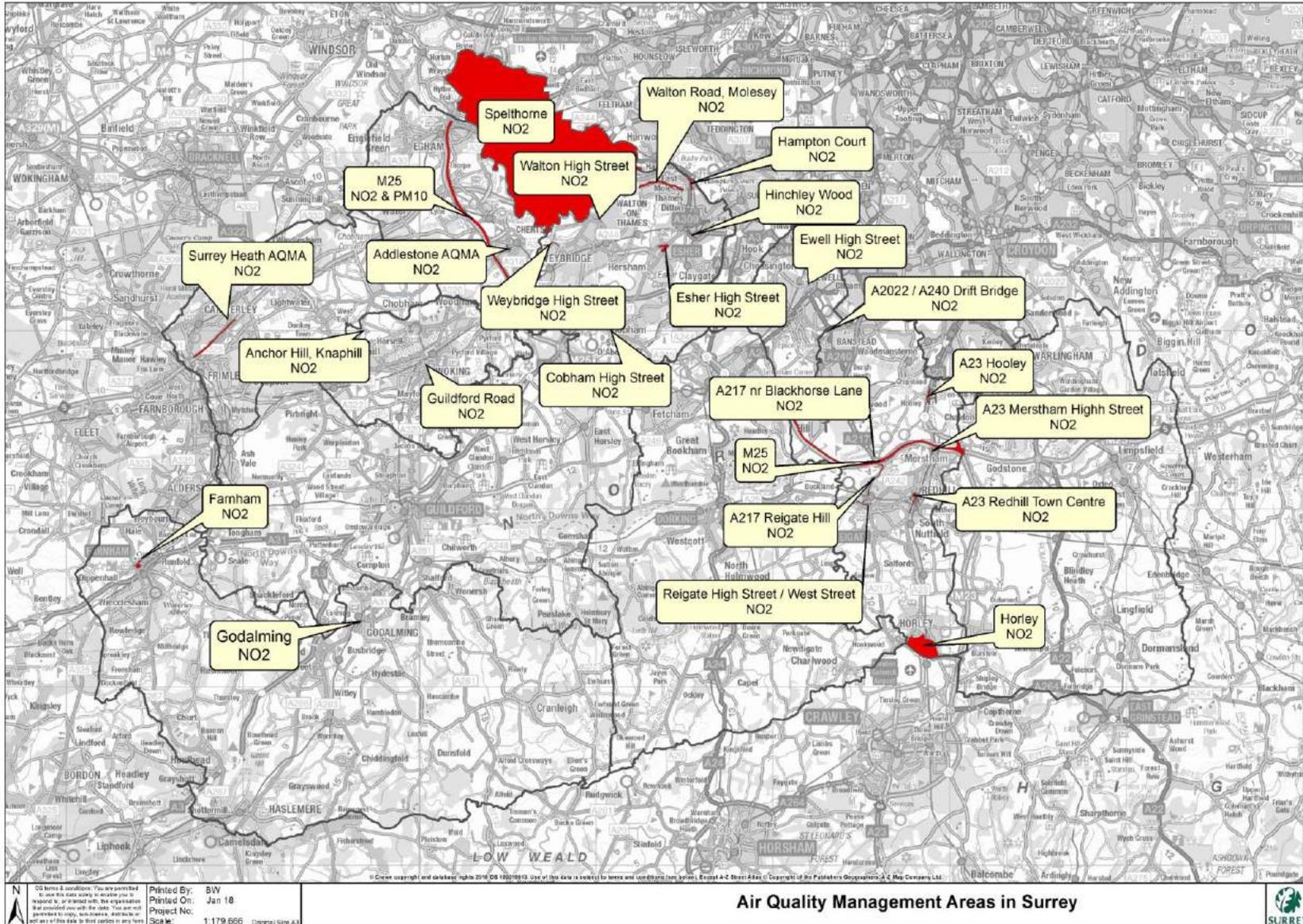
No. Following a review, an AQMA can be revoked entirely or reduced if pollutant levels have dropped below the required limits, and will continue to be below these limits. Usually, this is after three straight years of compliant levels.

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.

³⁹ Local Air Quality Management Policy Guidance (PG16) April 2016; Defra

Appendix 2: Map of air quality management areas in Surrey



Source: GIS dataset downloaded from DEFRA January 2018.

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

Borough or district	Name of AQMA	Pollutants	Highway authority
Elmbridge BC	Esher High Street	NO ₂	Surrey CC
	Walton Road, Molesey	NO ₂	Surrey CC
	Weybridge High St	NO ₂	Surrey CC
	Walton High Street	NO ₂	Surrey CC
	Cobham High Street	NO ₂	Surrey CC
	Hampton Court	NO ₂	Surrey CC
	Hinchley Wood	NO ₂	Surrey CC
Epsom & Ewell BC	Ewell High Street	NO ₂	Surrey CC
Guildford BC	Compton AQMA	NO ₂	Surrey CC
Mole Valley DC	No AQMAs declared		
Reigate & Banstead BC	M25	NO ₂	Highways England
	Horley (near Gatwick)	NO ₂	Surrey CC, West Sussex CC and Highways England
	A217 / Blackhorse Lane	NO ₂	Surrey CC
	A2022/A240 Drift Bridge	NO ₂	Surrey CC
	Reigate High Street / West Street	NO ₂	Surrey CC
	A23 Merstham High Street	NO ₂	Surrey CC
	A217 Reigate Hill	NO ₂	Surrey CC
	A23 / Redhill Town Centre	NO ₂	Surrey CC
	A23 Hooley	NO ₂	Highways England
Runnymede BC	M25/ Egham	NO ₂	Highways England
	Addlestone town centre	NO ₂	Surrey CC

Spelthorne BC	Spelthorne	NO ₂	Surrey CC and Highways England
Surrey Heath BC	Camberley AQMA	NO ₂	Highways England
Tandridge DC	No AQMAs declared		
Waverley BC	Farnham AQMA	NO ₂	Surrey CC
	Godalming AQMA	NO ₂	Surrey CC
Woking BC	Anchor Hill AQMA	NO ₂	Surrey CC
	A320 Guildford Road, Woking	NO ₂	Surrey CC

Last updated: April 2018

Appendix 4: Improvements in road traffic required to mitigate NO₂ exceedances in Surrey's AQMAs

This table will be revised regularly as updated data becomes available.

AQMA name	No. of properties affected	Annual Mean NO ₂ Concentration (µg/m ³) AQS: 40 µg/m ³	Source apportionment: Contribution to pollutant level by source (% based on NO _x)			Estimated reduction in emissions to reduce pollutant level to within AQS (%)	Estimated reduction in NO _x required to meet AQO (µg/m ³)	Notes
			Background	Cars + LGVs	HGVs			
Elmbridge								
Esher High Street	61	43.5 µg/m ³ (2014)						
Walton Road, Molesey	237	38.1 µg/m ³ (2014)						
Weybridge High St	78	41.1 µg/m ³ (2014)	28%	72%	0%	30%		Source apportionment figures from modelling carried out for 2010 Final Assessment
Walton High St	27	41.5 µg/m ³ (2014)	30%	70%	0%	21%		Source apportionment figures from modelling carried out for 2010 Final Assessment
Cobham High St	90	42.4 µg/m ³ (2014)	29%	71%	0%	28%		Source apportionment figures from modelling carried out for 2010 Final Assessment

Hampton Court	567	46.7 µg/m ³ (2014)	26%	74%	0%	30%		Source apportionment figures from modelling carried out for 2010 Final Assessment
Hinchley Wood	137	41.2 µg/m ³ (2014)	25%	75%	0%	46%		Source apportionment figures from modelling carried out for 2010 Final Assessment
Epsom & Ewell								
Ewell High St.	>10	45 µg/m ³	35.5%	36.7%	14.4%	>50%		Monitoring continuing. Action Plan has been progressed, SCC actions have been notable in aiming to assist the free flow of traffic at this location.
Guildford								
Compton AQMA								Action Plan consulted on in 2018
Reigate and Banstead								
M25	53	27 µg/m ³	30.6%	24.9%	44.5%	0%		
Horley nr Gatwick	1568	28 µg/m ³	43.1%	-	-	0%		Non-airport road traffic currently only 9.3% of the total pollution.
A217 / Blackhorse Lane	1	28 µg/m ³	45%	32%	23%	0%		
A2022 / A240 Drift Bridge	2	32 µg/m ³	38.7%	27.6%	33.7%	0%		

Reigate High St / West St	197	40 µg/m ³	48%	25%	27%	>5%		
Merstham High St	37	44 µg/m ³	35%	34.8%	30.2%	>8%		
A217 Reigate Hill	111	38 µg/m ³	37%	41%	23%	0		Currently 0% reduction though 5% reduction would provide margin of error.
A23 / Redhill Town Centre	35	36 µg/m ³	35%	19%	21% HGV + 16% bus	0		Note buses make significant contribution in Redhill - absent in all other AQMAs
A23 Hooley	52	57 µg/m ³	65%	36%	29%	>47		Currently highest concentrations in borough, and depending on weather in given year risk that hourly standard is being breached as well.
Runnymede								
M25	40	53 µg/m ³	53%	23%	30%	30%		
Addlestone town centre	174	48 µg/m ³	48%	25%	22%	5-10%, or up to 1% decrease in HGV numbers		AQMA extended in 2015.
Spelthorne								
Spelthorne	Whole borough	32.6 µg/m ³		32% cars + 16% LGVs	Artic HGVs 21% Rigid HGVs 22%			Source apportionment from 2011. In 2014 18 monitoring locations exceeded the NO2 AQO. A further 12 locations recorded concentrations within

					Buses & coaches 6%			10% of the objectives (i.e. between 36 and 40 µg/m ³)
Surrey Heath								
Camberley AQMA	105	50 µg/m ³						
Waverley								
Farnham AQMQ	483	50.4 µg/m ³	40%	46%	6%			Level of reduction required will depend entirely on what types of vehicle are targeted
Godalming AQMA	40	44.9 µg/m ³	Not assessed	58%	6%	1%		Level of reduction required will depend entirely on what types of vehicle are targeted
Woking								
Anchor Hill AQMA	33	43.9 µg/m ³				<17%		
A320 Guildford Road AQMA								

Last updated: June 2018

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 health⁴⁰. 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 systems⁴¹.

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)

⁴⁰ Information source: <https://uk-air.defra.gov.uk/air-pollution/uk-eu-policy-context>

⁴¹ Cullingworth et al (2015) 15th edition 'Town and Country Planning in the UK' Routledge

- 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
- 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 Plan⁴²;
- 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,
- 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.

⁴² Local Transport Act 2000 as amended by the Local Transport Act 2008

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 England⁴³.

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 adaptation. This includes legally binding carbon budgets and an 80 percent carbon emissions reduction by 2050 against a 1990 baseline. Key policies for the government's cross-department approach to reducing carbon emissions and adapting to climate change include The UK Low Carbon Transition Plan: National Strategy for Climate and Energy (2009), updated by the coalition government as The Carbon Plan: Delivering our low carbon future (2011).

In 2016 the Department for Energy and Climate Change was abolished climate change policy was incorporated alongside business and industrial strategy. The Clean Growth Strategy (2017) sets out the government's current plans for reducing

⁴³ <http://www.phoutcomes.info/public-health-outcomes-framework#page/4/gid/1000043/pat/6/par/E12000008/ati/102/are/E10000030>

carbon emissions across power generation, industry, transport, commercial buildings, homes, agriculture and land use and waste. 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 biofuels⁴⁴,
- 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 behaviours⁴⁵ 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.

⁴⁴ 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).

⁴⁵ Banister and Anable (2009) *Transport Policies and Climate Change* in 'Planning for Climate Change' Earthscan