

Runnymede
BOROUGH COUNCIL



Draft Air Quality Action Plan

2008

This page has been left blank intentionally.

Executive Summary

This is the Air Quality Action Plan (AQAP) for the Runnymede Borough Council ('the Council'). The AQAP is a requirement of the Council's continuing Local Air Quality Management responsibilities under the Environment Act 1995. This follows the designation of Air Quality Management Areas (AQMA) alongside the M25 motorway through the Council's area. This is the culmination of a four-stage approach to local air quality review and assessment under the Environment Act 1995.

The Council's preceding Stage 4 report confirmed Stage 3 findings that these AQMA's are where the annual mean Nitrogen Dioxide (NO₂) and daily mean Particulates (PM₁₀) were modelled to exceed government objectives.

This AQAP was produced in accordance with guidance issued by the Department of Environment, Food and Rural Affairs (DEFRA). The initial consultation on this Draft AQAP was undertaken with statutory consultee's and other stakeholders.

The major source of air pollution affecting the Council's area is road traffic the main source being the M25. This is a road of national and regional significance and subsequently the most important actions involve seeking to influence policy. The Council is also addressing air pollution from non-road sources such as industrial activities and domestic heating.

The AQAP details the measures that the Council is taking, intending and considering that will help to improve air quality, and work towards the achievement of the Air Quality objectives for NO₂ and PM₁₀. The Council's proposed actions in pursuit of the air quality objectives are given for the AQMA's and the Council's wider area. Many of the actions require the assistance and co-operation of partners and these are also identified.

This page has been left blank intentionally.

Contents

	Executive Summary	3
1.0	Introduction to Air Quality Action Plan	8
1.1	Introduction	8
1.2	Background	8
1.3	National Government Air Quality Strategy	8
1.4	Local Air Quality Management	10
2.0	Overview of Air Quality in Runnymede	11
2.1	Monitoring of Air Quality	11
2.2	Review and Assessment	11
2.2.1	<i>Stage 1 and 2</i>	11
2.2.2	<i>Stage 3</i>	11
2.2.3	<i>Stage 4</i>	12
2.2.4	<i>Updating and Screening Assessment 2006</i>	16
2.2.5	<i>Detailed Assessment 2007</i>	16
3.0	Air Quality Action Plan in relation to existing Council Policies	18
3.1	Introduction	18
3.2	Aims of Air Quality Action Plan	18
3.3	The Council Vision	19
3.4	Runnymede BC Planning Policies	19
3.5	Runnymede BC Transport Policies	20
3.6	Runnymede BC Community Strategy	20
3.7	Surrey County Council policies	21
4.0	Identification of Transport Related Measures	23
4.1	Introduction	23
4.2	Low Emission Zone (LEZ)	23
4.3	The M25	24
4.4	Freight	25
4.5	Parking and Enforcement	25
4.6	Traffic Management	26
4.7	Public Transport	26
4.7.1	Buses	27
4.7.2	Railways	28
4.8	Cycling	28
4.9	Walking	29
4.10	Council Fleet	30
4.11	Runnymede Borough Council Travel Plans	30
4.12	School Travel Plans	31
5.0	Identification of Non Transport Related Measures	32
5.1	Development Plans	32
5.2	Climate Change	33
5.3	Domestic Energy Efficiency	34
5.4	Raising Public Awareness	35
5.5	Environmental Procurement Policy	35
5.6	Industrial Emissions	36
6.0	Impact Assessment and Options Appraisal	37
6.1	Introduction	37
6.2	Impact Assessment	37
6.3	Implementation	37

7.0	Cost Effectiveness	38
7.1	Introduction	38
7.2	Categories	38
8.0	Proposed Actions	40
8.1	Part I Actions : Air Quality Management	41
8.2	Part 11 Actions : Transport Related Measures	42
8.3	Part 111 Actions: Non Transport Related Measures	44
9.0	Consultation	45
9.1	Introduction	45
9.2	Consultation Process	45
9.3	Stakeholder Engagement	45
9.4	Council Decision Making Process	45
10.0	References	46
	Appendix 1: Air Quality Standards	47
	Appendix 2: Predicted annual mean NO₂ and PM₁₀ results for Runnymede BC	50
	Appendix 3: Source apportionment sites	58
	Appendix 4: Environmental Purchasing Policy	59

List of Figures

Figure 1	AQMA for NO ₂ and hourly PM ₁₀ (junctions 11 to 13 of M25)	14
Figure 2	AQMA for NO ₂ (southern boundary of Runnymede Borough Council to section 11 of the M25)	15
Figure 3	Sustainable Development within Surrey County Council	22
Figure 4	Diagrammatic map of the AirTrack proposal	28
Figure 5	Guildford Road Cycle Route	29
Figure 6	Runnymede 'Walking Bus' at Manorcroft Primary School, Egham'	30
Figure 7	Annual Mean Nitrogen Dioxide (µg/m ³) for M25 near Egham predicted in 2005 (based on 1999 meteorology)	50
Figure 8	Number of days with daily mean PM ₁₀ >50(µg/m ³) for M25 near Egham predicted in 2004 (based on 1996 meteorology)	51
Figure 9	Annual mean Nitrogen Dioxide (µg/m ³) for M25 near J12 predicted in 2005 (based on 1999 meteorology)	52
Figure 10	Number of days with daily mean PM ₁₀ >50(µg/m ³) for M25 near J12 predicted in 2004 (based on 19696 met.)	53
Figure 11	Annual mean Nitrogen Dioxide (µg/m ³) for M25 near Addlestone predicted in 2005 (based on 1999 meteorology)	54
Figure 12	Number of days with daily mean PM ₁₀ >50(µg/m ³) for M25 near Addlestone predicted in 2004 (based on 1996 met.)	55
Figure 13	Detailed view of 2005 annual mean nitrogen dioxide (µg/m ³) prediction of M25 at Addlestone (using 1999 meteorology)	56
Figure 14	Detailed view of number of days with daily mean PM ₁₀ >50(µg/m ³) for M25 at Addlestone (using 1999 meteorology)	57
Figure 15	The location of facades identified near to the AQMAs	58

List of Tables

Table 1	Review and Assessment progress	11
Table 2	Who is responsible for AQAP actions	37
Table 3	Cost Rating description	38
Table 4	Air Quality Impact rating descriptions	38
Table 5	Air Quality Action Plan Proposals	41
Table 6	Objectives included in the Air Quality Regulations 2000 and (Amendment) Regulations 2002 for the purpose of Local Air Quality Management and Air Quality Strategy Addendum (2003))	47
Table 7	Locations of sites chosen to help understand source apportionment	58

This page has been left blank intentionally.

1.0 Introduction to Air Quality Action Plan

1.1 Introduction

This is the Air Quality Action Plan for the Runnymede Borough Council (the "Council") that will help to improve air quality and work towards the achievement of the Government's air quality objectives in the Borough. The Action Plan is a requirement of the Council's continuing Local Air Quality Management responsibilities under the Environment Act 1995.

The Action Plan includes details of the Council's existing initiatives as well as proposed measures and their implementation. This draft Air Quality Action Plan (AQAP) is now available for consultation and your comments are invited. Copies of the AQAP will be made available in all of the libraries in the Borough and can also be viewed at www.runnymede.gov.uk.

The deadline for receipt of responses is **Friday 2008**. These should be sent to:

Head of Environmental Protection
Runnymede Borough Council
Civic Centre
Station Road
Addlestone
Surrey
KT15 2AH

E-mail: dennis.speight@runnymede.gov.uk

1.2 Background

There has been a considerable improvement in air quality since the smogs of the 1950s through the introduction of the Clean Air Acts and tougher regulation on emissions from industry and road transport. It has been estimated that between 1990 and 2001, policies to improve air quality have resulted in more than 4,200 fewer premature deaths and 3,500 fewer hospital admissions per year in the UK.

It has also been suggested that these policies have reduced life years lost by between 39,000 and 117,000 in 2001. However up to 24,000 deaths and 24,000 hospital admissions annually are still associated with high levels of air pollution.

The major source of air pollution affecting the Councils area is road traffic the main source being the M25. This is a road of national and regional significance and subsequently the most important actions involve seeking to influence policy.

1.3 National Air Quality Strategy

Part IV of the Environment Act 1995 introduced new responsibilities to both national and local government throughout the UK. These responsibilities include the requirement upon the national government and devolved administrations to develop an Air Quality Strategy (AQS) for England, Wales, Scotland and Northern Ireland (DEFRA, 2000). The overall purpose of the AQS is to seek improvements in air quality for the benefit of public health. The first AQS was produced in 1997; it was amended in 2000 and has been now reviewed and updated in 2007.

1.4 Local Air Quality Management (LAQM)

Local air quality management (LAQM) was also introduced by the Environment Act 1995. It requires local authorities to periodically review and assess air quality across their areas. The AQS confirms that LAQM provides a major component of the government's plan for air quality improvement across the UK. The LAQM process requires a phased approach. This is to ensure that each local authority undertakes a level of assessment that is commensurate with the risk of an air quality objective being exceeded.

Air quality objectives have been set for those air pollutants deemed to be of most concern and seven of these are included under the LAQM regime. A summary of these pollutants and the air quality objectives is given in Appendix 1. The objectives are all based on health-based standards using current scientific advice taking into account the likely cost and benefits, as well as feasibility and practicality in meeting the objectives. The objectives are mostly in line with limit values prescribed by EU Directive, although additional objectives (including bringing forward the date for compliance) have been included for some pollutants.

2.0 Overview of Air Quality in Runnymede BC

2.1 Monitoring of Air Quality

The Council carries out diffusion tube monitoring for NO₂ at seven different sites through out the Borough, these include sites at kerbside, intermediate and background locations. These were most recently reported in the Council's Updating and Screening Assessment (USA) 2006.

Monitoring is also undertaken in neighbouring boroughs as part of the London Air Quality Network (LAQN). Supplementary to this monitoring is the monitoring station set up by the Highways Agency to monitor NO_x and PM₁₀. This site is just outside the Borough between junctions 13 and 14 on the M25 (adjacent to the motorway slip road on the clockwise direction side). The combined information from these sources indicates the air quality in the Borough.

Relevant actions to this section listed in the Action Plan include: 1, 2.

2.2 Review and Assessment

2.2.1 Stage 1 and 2

The first stage of the Review and Assessment (R&A) started in 1999 and the Council has assessed and screened benzene, 1,3 butadiene, Carbon Monoxide, Lead and Sulphur Dioxide (SO₂) and found that they were not likely to exceed to the air quality objectives in the Borough. The process for the first round of R&A is shown in Table 1.

However for nitrogen dioxide (NO₂) and particulate matter (PM₁₀), the Council undertook another assessment (termed "Stage 3"). This showed that the annual mean objective for NO₂ of 40 µg m⁻³ and the 24-hour mean objective of more than 35 days with a daily mean exceeding 50 µg m⁻³ for PM₁₀ were likely to be exceeded in two areas in the borough that are located alongside the M25.

Table 1- Review and Assessment progress

<u>Stage 1</u>		<u>Stage 2</u>		<u>Stage 3</u>	
Benzene	→	Benzene			
1,3 – Butadiene					
Carbon Monoxide (CO)	→	Carbon Monoxide			
Lead					
Nitrogen Dioxide (NO ₂)	→	Nitrogen Dioxide (NO ₂)	→	Nitrogen Dioxide (NO ₂)	
Particulates (PM ₁₀)	→	Particulates (PM ₁₀)	→	Particulates (PM ₁₀)	
Sulphur Dioxide (SO ₂)	→	Sulphur Dioxide (SO ₂)			

2.2.2 Stage 3

The Stage 3 review and assessment was completed in 2000. The main findings were that most of the Borough is not expected to have any problems meeting the objectives. However, there are narrow corridors adjacent to the M25 where the standards will be difficult to achieve for NO₂ and PM₁₀. Those areas of the M25 identified where there is relevant exposure are close to the carriageways near Egham, Addlestone and New Haw.

On the basis of the Stage 3 review and assessment, the Council was obliged to declare an Air Quality Management Area (AQMA). The AQMA order became effective from 30th November 2001 following a period of statutory and public consultation.

2.2.3 Stage 4

Having declared an AQMA, a further assessment was required (termed the “Stage 4”). This was undertaken to determine the relative contribution of the different sources of pollution. This further review and assessment provided a technical justification for the measures contained in this Action Plan and allowed the Council specifically:

- To confirm the original assessment of air quality and to show that the Council was right to declare an AQMA
- To calculate more accurately how much of an improvement in air quality would be required to deliver the air quality objectives within the AQMA
- To refine our knowledge of the sources of air pollution so that the AQAP is properly targeted
- To take account of any developments in local or national policy which occurred after the AQMA was declared, which were not factored into the earlier assessment work

To better understand the improvement needed at a location to achieve the AQS objectives, it was necessary to determine the individual source emissions that contribute to the overall predicted pollution concentration. Both pollutant emissions and atmospheric processes, including meteorology, determine the pollution concentration at any given location.

The pollutants under investigation, i.e. NO₂ and PM₁₀, also complicate the understanding of source apportionment. For NO₂, to understand the different sources it is necessary to examine the contribution of oxides of nitrogen (Nox) from combustion sources, because NO₂ is mostly a secondary pollutant, formed as a result of complicated atmospheric chemistry from Nox. For PM₁₀ it was necessary to understand the influence of the primary, secondary and coarse components, which contribute to the total concentration. It is the 24-hour mean objective, which is predicted to be exceeded. However the source apportionment undertaken is based on annual mean PM₁₀, which is averaged over a longer timescale and therefore less affected by specific events.

The Stage 4 review and assessment provided stronger evidence to support the need for action to reduce the impact of emissions from road transport using the M25. This used the Government’s revised emission factors. The modelling undertaken for the Stage 4 review and assessment confirmed that the annual mean standard for NO₂ is the more stringent of the two standards that are exceeded. Hence the area where the PM₁₀ standard is exceeded is smaller than the area where the NO₂ standard is exceeded. For both pollutants only small areas containing few sites of relevant exposure were identified.

Source apportionment monitoring at relevant locations close to the M25 showed that HGVs are the dominant source of NO_x, being responsible for more than 50% at all locations. The contribution from cars is just over 25% at all locations. The contribution from buses and coaches however is negligible, being less than 2% at all locations. (See Appendix 3)

In order to meet the air quality standards it will be necessary to further reduce overall concentrations of NO₂ within the AQMA by up to 8%. A number of scenarios were modelled to test how this could be achieved. Although impracticable in the short term, this work has shown that the most effective intervention would be to reduce the number of HGVs on the M25 by

10%. A slightly lower level of reduction could be achieved by optimising average speeds to 80 kph (50 mph), although this still may not be sufficient for achieving the AQS at all receptor sites.

Source apportionment work for PM₁₀ showed that the background concentration dominates when compared to the total traffic contribution. HGVs are the main transport emission source and account for just over 16% of the total, whilst the car contribution is about one third of this. The coach and bus sources, as seen with NO₂, are negligible. Optimising vehicle speeds to 80kph (50 mph) and reducing HGVs by 10% could result in meeting the PM₁₀ standard. The Figures 1 and 2 indicate the extent of the AQMA throughout the Council's area.

Two of the locations investigated were close to the Borough boundary and these areas highlighted the contributions from sources outside the Council's area. It is therefore important to work in partnership with other local authorities and organizations outside Runnymede in order to reduce air pollution levels.

For PM₁₀ the contributions from heavy goods vehicles exceeded that of cars, and for all locations the contribution from cars exceeded that of buses. The background PM₁₀ contribution at all locations was predicted as being almost constant (approximately 21 µg m⁻³).

In conclusion the as Stage 4 highlighted that for the greatest reduction national action (as opposed to just Runnymede action) is most likely to provide the greatest improvement in air quality.

Figure 1 – AQMA for NO₂ and hourly PM₁₀ (junctions 11 to 13 of M25)

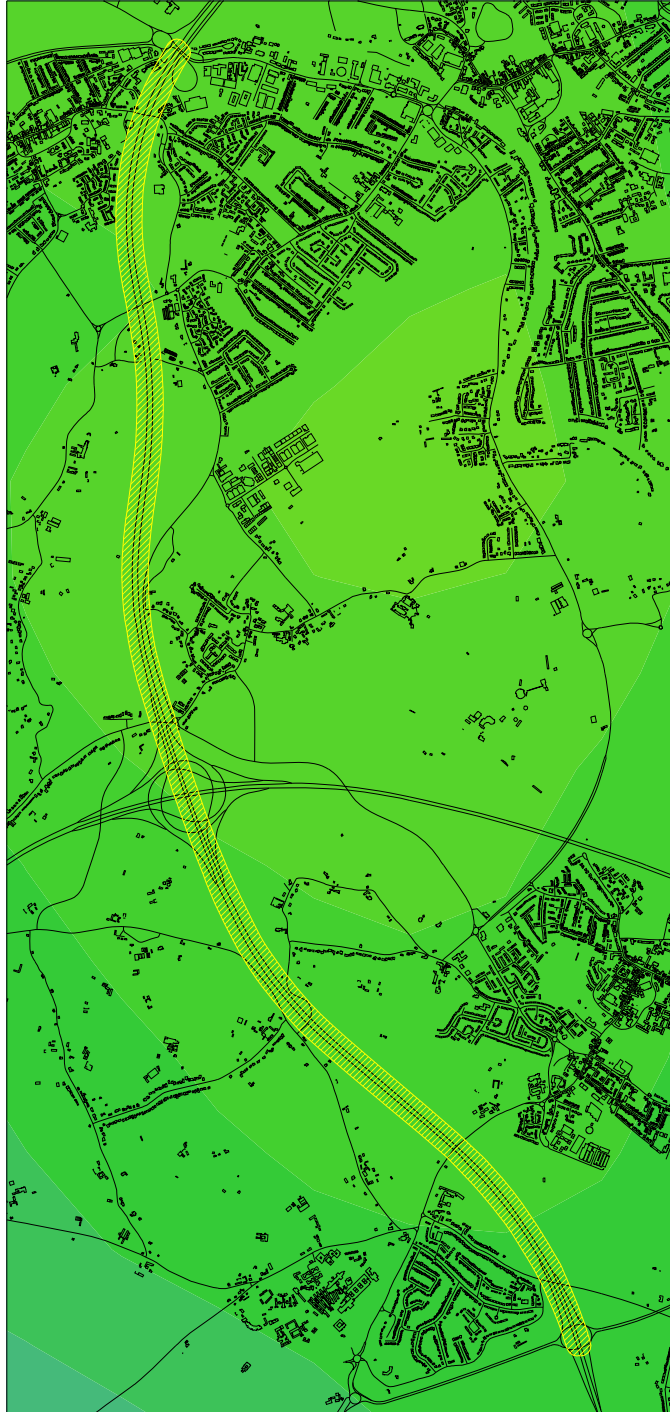


Figure 2 – AQMA for NO₂ (southern boundary of Runnymede Borough Council to section 11 of the M25)



2.2.4 Updating and Screening Assessment (USA) 2006

Local authorities are required to review and assess air quality against the objectives in the Air Quality Regulations 2000 and the amendment regulations as part of a rolling three-year cycle ending in 2010. This report provided a new assessment to identify those matters that have changed since the last review and assessment, and which might lead to a risk of the objective being exceeded. It also updates on new local developments affecting the Borough.

The conclusions of the third round USA were as follows:

- For carbon monoxide, benzene, 1,3-butadiene, lead and sulphur dioxide there is not a significant risk of exceeding the objectives in the Council's area.
- For NO₂ the Council has previously designated part of its area an AQMA. Recent monitoring results confirm that concentrations continue to exceed the annual mean objective where there is relevant exposure. Additional monitoring outside the AQMA has confirmed that the annual mean objective has been exceeded in the town centre of Addlestone. The monitoring is undertaken in an area considered representative of relevant exposure.
- For PM₁₀ (for 2004) the Council has previously designated part of its area an AQMA. Recent monitoring results and an analysis of rolling trends based on monitoring in the Borough indicates that concentrations are not reducing from those monitored in 2001.
- For PM₁₀ (for 2010 only) despite the expected reductions in emissions there is a risk of the objectives being exceeded across parts of the Borough. The Council however is not required to undertake actions at this time in respect of this finding, other than to note it for longer term planning purposes.

As a result of these findings, the Council was required to undertake a Detailed Assessment of NO₂ in the Addlestone town centre and also maintain its existing AQMA.

2.2.5 Detailed Assessment 2007

This assessment fulfilled the Council's next step of the LAQM process and was required as a result of the findings of the Council's USA 2006 report. The purpose of this report is to provide an accurate assessment of the likelihood of the objective being exceeded at locations with relevant exposure.

The findings of this report were as follows:

- For NO₂ concentrations near the Station Road and High Street junction in Addlestone had the highest predicted concentrations and these included areas with relevant exposure. As a result an AQMA should be designated in the High Street and Station Road, subject to further monitoring in the area.
- For NO₂ the predictions for the New Haw area also indicated that the objective was exceeded mainly close to the road centre lines and not at the façade of residential premises in the area.
- The modelling of the New Haw area for PM₁₀ indicated that the daily mean objective was not exceeded where there was relevant exposure.

In respect to the above finding for the statutory objective relating to annual mean NO₂ the Council will be undertaking the following actions:

1. For the High Street, and Station Road area in Addlestone confirm that there is relevant exposure in the area predicted to exceed by extending the monitoring in the area
2. For the New Haw area confirm that there is not relevant exposure in the area predicted to exceed.

3.0 Air Quality Action Plan in relation to existing Council Policies

3.1 Introduction

This document sets out the actions that the Council is currently taking and intending to take to improve air quality in the borough. The actions described include those taken by the Council on its own, and those taken in partnership with the local community, local businesses as well as regional and national agencies.

The AQAP seeks to be consistent and build on other Council policies such as the Unitary Development Plan (UDP), the newly emerging Local Development Framework, which will supersede the UDP, and the transport related Local Implementation Plan.

The Action Plan has been developed within the context of the Council's vision and key priorities (see below) and the written in accordance with guidance issued by government's Department for the Environment, Food and Rural Affairs (DEFRA) and the National society for Clean Air (NSCA).

Road traffic is a major contributor to the standard of air quality in Runnymede. However, air pollution comes from a wide variety of sources and the Action Plan reflects this by including actions relating to domestic, commercial and industrial activities as well as road transport.

This Action Plan draws on all the measures that the Council is taking where air quality will benefit and also seeks to show how these actions have a wider significance. The wide range of proposed measures is to improve air quality throughout the Borough.

3.2 Aims of Air Quality Action Plan

The M25 is a vital and nationally important strategic road and traffic movements on it are generated locally, regionally and nationally and so action has to be taken at all these levels to endeavour to achieve the target improvements in air quality.

The main aim of this Action Plan is therefore, through joint working with other bodies, including local authorities and other organisations, plus departments within the Council, to propose and deliver measures that will work towards achieving the desired reductions in NO₂ and PM₁₀.

The aim is also to encourage active participation in the achievement of the Action Plan measures by consulting the local community and raising awareness of air quality issues. Existing and proposed measures to improve air quality through transport planning, land use planning, pollution control, local air quality management, energy management and environmental promotion are set out below.

The most direct impacts on the main source of pollution can be achieved through transport planning, however the Council has only very limited powers for undertaking these specific actions. The other measures that the Council can undertake are indirect and limited in that they affect the general background levels of pollution in the wider area.

A summary of the measures to be implemented is provided in the next chapter and an outline assessment of the costs and benefits of each of these is made. This process allows measures to be prioritised and timetabled.

3.3 The Council Vision

In June 2005, the Council adopted a new Vision, a set of key aims and a message for staff. These are consistent with the Community Strategy Ambitions.

The vision, aims and budget priorities are intended to guide the Council when it makes decisions about how best to provide services and how to fund them. The priorities are based on those things that local people have said are important to them. At Runnymede, the ambitions of the Council and the Borough are reflected in our Vision:

Achieving Quality and Excellence

"Ensure we play an effective role in enhancing the quality of life for all our residents and visitors and provide an attractive environment for those who conduct their business in the Borough".

Achieving Added Value

"Maintain rigorous financial control of the Council's affairs to ensure we keep to a minimum any additional call on Council Taxpayers".

By being informed through a number of strategies and plans, the Council has identified five strategic objectives that underpin the work to achieve the two principal aims, and form the basis for the Council's work. On behalf of residents the Borough Council wants to:

1. Achieve quality services
2. Achieve value for money
3. Improve the quality of life
4. Achieve economic prosperity
5. Achieve Continuous improvement

3.4 Runnymede BC Planning Policies

The Council is responsible for the production of a Local Development Framework (LDF). This will be a portfolio of Local Development Documents that will set out the spatial strategy for Runnymede and progressively replace the 2001 Borough Local Plan and the 2004 Surrey Structure Plan. The LDF will build upon existing local and regional strategies and initiatives, in particular the Community Strategy

The new planning system places an emphasis on strengthening community and stakeholder involvement in the planning process. The Statement of Community Involvement (SCI) sets out how local communities and stakeholders with an interest in the area can play a part in the preparation and revision of planning documents and the consideration of planning applications. On the 14th December 2006 the SCI was formally adopted.

The Runnymede LDF currently includes the following Local Development Documents:

- Statement of Community Involvement
- Core Strategy

- Housing
- Primary Development Control Policies
- Proposals Map
- Annual Monitoring Report
- Supplementary Planning Documents

The Local Development Scheme (LDS) is a three-year project plan that sets out all the documents that will be produced and timetable for their preparation. The new system involves substantial community participation from the beginning of the plan preparation process. Policies in Local Development Frameworks relate to 'spatial' matters rather than land use issues which Borough Local Plan focus on. All policies and proposals are subject to a Sustainability Appraisal and Strategic Environmental Assessment to ensure that social, economic and environment issues have been taken into consideration. The scheme was revised as part of the Annual Monitoring Report (2004-2005) and was subsequently amended. The Government Office for the South East signed off the amended scheme on 16th February 2006 and approved the Runnymede LDS on the 24th December 2006.

The LDF emphasises the importance of locating high density development in areas of high public transport accessibility in order to achieve a reduction in traffic, increased public transport patronage and making better use of existing land. This is in conformity with the adopted Surrey Structure Plan 2004.

3.5 Runnymede BC Transport Policies

The Strategic Plan sets out a clear direction for the council and identifies priorities for 2005 - 2010. The priorities reflect the aspirations of the local community and give focus to the council's service delivery. One of the key objectives in this plan is Access and Transport. The aims of this objective are to identify solutions to congestion in the Borough, with partners. The reduction of emissions from all road traffic through transport planning is an important part of achieving the Action Plan aims, both within the AQMA and beyond.

The Council will achieve this by continuing to work with the lead agency on transport which is the Highways and Transportation Authority (Surrey County Council), and private sector providers to progress, develop and expand alternative transportation to the private car in order to ease congestion and provide more convenient and safer modes of travel. The Council will work alongside lead agencies to support an integrated approach to offer people a wider choice of travel through the Local Transport Plan (LTP). The objectives of the LTP are to improve co-ordination between all forms of transport, to protect the environment, and improve the safety and security of transport.

3.6 Runnymede BC Community Strategy

This has been produced in response to Government legislation, although it is a strategy informed by people involved in Runnymede, and so it has been developed on behalf of those who live and work in Runnymede to improve the future in Runnymede. It attempts to draw together the main priorities of the people of Runnymede for the next five, ten and even fifteen years and has been produced following an extensive consultation exercise.

The main difference with this document is the involvement and commitment of a wide number of organisations across Runnymede. 'A Partnership for Runnymede' contains representatives from a number of community organisations, statutory organisations and other voluntary groups. The Partnership is collectively charged with delivering the priorities of Runnymede. The priorities are based on nine issues include: Affordable Housing; Access and Transport; Community Safety;

Economic Prosperity; Education; Environment; Health and Social Care; Leisure and Culture and Young People.

Six separate Task Groups have been formed comprising representatives from a wide range of community groups, voluntary groups, statutory organisations and other public agencies. These groups help set the targets and outcomes arising from the Strategy, which require input both in the short and long term from a range of statutory agencies (e.g. Police, Health bodies, Surrey County Council) and other community stakeholders (e.g. businesses, voluntary and charitable groups) not just the Council. The Strategy document and proposed follow up actions must therefore be seen as a collaborative community endeavour with a range of responsibilities for delivery. Each year, the Partnership for Runnymede publishes a progress report to give people an opportunity to reassess their aspirations, through the Visioning Forum.

3.7 Surrey County Council Policies

The Runnymede Borough Council's area lies within Surrey and as such is influenced by the County Council's strategies. Sustainable Development lies at the heart of Surrey County Council policies and actions as can be seen in Figure 3

The Council worked closely with the Surrey County Council on the production of its Local Transport Plan (LTP) for 2006/07 to 2010/11. This 5-year plan outlined how transport issues will be addressed in Surrey (including the Council's area) through an integrated approach that seeks to offer a wider choice of travel alternatives whilst managing traffic and restraining the demand for travel. Extensive consultation and participation was the foundation for every part of the LTP and this was achieved through questionnaire surveys, seminars, workshops, focus group sessions and communication with business groups, Local Agenda 21 groups and single interest groups. The aim of the LTP is:

"To provide the freedom to get around, to gain access to every day facilities and to establish a transport system that supports the economy in a way that ensures a better quality of life, both now and in the future".

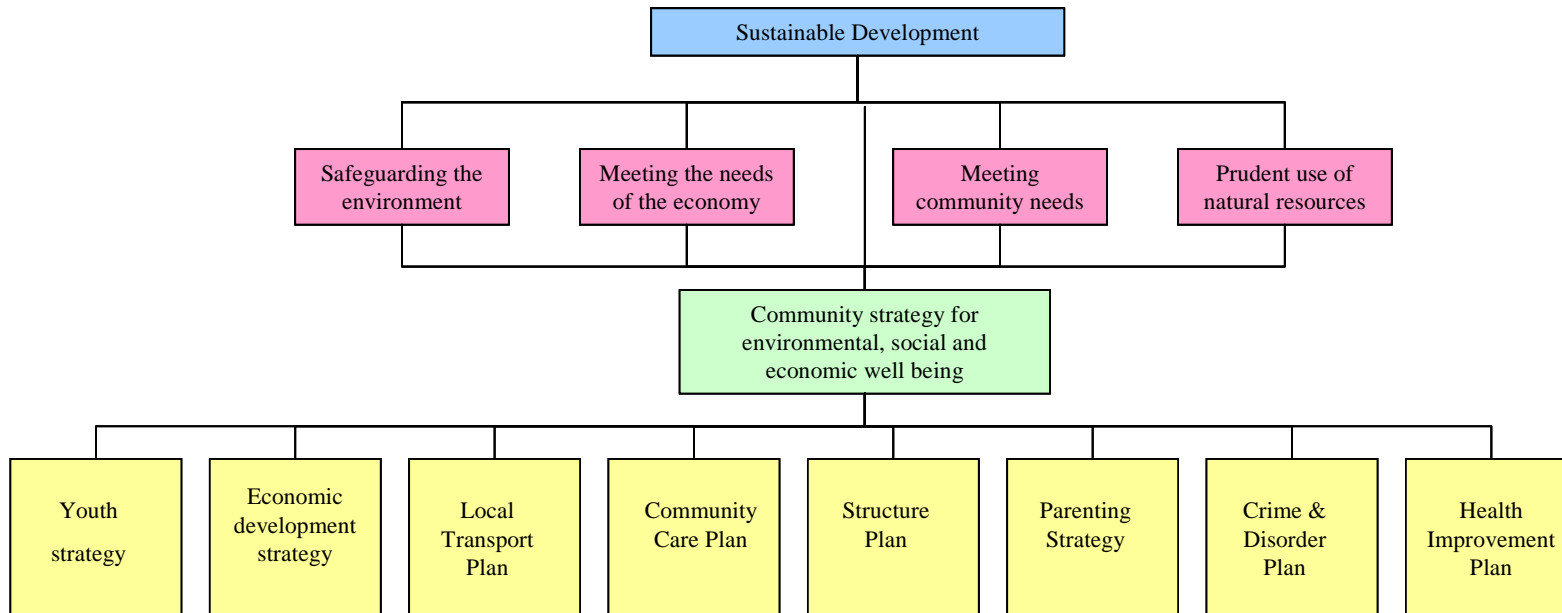
The five strategic objectives of the LTP for Surrey are:

1. Tackling congestion to limit delays
2. Increasing accessibility to key services and facilities
3. Improving road safety and security
4. Enhancing the environment and quality of life
5. Improving management and maintenance of our transport network.

The Surrey Structure Plan provides the strategic framework for land use planning in the county, shaping Surrey's future physically and environmentally, and influencing it economically and socially. Together with local plans prepared by district and borough councils and a countywide minerals and waste plan, it forms the overall Development Plan for Surrey.

The Surrey Structure Plan 2004 was approved by the County Council on 19 October 2004 and adopted on 4 December when it came into operation. As a result of the Planning and Compulsory Purchase Act 2004, Structure plans are due to be replaced by Regional Spatial Strategies (RSSs). The RSS for the South East, known as the South East Plan, will be adopted during 2008.

Figure 3 - Sustainable Development within Surrey County Council



(Source: Redrawn from Surrey County Council Local Transport Plan 2006/07 to 2010/11)

4.0 Identification of Transport Related Measures

4.1 Introduction

Transport plays a significant part in our daily lives so it is essential that policies and plans regarding transport integrate with other Council initiatives in supporting the achievements of the Council's priorities.

As already highlighted the greatest amount of air pollutants arises from road transport Emissions, particularly from the heavily trafficked roads. Many of these roads (including the A30, A308, A317, A318, A320, and M3, M25) come under the jurisdiction of the Surrey County Council (SCC) and the Highways Agency (HA). As the Council does not have direct responsibility for roads such as these and any plans to control pollution needs to be in partnership with SCC and the HA.

Current government and regional planning guidance identifies the requirement to reduce the need to travel by private road transport as a major objective to sustainable development. To pursue the sustainable objective the Council encourages the wider patronage of public transport and environmentally friendly forms of travel such as walking and cycling, whilst discouraging and restricting growth of motor vehicle use. Sustainability also involves development for economic growth to support the national and local economies.

The Council also supports policies within the Surrey Structure Plan (2004). The Council sees these policies as a means to tackle a whole raft of problems and issues, such as improving air quality, reducing congestion, improving conditions for buses and encouraging people to walk and cycle more.

The Runnymede Travel Initiative is a major step forward in working with businesses and schools in reducing peak hour congestion by providing increased cycle routes and shelters, walking buses and the Yellow Bus Scheme for school children. In addition, the Council is taking a proactive role in supporting the implementation of several major transport schemes including Airtrack.

4.2 Low Emission Zone (LEZ)

The Mayor of London made a manifesto commitment to introduce a Low Emission Zone (LEZ), to improve London's air quality. The objectives of the proposed LEZ are to move London closer to achieving national and EU air quality objectives for 2010, and to improve the health and quality of life of people who live and work in London, through improving air quality. Following consultation, the Mayor of London in May 2007, approved plans from TfL for the implementation of a LEZ, to cut harmful emissions from the most polluting lorries, coaches and buses.

It will begin in February 2008, with the aim of improving air quality across the capital. From February 2008 the LEZ will apply to lorries over 12 tonnes. From July 2008 the LEZ will also apply to lighter lorries, buses and coaches. Cars, motorcycles and small vans are not currently included in the LEZ.

Operators of affected lorries, buses and coaches that do not meet the LEZ standards (unless exempt or entitled to a 100% discount) will need to pay a charge of £200 for each charging day they are driven in the zone. The level of charge has been set in order to encourage operators to clean up their fleets rather than to incur a charge. It is hoped that very few non-compliant vehicles will be driven in the zone. From 2010, the heaviest, most polluting light goods vehicles (LGVs) and minibuses will also be included in the scheme. The lightest LGVs (almost exclusively car derived vans) would be excluded from this stage as they have car-like missions.

Should an operator of a non-compliant vehicle not pay the daily charge for driving within the LEZ, then following the service of a penalty charge notice (PCN), a penalty charge of £1,000 will apply for lorries, buses and coaches and other relevant vehicles over 3.5 tonnes, reduced to £500 if paid within 14 days.

To maximise improvements in air quality and health benefits, it is proposed that the LEZ would cover all of Greater London area and operate 24 hours a day, 365 days a year. The proposed LEZ will be implemented via a Scheme Order under the GLA Act 1999

The Council has generally supported the introduction of the London LEZ and expects the scheme to contribute to an improvement in air quality within Runnymede. We have been involved in the consultation and are working with Transport for London to ensure that additional HGV traffic is not diverted unnecessarily onto the boroughs roads.

Relevant actions to this section listed in the Action Plan include: 3.

4.3 The M25

The primary source of pollution (i.e. NO₂ and PM₁₀) contributing to the exceedences of the air quality objectives in the AQMA is the large volume of traffic on the M25. This totals more than 200,000 vehicles per day using the stretch of motorway within the Council's area. The M25 is a trunk road of national and regional significance and as such is the responsibility of the Highways Agency. However, any measures proposed for the M25 may affect local road management, so these will need to be considered jointly by the Highways Agency, the County Council as the local Highway Authority, District and Borough Councils.

In 2000, the Secretary of State also announced the approval for the M25 widening scheme. Of particular importance to the Council's AQMA is the widening of a 7 mile stretch of the motorway between junctions 12 (M3 interchange) to junction 15 (M4 interchange) plus the construction of the Heathrow Terminal 5 spur road. The construction works commenced on the 5th of January 2004 and are expected to continue for several years, the scheme includes:

- Widening to 5 lanes in both directions between junctions 12, 13 and 14
- Widening to 4 or 5 lanes in both directions between junctions 11 and 12
- Widening to 6 lanes in both directions between junctions 14 and 15
- Widening to 4 lanes in both directions through junctions 13 and 14.

(Note – the latter two are outside the Council's area)

Runnymede is working with the Highways Agency in supporting a monitoring programme along the M25 to measure the effect of the widening works on air quality and within Runnymede there are 25 NO₂ diffusion tubes that supplement the Council's area wide monitoring programme.

Possible options for reducing the adverse effects of the motorway on local air quality include reducing levels of HGV emissions, optimising the speed of vehicles and providing enhanced screening.

Reducing emissions from HGVs

The Stage 4 modelling indicated that a reduction of total HGV emissions would assist in the achievement of the meeting the objectives. Clearly it is not feasible to reduce emissions by removing 10% of HGV traffic for a variety of reasons. Measures to seek the reduction of emissions can however potentially be sought through a variety of other options including the development of Freight Quality Partnerships, use of less polluting fuels and vehicles, transfer of

freight from road to other modes e.g. rail. Any action deriving from these options will involve partnership working and may involve high costs.

Optimising Speed

The optimum speed for minimising emissions from vehicles is 50 mph. The use of a speed limit, whether fixed or variable, requires enforcement for maximum effectiveness. Speed cameras would be the most effective but the costs of these are high. Variable speed limits in peak periods were introduced in 1995 and are used to reduce flow breakdown in the busiest stretch of the M25. The costs of implementing this are higher than for a fixed speed limit.

Another option would be the provision of information/advisory signs informing drivers of the AQMA and requesting that they drive at 50 mph. The effectiveness of a purely informative/advisory measure is uncertain.

Relevant actions to this section listed in the Action Plan include: 4.

4.4 Freight

The council does not have its own Freight Quality Partnership; however it participates in the South East Regional Partnership and attends freight forums. The Council will continue to work with Surrey CC to achieve the aims of the Surrey Sustainable Distribution Partnership, directly or through the South East Regional Partnership.

Freight Quality Partnerships will aim to balance the concerns of local residents on the environmental impact of lorries on their communities with the operational needs of freight distribution companies.

Relevant actions to this section listed in the Action Plan include: 5.

4.5 Parking and Enforcement

In November 2004 the Council took over responsibility for enforcing all parking regulations in the Borough from Surrey Police. Parking supply and charging policies for both on and off street parking can significantly influence parking demand, parking space turnover and ultimately car use and ownership.

The Council's current Supplementary Planning Guidance on Parking Standards was adopted in October 2001, based on national guidance and the Surrey County Council residential highway and parking standards. This establishes maximum parking standards and requires that the levels of parking be reduced in accessible locations such as town centres, where alternative modes of transport are available. Standards are also set out for disabled parking to be included in both residential and non-residential schemes, and cycle parking.

Relevant actions to this section listed in the Action Plan include: 6.

4.6 Traffic Management

The Environment Act 1995 has confirmed that Traffic Regulation Orders, and hence management schemes, may be used for air quality management purposes. One form of traffic management, traffic calming, is utilised in the Borough in a variety of forms e.g. road humps, 20mph zones. Traffic calming has been shown to increase localised emissions and may only

displace traffic elsewhere; however the potential improvement in air quality by reducing traffic volumes, congestion etc means that these schemes still play a part in vehicle emission management in particular areas. The overall impact on improving air quality would be minimal, but such schemes contribute to the net aim of this Action Plan and are particularly effective at reducing vehicle speeds, as well as the frequency and severity of accidents.

Road resurfacing is undertaken either during off-peak periods or overnight in order to reduce congestion and associated vehicle emissions, although it is acknowledged overnight working can be disturbing to residents. The surfacing material laid on the busiest roads has been changed to stone mastic asphalt, which can be laid in one process instead of the previous two, thus reducing plant usage and vehicle movements.

It has already been noted earlier that the both the HA and SCC are responsible for major routes in the Borough. The Council works in partnership with Surrey County Council on specific projects in the Borough and where improvements to air quality can be identified through transport management improvements, including Urban Traffic Management Control (UTMC) system and other ITS Systems the Council will seek their implementation. The council's CCTV systems have been linked to Surrey CC Network Management Information Centre (NIMC) to provide real time images to enhance the network management capability within Runnymede.

Pre and post construction phase Traffic Flow and Speed Surveys have been compared by the Council to gauge the success of the Garfield Road Traffic Calming Scheme. This location was selected because of the close proximity of a Primary School and several sheltered housing properties. The Scheme was designed to reduce 'rat-running' down Garfield Road, Crockford Park Road and Corrie Road by reducing vehicle speeds and numbers thus making it a safer, more pleasant environment for pedestrians and residents. The results showed that between March 2000 and March 2004, vehicle numbers reduced by over 20% and the average speed reduced from 35mph to 24mph on the northbound carriageway. On the southbound carriageway vehicle numbers reduced by 6% and the average speed was cut from 35mph to 25mph.

Relevant actions to this section listed in the Action Plan include: 7, 8, 9.

4.7 Public Transport

Runnymede enjoys a reasonable level of accessibility by public transport. The availability of affordable, reliable, convenient and safe public transport services is important if people are to use it as a viable alternative to owning or using a car. The Council's UDP supports and encourages the improvement of public transport including new transport links, bus priority schemes, improved interchanges and access for people with disabilities.

The Council fully supports major public transport projects such as Airtrack as a way to relieve overcrowding, congestion and to contribute to regeneration. The Borough hosts an annual public transport liaison meeting with Surrey County Council, which discusses further methods to increase public transport capacity.

4.7.1 Buses

Apart from being an efficient mode of transport and user of road-space, buses provide vital links to railway services as well as to local shopping centres, places of entertainment and work. There are over 25 bus routes in the Borough, although the potential to provide new links and improve accessibility and bus stops is acknowledged. On some services there is scope to increase passenger numbers.

The Council supports the provision of bus interchanges by the Traffic Authority across the Borough especially in town centres such as Addlestone, Egham and Chertsey Town Centre. Improvement measures to encourage modal shift from car to bus, such as such as relocation of on-street parking and provision of bus clearways for quicker journeys. An example of this is the implementation of the Magna Carta Quality Bus Partnership (QBP). This QBP includes measures such as new bus lanes and selective vehicle detection at traffic signals.

In partnership with the County Council, BAA and local bus operators the council has produced a Runnymede Quality Bus Partnership leaflet containing information on car-free travel options within the Englefield Green to Heathrow area.

Yellow Bus Scheme

Runnymede's innovative home to school transport has been praised as a leading scheme to get children safely and on time to school by bus. The Yellow Bus Scheme is funded by the Council, the Runnymede Business Partnership (RBP) and fares taken for journeys. The RBP is a formal organisation of local businesses, schools, colleges, Surrey Police and the Borough Council and gives a third funding to the Yellow School Bus scheme.

The Council works with four local secondary schools that have signed up to the Yellow School Bus scheme since its Borough-wide launch in February 2002 when it became the first to do so in the South East. This service is operated for Runnymede by FirstGroup plc the main provider of these American styled school buses. In the Borough seven Yellow School Buses, each seating 60 school children, travel twice daily to and from the Fullbrook, Jubilee, Magna Carta and Salesian schools. They carry approximately 500 students twice a day. There are also late-run school buses for pupils staying behind for after-school activities.

The Council sees this arrangement as a real way to reduce traffic congestion. The schools jointly have 4,700 pupils on their registers and this programme significantly reduces the number of cars used on their local school runs. The service has the potential to replace 180,000 car trips per year.

4.7.2 Railways

Runnymede Borough Council, through its Community Strategy and Local Plan policies, supports the County Council's intention to seek the improvement of rail services to the area and encourage the upgrading of interchange sites between different transport modes within the Borough at Virginia Water, Chertsey, Byfleet and New Haw. The Council actively encourages the better coordination of timetabling between bus and train services at these interchanges. Currently there are 3 links to Runnymede from London Waterloo, Reading and a loop line via Chertsey and Addlestone.

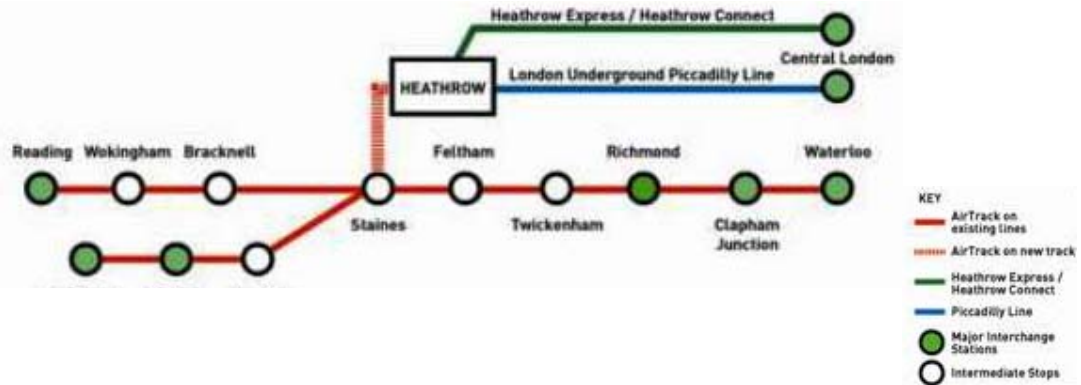
The Council, in support of its integrated planning and transport strategy, also actively encourages the development of new rail services in the Borough and beyond. Such opportunities include the development of a rail service called Airtrack (See Figure 4).

Airtrack is proposed to operate between Heathrow airport and North & West Surrey. The details are as follows:

- To connect Heathrow directly to the South West Trains rail network and create direct or one-change rail access to Heathrow for air passengers from across south and south west London and southern England, who currently have no rail link to the airport.

- It will comprise of three new services to Terminal 5, via Staines: from London Waterloo via Richmond; Guildford via Woking and Reading via Bracknell, with stops at selected stations on each route.
- Planned to operate every 30 minutes in each direction on each route, making six trains an hour to and from Heathrow, with end-to-end journey times of between 35 and 45 minutes.
- Provide more capacity on the suburban rail network, particularly to London Waterloo.

Figure 4: Diagrammatic map of the AirTrack proposal



This rail service is envisaged to reduce local road congestion (5,000 fewer car journeys per day in the morning peak) and improve access for the thousands of people who work at Heathrow or the surrounding area. It will also offer car users a realistic alternative in one of the most congested parts of the South East especially for orbital journeys where public transport is currently poor.

Measures to develop new services are however likely to be high cost, whilst the impact on the AQMA is likely to be small, unless a significant number of HGVs are removed through the transfer of freight from road to rail.

Relevant actions to this section listed in the Action Plan include: 10.

4.8 Cycling

Runnymede Cycle Strategy is a scheme run in collaboration with the Surrey County Council to promote the use of cycling through the creation of interconnected and extensive pedestrian /cycle pathways through out the Borough as well as establishing links to other boroughs. Recent infrastructural improvements include the construction of the Guildford Road cycle route along the A320 Chertsey Lane (see Figure 5). Further construction has also taken place from St.Peter's roundabout along the A320 to Ottershaw and continuing on to the Borough Boundary. This route links with the cycle route from Woking. Covered cycle parking areas has been provided at Addlestone, Chertsey and Egham railway stations, and cycle parking stands are normally included in any major street refurbishment, recreational or new development scheme.

Cycleway maps are easily accessible from the Runnymede Online Website and the Surrey County Website. Within Runnymede, the 'Chertsey Alternative Transport Group' supports safe ways of using cycles as a feasible alternative to using the car. Recently, 12 new cycle shelters have been installed at 6 Runnymede schools to provide secure storage for 500 bikes. The shelters were funded by the Local Transport Plan monies and are installed at the following schools:

- Abbeylands, Addlestone
- Fullbrook, New Haw
- Magna Carta, Egham

- St George's College, Addlestone
- Salesian School, Chertsey
- Sir William Perkins, Chertsey

Figure 5: Guildford Road Cycle Route



The County Council also encourages companies to participate in a Pool Bike Scheme to reduce car journeys by staff. A successful pilot scheme ran in 2002 with ten companies participating and the 2004 scheme appears to be as successful with the offer of a grant to build an on site bike park as an incentive for companies to enter. To further widen travel choice for the residents, the County Council in November 2004 launched a county wide car share scheme which currently has over 200,000 registered users.

Relevant actions to this section listed in the Action Plan include: 11,12.

4.9 Walking

According to Central Government, 45% of car journeys are less than 5km. Walking and cycling offer significant potential to contribute to more sustainable journey patterns as well as promoting better health. The Council wish to encourage more residents to walk as an alternative to car use. There are numerous plans to improve conditions for pedestrians. Within the Borough there are over 120 Public Rights of Way forming an extensive network which encompasses a differing range of environments.

The council work collaborates with Surrey County Council in scheme called the 'Safe Routes to School'. One of the initiatives within this scheme is the 'Walking Bus'. The aim of this initiative is to reduce peak school traffic congestion. Currently, 8 of the 25 Pre-Secondary Schools in the Borough have Walking and Cycling Buses. (See Figure 6)

Figure 6: Runnymede 'Walking Bus' at Manorcroft Primary School, Egham'



Relevant actions to this section listed in the Action Plan include: 13,14.

4.10 Council Fleet

The current fleet of 40 vehicles runs on ultra low sulphur diesel. Nine of the refuse vehicles are fitted with Catalytic Regenerative Traps (CRT) to minimise particulate emissions. The council is in the process of formulating a green fleet policy under their climate change programme.

Relevant actions to this section listed in the Action Plan include: 15,16,17.

4.11 Runnymede BC Travel Plan

Both the Council and the County Council actively encourage the development of Company Travel Plans (CTP) and have set up their own CTPs as examples to companies within the Borough.

The Council adopted its own Travel Plan (TP) in November 2006, providing a benchmark for other organisations within the Borough, as they develop their own Plans. The Council is one of the largest employers in the Borough, with approximately 500 employees, therefore the uptake of such a Plan, in conjunction with other measures to tackle air pollution, will be of benefit to the wider community. The Borough has a dedicated TP co-ordinator who also oversees the School TPs.

Although many of the Council's buildings are situated within easy access to public transport, a survey of a representative proportion of Council employees found that 75% of staff travelled to work by car (4% of those as a passenger) with most employees living within a 5-10 mile radius of their work.

The Council accepts that if its own TP is to be effective, it must not only tackle the car culture, but recognises that the car is an integral, and sometimes essential, part of life within the Borough. The principle aims of the Plan are to:

- To increase the awareness of staff of the advantages and potential for travel by more environmentally friendly modes of transport
- Provide all new staff with a Sustainable Travel Pack. The packs will provide information on accessible alternative forms of transport, such as those detailed below.
- Encourage staff to cycle. The Council already has a number of initiatives to encourage staff to cycle such as secure, covered cycle shelters at the new Civic Offices. It is recognised that further measures to encourage cycling by staff are required; therefore the Council's Cycle Policy is currently under review.
- Promote the link between walking and a healthy lifestyle.
- Encourage travelling by public transport. The Council offers interest free loans to staff to purchase annual season tickets. It is planned to have a dedicated intranet page to inform staff of rail and bus timetables etc.
- Promote the Car Sharing Scheme that is run by Surreyshare.com and can be accessed via the intranet and Internet. All of the local authorities within Surrey are involved in this scheme. There is a database for any employee who wishes to participate. Within that database a potential car share partner may be found.
- Pilot more flexible working arrangements – including hot desking, remote or mobile working and elements of home working.

- Undertake an annual review in order to establish if the plan is working, and set targets for further reduction in solo car dependency.

Relevant actions to this section listed in the Action Plan include: 18,19.

4.12 School Travel Plans

Since 2001 the Council has been working with local schools to find ways of reducing the impact of the school run, which can account for up to 20% of traffic during the morning rush hour. With the introduction of the Central Government's 'School Travel Grants' to maintained schools with approved Travel Plans, Runnymede has secured the involvement of 32 schools in the Travel Plan process.

The council work in partnership with the County Council in their 'Safe Routes to School Initiative'. This scheme aims to reduce car dependency and ensure pupils can make their journeys to school within a benign environment.

Since 2001 32 schools have become involved in the process. The Council is concentrating initial efforts on state schools, as they are eligible for Government grants. However, the Council is committed to assisting all schools to obtain a TP. One private school has a TP in the Borough even though it does not receive a Government grant.

The Council is committed to the reduction of car use for the school run and to find the most sustainable and safest way for pupils, parents and teachers to travel to and from schools in the Borough. It is recognised that to achieve this, positive partnership working will be needed and will include relevant stakeholders such as local residents, council officers and members.

Through the School TPs, the Borough encourages the use of more sustainable modes of transport to reduce congestion, exhaust fumes and additionally promote walking and cycling. The Council run three 'walk to school' campaigns a year and encourage and help organize walking buses. All School TPs must be in place by 2009. Travel awareness campaigns held in the Borough, such as 'Golden Boot Challenge' and 'Walk to School Week', are used to promote the Plans and involve the local community. The continued success of School TPs is dependent on external funding.

Relevant actions to this section listed in the Action Plan include: 20, 21.

5.0 Identification of Non Transport Related Measures

5.1 Development Plans

Government guidance (LAQM. PG 03) stresses the importance of having an AQMA identified in local plans, unitary plans, transports plans and any other local authority plans. Additional NSCA guidance highlights that strategic planning must be “sensitive to the need to improve local air quality along with the wider environment” and that development control should be a tool for “promoting more sustainable travel patterns and hence minimising traffic generation.”

Maintenance and improvement of the environment is an essential part of the Council's overall strategy. There are three primary ways that development can have a significant impact on air quality:

1. The completed development itself may cause deterioration in local air quality e.g. increased emissions from vehicles at the development, energy and heating outputs
2. If the development is located in an area of poor air quality, the occupants will be exposed to the poor air quality
3. The demolition/construction phase may have a significant impact on local air quality e.g. from dust generated on the site, plant and vehicle emissions.

The Council will seek to ensure that all development is well related to the transport infrastructure, which will serve its needs. The Council will actively discourage new development that generates significant numbers of trips at locations poorly served by public transport.

The Council has produced its Borough Local Plan (BLP) Second Alteration and in accordance with the statutory requirements in 2001. This is based on the broad principles of the Surrey Structure Plan and sets out the Council's policies for the control of development in Runnymede, up to 2006.

A major component of the BLP is the general policy controlling pace of development (GEN1) this limits major developments as follows:

Where appropriate, major development proposals will proceed on a phased basis to ensure that any harm to the local economy, to the local environment and to the amenity of local people is minimised. The Council will seek to ensure that growth and development are environmentally sustainable

The Council's BLP developed a number of guiding principles in relation to transport that are consistent with the policies set out by central and regional Government. These principles cover a variety of transport areas:

- More walking and cycling
- Wider public transport patronage
- Support for town centre economies and regeneration
- Reduced environmental impact of travelling, especially by car

- Road traffic and congestion reduced
- Improved air quality

The BLP set out maximum parking standards for new developments in areas well served by public transport. In addition, it set out the requirement for a Transport Assessment and Green Travel Plan for developments likely to generate a large number of journeys.

Equally important to the Council are its green belt policies that are aimed to prevent unrestricted urban sprawl and protect its green areas. These policies indicate a strong presumption against development in the designated green belt areas in the Borough, which include areas adjacent to the M25. A specific policy has been drawn up for the village of Thorpe to protect its character (GB2).

The Local Development Framework (LDF), which is currently being developed and will supersede the BLP in 2007, will encourage the construction of high density mixed use developments in areas which are particularly accessible public transport and the adoption of more sustainable patterns of travel.

The Addlestone, Chertsey and Egham Area Action Plans promotes high-density development adjacent to major transport interchanges, for example it encourages the tallest buildings in the town centre to be located close to the Railway Station. Whilst public consultation revealed that there is significant public sentiment against tall buildings, the Borough is more likely to fulfil its housing targets without having to intensify housing densities in established residential areas.

The Council recognises that building design can have an effect on public exposure to poor air quality and will use planning conditions to implement mitigation measures. New developments in the Borough are required to meet the standards of the Building Research Establishment Environmental Assessment Method (BREEAM). The Council has produced its own Sustainable Construction Supplementary Planning Guidance giving advice on sustainable construction techniques for new developments, which includes techniques to improve air quality internally and externally. Many of these measures will also improve energy efficiency and therefore reduce carbon dioxide emissions.

Council Officers expect developers to use the latest 'best practice' guidance available to preempt and resolve air quality problems. The Council will also use the recently produced London wide Code of Practice for the Control of Dust and Emissions from Construction. This document aims to minimise air pollution arising from large construction projects has been developed by the Air Pollution Planning and the Local Environment a sub-group of the London Air Quality Steering Group, and was formally adopted by the Mayor and Association of London Government in November 2006.

The Council will examine the potential to address air quality issues through the use of Section 106 agreements as outlined in Planning Policy Statement 23, wherever possible.

Planning applications with air quality implications are submitted routinely to Environmental Protection Division for comment and this practice will continue. This is particularly important for any proposed development that is located within the AQMA or that may have an impact on the air quality in the AQMA.

Relevant actions to this section listed in the Action Plan include: 22-26.

5.2 Climate Change

Carbon dioxide does not have a direct impact on human health and is not therefore part of the

government's Air Quality Strategy. However, this air pollutant does have a major impact on climate and therefore can have an indirect impact on human health. Emissions of carbon dioxide should be reduced where possible. Many of the measures in our AQAP and Surrey CC Structure Plan (2004), such as energy efficiency and traffic reduction, should lead to reductions in both air pollution and carbon dioxide emissions.

Also in 2001 the Runnymede Local Strategic Partnership (LSP) was established. From a relatively modest start a strong and sustainable partnership, which is delivering positive outcomes, has been created. In 2003 the Council adopted its first LSP 'Community Strategy' the document sets out a vision on how the Council, working with all key players in the Borough, will seek to improve the quality of life for all residents. Among the aims is the promotion of a positive attitude to the environment and have a cleaner, greener Runnymede. From the LSP core group stem five task groups, including the Environment Task Group set up in 2002; this partnership is leading on Climate Change.

The Environment Task Group brings together over 50 organisations from the public, private, business, community and voluntary sectors to consider the environmental agenda for the Council. This group has its own Action Plan to help the Council meet commitments within the Nottingham Declaration. The Plan identifies ways in which the Council can minimise its own impact on Climate Change as well as inform the public and other organisations about the causes and effects of Climate Change and what they can do about it and how to adapt to it.

The two most significant sources of carbon dioxide emissions in Runnymede are from domestic gas and electricity consumption, in total 63%. This is followed closely by road transport at 23%. The road traffic measures within the AQAP will assist in reducing carbon dioxide contribution from road transport.

Electricity from renewable sources is currently being purchased through green tariffs and represents about 100% of electricity consumption in all Council buildings and street lighting. These are helping to stimulate the market for renewable energy and contribute to the Government's objective of achieving 10% of electricity from renewable sources by 2010 as part of the UK Climate Change Programme. In addition, measures to increase energy efficiency and the use of renewable energy sources will result in lower overall emissions of NO₂ and PM10 from fossil fuel power plants.

Relevant actions to this section listed in the Action Plan include: 27, 28.

5.3 Domestic Energy Efficiency

The Home Energy Conservation Act 1995 (HECA) placed a duty on local authorities to improve energy in all Council housing stock by 30% by 2010. The Council has an affordable warmth/fuel poverty strategy and has continued to implement policies to meet the requirements of the HECA. Changes in the energy efficiency of the housing stock in the Borough are carefully monitored. As of 31st March 2007 there had been an overall energy efficiency improvement of 32.49 % in the Borough since the implementation of HECA in April 1996. If all of the measures identified in the Council's strategy come to fruition over the next 14 years, it is estimated that there will be a reduction in carbon dioxide of 61,647 tonnes per annum.

The Council sits on the Runnymede Energy Efficiency Partnership (REEP) which represents more than 30 partners from charitable and community organizations. These include the Energy Action Grants Agency (EAGA), South East Energy Advice Centre, front line health staff, voluntary organizations, housing associations and local as well as national suppliers. The aim is to forge partnerships between suppliers, installers and statutory agencies in order to ensure

energy efficiency measures are available as economically possible for all sectors of the community. It provides advice to all members of the public.

One of the most recent initiatives is the Runnymede Free Insulation scheme with Energy Efficiency Commitment Scheme funding offering free loft and/or cavity wall insulation to private sector residents over the age of 60 or families with young children not eligible for governments Warm Front Grant but with a reduced household income. To date 98 households have benefited from free insulation measures. With additional EEC Funding applications we hope to continue this scheme through 2007 and 2008. A consequence of improving energy efficiency is that emissions from the burning of fossil fuels, including both NO_x and PM₁₀ can be reduced in the Borough.

REEP publish a biannual newsletter on the Runnymede website. This updates the local community on grants and funds available as well as widening the awareness of issues and problems associated with energy efficiency and fuel poverty.

Building Control

Building Control can contribute to the development of policies for air quality improvement through the promotion of emission – reducing technologies in new developments and buildings. Runnymede Borough Council Building Control Section has policies in place to improve energy efficiency in buildings, as described below.

Under the Building Act 1984, the Building Regulations (1991 and 2000) give the Local Authorities statutory duties to ensure that the new building works within the Borough meet the technical standards in relation to health and safety, welfare and energy conservation. The legislation sets out substantive requirements and technical guidance to achieve minimum standards. This technical guidance is contained in Approved Documents giving general as well as practical guidance about some ways of meeting the requirements of the Regulations. Approved Document L, “Conservation of Fuel and Power” requires reasonable provision to be made for the conservation of fuel and power in buildings.

Relevant actions to this section listed in the Action Plan include: 28.

5.4 Raising Public Awareness

For the Action Plan to be successfully implemented, raising awareness and improved dissemination of information on air quality issues are fundamental. This is planned through:

- Continued development of the Council’s website to incorporate air quality information
- Information to the public through articles in the local newspaper
- Information to schools and organisations
- Advice to businesses on travel plans
- Promotion of alternative transport modes such as walking and cycling
- Promotion of alternative fuels

The Council’s website will contain a dedicated section for the provision of air quality information to the public in early 2008. It will contain general air quality information, together with links to up-to-date monitoring data and other websites, driving tips to reduce emissions and car use as well as downloadable copies of key Council air quality documents. The content of the site will be reviewed regularly and updated as new information becomes available.

Relevant actions to this section listed in the Action Plan include: 29.

5.5 Environmental Procurement Policy

The Council's Environmental Policy Statement an Environmental Policy in 2000 includes a purchasing policy:

To favour purchase of environmentally friendly products and use of services with a minimal environmental impact, so long as requirements of value for money and quality are met, and encourage suppliers to pursue responsible environmental practices.

See Appendix 4 for further details regarding the purchasing policy

5.6 Industrial Emissions

Although road transport accounts for the greater part of the emissions of both Nitrogen Dioxide and Particulate pollution in Runnymede, the Stage 4 Review and Assessment identified other sources as contributory factors to air quality and therefore should be considered in this process.

The Environmental Protection Act 1990 introduced a system of Local Air Pollution Control (LAPC) and Integrated Pollution Control (IPC). Both systems regulated air pollution from industrial sources, the former controlling small/medium size operators and administered by the Council (Part Bs) and the latter dealing with larger operators and administered by the Environment Agency (Part As).

In order to prevent or minimize pollution, the site operators are required to apply the 'Best Available Techniques Not Entailing Excessive Cost (BATNEEC). More recently, as a result of European Legislation, the Pollution Prevention and Control Act 1999 set out the Integrated Pollution Prevention and Control (IPPC) regime. The principals are essentially the same but the respective regimes are now called Local Air Pollution Prevention and Control (LAPPC) and Integrated Pollution Prevention and Control (IPPC). Under this new system local authorities are the regulators for Part A2s as well as Part Bs and the Environment Agency, Part A1s. Under the new regime site operators apply 'Best Available Technique' (BAT) instead of BATNEEC.

The Borough currently has no Part A2's and 31 Part B installations, comprising:

- 2 Cement Mortar Batching plant
- 4 Vehicle Respraying installations
- 5 Mobile Crushers
- 7 Dry Cleaners
- 13 Petrol stations

A list of these installations can be found on the Council's public register (which is kept by the Council at the Civic offices). The Council will continue to work closely with existing authorised or permitted installations to ensure compliance with conditions set by the Council in accordance with legislation. The Council has undertaken benchmarking with neighbouring authorities to ensure best practice and is a member of the Surrey PPC group dedicated to authorised /permitted processes. The Borough also has a programme for identifying processes, which should be part of the regulatory regime.

Other industrial premises are controlled by nuisance powers under the Environmental Protection Act 1990 and the prohibition of dark smoke from industrial or trade premises under the Clean Air Act 1993. The latter legislation makes it an offence to burn any material that is likely to produce dark smoke. Under this Act the Council can take action after a fire has extinguished if there is evidence of material on the fire, such as plastics and rubber, which may have given rise to dark smoke. This is particularly useful where unscrupulous individuals/ businesses burn waste at night, hoping to avoid detection.

Relevant actions to this section listed in the Action Plan include: 30-32.

6.0 Impact Assessment and Options Appraisal

6.1 Introduction

The Runnymede AQAP has been developed with the assistance of many bodies outside the Council, as well as different Service Areas within the Council. As a result the identification of the different parties is implicit, since no one Service Area can implement all the actions outlined. The actions included are mostly outlined within the Council's budget priorities, which as outlined, are assessed each year for fit within its Vision.

6.2 Impact Assessment

The Council's AQAP has also considered that there are wider impacts to the measures proposed, since it is clear that many of the actions do have other non-air quality impacts. These considerations were considered when the action plan was formulated. Additional benefits and shortfalls of air quality improvement measures were assessed in terms of:

1. *Other (non-Nox/ PM10) air pollutants* – those measures aimed at reducing emissions of Nox and PM10 from combustion sources through direct and indirect measures will in many instances lead to reductions in greenhouse and toxic gases.
2. *Noise* – road transport sources as well being emission sources are also significant sources of noise. The replacement of older vehicles by newer vehicle as in actions will have noise reduction benefits, as will those measures to improve streetscapes.
3. *Congestion* – measures to increase car sharing and use of cycles will remove vehicles from the road in the short term and thereby relieve congestion. If however congestion is relieved there is a potential for increasing traffic speeds with potential impacts being increased noise and emissions.
4. *Attractiveness of public transport* – this is an important consideration since any increase in public transport must be accompanied by improved attractiveness of stock and infrastructure, including public safety issues.
5. *Social inclusion* – this relates to access to buses, as well as other issues relating regeneration and reduced car parking.
6. *Economic vitality of local businesses* – this is a consideration of many of the planning and transport planning related actions
7. *Other*– many of the actions proposed relate directly to Council only based actions. This provides an important signal to others in the Borough that the Council is leading on initiatives to improve air quality, including promoting and educating good practice.

6.3 Implementation

In line with the different service areas and bodies that have helped develop this AQAP, key Service Areas have been identified. These are indicated in the Table 4 & outlined Table 2.

Table 2: Who is responsible for AQAP actions

RBC	Environmental Protection
SCC	Surrey County Council
HA	Highways Agency
LA	Local Authorities
PO	Private Operators
SP	Surrey Police

7.0 Cost Effectiveness

7.1 Introduction

The purpose of assessing the cost effectiveness is to enable the actions to be prioritised in order to determine which of the actions are to be implemented and in what order.

The Runnymede AQAP, however in line with the government's guidance, does not provide a full cost benefit analysis of the plan, with detailed costs of all the measures considered as well as the likely benefits that would arise. Since this would entail a detailed study of air pollution reduction costs e.g. the costs of improving air quality by 1 µg m⁻³ in the Borough, as well as that of the health benefit costs associated with air quality improvements. This is considered beyond the scope of the action plans.

7.2 Categories

The value of assessing the cost effectiveness of the actions is limited for a number of reasons. For example, the Council and its partners were carrying many of the actions described in this plan out prior to formulation. Furthermore, other actions included in the action plan are statutory duties of the Council and therefore must be carried out regardless of the cost.

There is no accepted means for assessing the cost effectiveness of actions. A quantitative assessment is almost impossible to achieve given the difficulty in obtaining accurate costs and accurate measures of air quality impacts. For these reasons, a quantitative method of prioritization has been used using professional judgement. It should also be noted that the costs are costs of the action and therefore are not for the Council only.

Table 3: Cost Rating description

Cost Banding	£	Description
Low (1)	< 50K	Cost is covered by existing budget or by fees from polluter
Medium (2)	50-200K	Additional funding is required, but may be incorporated with forward planning.
High (3)	>200K	Additional funding is required that cannot be incorporated into existing budget

These ratings are used to determine the cost/impact shown in the AQAP table (see Table 5). The existing Council budgets are able to meet the costs of most of the actions defined within the low cost rating definition. Those actions categorized as medium or high require additional funding.

Table 4: Air Quality Impact rating descriptions

Air Quality Rating	Definition
Low (1)	Impact is small and localised. Will be beneficial as part of a wider measure (typically less than $0.2 \mu\text{g m}^{-3}$)*
Medium (2)	Impact on improving air quality is considered important, and benefits from the action(s) are considered important with benefits clearly seen (typically 0.2 to $1 \mu\text{g m}^{-3}$)
High (3)	The impact on air quality improvement is considered significant and the actions(s) are seen as the core (typically more than $1 \mu\text{g m}^{-3}$)

(* Note – to understand what the measures will achieve in quantitative air quality terms is very difficult; hence a subjective approach has been used. It should also be noted that these impacts are considered for guidance purposes only and are not necessarily Borough wide. This means that the improvements are not cumulative.)

The actions described in this AQAP will have a greater chance of success where there is public support and where they strike a balance between environmental and other objectives such as improvements in human health, noise, safety etc. The achievement of air quality objectives must therefore not be considered in isolation, although the definition of 'cost' in this AQAP is not intended to encompass additional effects.

8.0 Proposed Actions

The actions set out in Table 5 of this Plan will be reviewed and assessed twelve months after the Council has adopted this final version of the AQAP.

Key to Table 5

Timescale

S – Short Term (0 – 2 years)

M – Medium Term (2 – 5 years)

L – Long Term (5 + years)

Table 5 Air Quality Action Plan Proposals

Part I Actions – Air Quality Management

	Action	Who	When	Cost	Air Quality Impact	Practicality	Acceptability
1	The Council will continue to monitor air quality in the Borough through the use NO ₂ diffusion tubes and work with the Highways Agency in monitoring within the AQMA	RBC	Ongoing	1	1	3	3
2	The Council will carry out research on dispersal of NO ₂ using passive monitoring tubes in appropriate locations	RBC	Ongoing	1	1	3	3
3	As the LEZ is to be implemented the Council will inform local transport operators of relevant developments and funding opportunities for fleet improvements.	RBC	S	1	1	3	3

Part II Actions – Transport Related Measures

Action	Who	When	Cost	Air Quality Impact	Practicality	Acceptability
4 To press for, and co-operate with Government/Surrey County Council, over implementation of improvements on the M25	RBC/Govt/ SCC	M- L	3	1 – 2	3	3
Options						
Speed restriction and enforcement						
Fixed	HA/SP	M – L	3	2 – 3	3	1
Variable	HA/SP	L	2-3	1 – 2	2	1-2
Enhanced screening	HA	S	1	2	3	2
Information / advisory signs	HA	M	2	1	2	3
5 Provide help, encouragement and awareness raising to road freight groups within the Borough, concerning funding for cleaner vehicles.	RBC/SCC	Ongoing	1	2	3	2
6 The Council's Parking Management Plan will help regulate traffic volumes and may encourage a shift from private vehicle use to more sustainable modes of transport	RBC/SCC	Ongoing	2	2	3	2
7 Develop and implement a range of traffic management and calming measures to regulate through traffic and to protect residential areas from incoming traffic, particularly commercial traffic.	SCC/RBC	Ongoing	1	3	2	3
8 To support traffic reduction through improved infrastructure	SCC	M – L	2	2 – 3	3	2 – 3
9 Continue road resurfacing during off-peak times using a one stage resurfacing material	SCC	Ongoing	1	2	3	3
10 The Council will support and encourage the improvement of public transport including new transport links, bus priority schemes, improved interchanges and access for the disabled.	PO/SCC	S – L	2– 3	2 – 3	3	2 – 3
11 Improve, extend and develop new cycle routes	SCC/RBC	S – L	1 – 2	1 – 2	3	3
12 To secure the provision of new cycle shelters at schools.	RBC/SCC	S – M	1 – 2	1 – 2	3	3

		Who	When	Cost	Air Quality Impact	Practicality	Acceptability
13	To encourage walking the Council will improve paving, lighting, street furniture and security.	SCC/RBC	Ongoing	3	1	2	2
14	Work with the Surrey CC to complete and promote Walking Routes within Runnymede.	SCC/RBC	Ongoing	2	1	3	3
15	Ensure that the Council vehicles are: • Encourages wider good practice <ul style="list-style-type: none"> used sensibly (via staff training) and are well maintained not left idling unnecessarily used on routes and tasks which are worked out to be as efficient as possible by coordinating deliveries of goods and services operated by appropriately trained staff who utilise practices which improve fuel economy 	RBC	Ongoing	1	1	2	3
16	The Council will investigate grants available for assistance with greening its fleet	RBC	S-L	1	2	2	3
17	The Council will investigate how to bring its fleet up to the Euro standard as required by the LEZ either through using alternative fuels or contracting out some of its fleet vehicles and having a green contract policy	RBC	S – L	1 – 2	1	3	3
18	The Council will continue to develop its own Travel Plan, and promote Travel Plans to other organizations	SCC/RBC	Ongoing	1 – 2	1 – 2	3	3
19	To continue to support and promote the Surrey Carshare scheme	SCC/RBC	S – L	1 – 2	1 – 2	3	3
20	The Council will continue to engage schools in the School Travel Plan initiative with the aim that all schools have a TP in place by 2009.	SCC/RBC	S – L	1 – 2	1 – 2	3	3
21	Raise awareness through campaigns such as 'Good Going Week', Walk to School Week, and Golden Boot Challenge	RBC/SCC	Ongoing	1	2	3	3

Part III – Non Transport Related Measures

		Who	When	Cost	Air Quality Impact	Practicality	Acceptability
22	Ensure air quality is given material consideration in assessment of proposals for development as stated in guidance PPS 23	RBC/SCC	Ongoing	1	3	3	2-3
23	Actively discourage new development that generates significant numbers of trips at locations poorly served by public transport.	RBC	Ongoing	1	3	3	2-3
24	Investigate using Section 106 planning obligations to address air quality issues	RBC	Ongoing	1	2	3	2-3
25	Ensure the latest Codes of Practice and 'best practice' are followed by property developers	RBC	Ongoing	3	2	2	2-3
Action							
26	To improve the availability of cleaner fuels by encouraging new service stations to stock alternative fuels e.g. LPG,	RBC	S – L	1	1 – 2	3	3
27	To consider the development of renewable energy projects as part of the Council's next Local Plan review	RBC	S – M	1	1	3	3
28	To minimise energy use in the Council's buildings and promote energy conservation throughout the Borough	RBC	S – L	1	1	3	3
29	To promote travel awareness and air quality issues e.g development of a dedicated air quality site on the Council's website	RBC/SCC	S – M	1	1 – 2	3	1 – 2
30	Enforcement of statutory nuisance controls in relation to EPA 1990 and the Clean Air Act 1993	RBC	Ongoing	1	1	3	3
31	To ensure that only authorised fuels are used in the smoke control area.	RBC	Ongoing	1	1	3	3
32	Continue to apply the Environmental Protection Act regime and the new integrated Pollution Prevention Control regime in accordance with the timetable for implementation.	RBC	Ongoing	1	1	3	3

9.0 Consultation

9.1 Introduction

The Runnymede AQAP is intended to be an evolving plan that will further develop in time, and a result will be the subject on going consultation by stakeholders and others.

9.2 Consultation Process

The Environment Act 1995 also requires the Council to undertake extensive consultation at each stage of the process, thus creating an iterative method of action. Initial consultation was limited to the Council's internal Service Areas for feedback and Department for the Environment, Food and Rural Affairs (DEFRA). This consultation with DEFRA was to ensure that the Councils air quality policies and actions are consistent with its government requirements and guidance. This initial draft plan was first amended in line with the comments received.

The Council has also previously consulted with the Secretary of State, Environment Agency, Highways Agency, Surrey County Council and other neighbouring local authorities. In addition to the statutory authorities the following relevant stakeholders were also consulted:

- Residents in the AQMA
- The local Members of Parliament
- The Parish Councils in the AQMA
- Primary Care Trust
- Surrey Police

9.3 Stakeholder Engagement

For many years the Council has worked closely with other local authorities as part of the Surrey Air Quality Group. This group includes representatives from the Local Authorities, Surrey County Council and the Environment Agency. Further consultation will always include other statutory bodies including neighbouring local authorities and the NHS bodies.

In addition many of the actions in the AQAP have already been the subject of separate intensive consultation, e.g. that relating to the Council's planning and transport policy and processes. We also regularly meet with local voluntary groups and the Runnymede Strategic Partnership. This stakeholder engagement will continue throughout the life of the AQAP.

9.4 Council Decision Making Process

The Vision for Runnymede has already been outlined and this underlines the Council's commitment to sustainable development in the Borough. This AQAP will be the subject of Council approval through its Cabinet. Regular progress reports will be issued through the Council's standard reporting mechanisms outlining and updating AQAP progress.

10.0 References

Air Quality Action Plans: Interim Guidance for Local Authorities. National Society for Clean Air and Environmental Protection, 2000.

Air Quality: Planning for Action. National Society for Clean Air and Environmental Protection, 2001.

Consultation for Local Air Quality Management: the how to guide. National Society for Clean Air and Environmental Protection, 1999.

The Air Quality Strategy for England, Scotland, Wales and Northern Ireland, Department for Environment, Food and Rural Affairs, 2007

The Air Quality Strategy for England, Scotland, Wales and Northern Ireland: Working Together for Clean Air. Department of the Environment, Transport and the Regions, 2000.

The Air Quality Strategy for England, Scotland, Wales and Northern Ireland: Addendum. Defra, 2003.

Consultation for Local Air Quality Management: the how to guide, National Society for Clean Air and Environmental Protection, 1999.

Local Air Quality Management Guidance Notes: Framework for Review and Assessment of Air Quality, LAQM.G1(00). Department of the Environment Transport and the Regions, 2000.

Local Air Quality Management Guidance Notes: Developing Local Air Quality Action Plans and Strategies: The Main Considerations, LAQM.G2(00). Department of the Environment Transport and the Regions, 2000.

Local Air Quality Management Guidance Notes: Air Quality and Transport, LAQM.G3(00). Department of the Environment Transport and the Regions, 2000.

Local Air Quality Management Guidance Notes: Air Quality and Land Use Planning, LAQM.G4(00). Department of the Environment Transport and the Regions, 2000.

Local Air Quality Management: Policy Guidance LAQM. PG(03). Defra 2003.

Local Air Quality Management: Technical Guidance LAQM. TG(03). Defra 2003.

A Community Strategy for Runnymede, Runnymede Borough Council, 2002

Strategic Plan 2005-2010, Runnymede Borough Council, 2005

The Surrey Local Transport Plan: Delivery Report 2001-2006, Surrey County Council, 2006

The Surrey Local Transport Plan: Second edition 2006/7- 2010/11, Surrey County Council, 2006

Surrey Structure Plan 2004, Surrey County Council, 2005

The Role of the Highways Agency in Local Air Quality Management, Highways Agency, 2003

Appendix 1: Air Quality Standards

Table 6: Objectives included in the Air Quality Regulations 2000 and (Amendment) Regulations 2002 for the purpose of Local Air Quality Management and Air Quality Strategy Addendum (2003))

Pollutant	Air Quality Objective		Date to be achieved by
	Concentration	Measured as	
Benzene	16.25 $\mu\text{g m}^{-3}$	Running Annual Mean	31.12.2003
	5.00 $\mu\text{g/m}^{-3}$	Annual Mean	31.12.2010
1, 3 Butadiene	2.25 $\mu\text{g/m}^{-3}$	Running Annual Mean	31.12.2003
Carbon Monoxide	10 mg/m^{-3}	Daily maximum running 8 hour mean	31.12.2003
Lead	0.5 $\mu\text{g/m}^{-3}$	Annual Mean	31.12.2003
	0.25 $\mu\text{g/m}^{-3}$	Annual Mean	31.12.2008
Nitrogen Dioxide	200 $\mu\text{g m}^{-3}$ not to be exceeded more than 18 times a year	1 hour Mean	31.12.2005
	40 $\mu\text{g m}^{-3}$	Annual Mean	31.12.2004
Particles (PM10)	50 $\mu\text{g m}^{-3}$ not to be exceeded more than 35 times a year	24 hour mean	31.12.2004
	40 $\mu\text{g m}^{-3}$	Annual Mean	31.12.2004
	50 $\mu\text{g m}^{-3}$ not to be exceeded more than 7 times a year	24 hour mean	31.12.2010
	20 $\mu\text{g m}^{-3}$	Annual Mean	31.12.2010
Sulphur Dioxide	350 $\mu\text{g m}^{-3}$ not to be exceeded more than 24 times a year	1 hour Mean	31.12.2004
	125 $\mu\text{g m}^{-3}$ not to be exceeded more than 3 times a year	24 hour Mean	31.12.2004
	266 $\mu\text{g m}^{-3}$ not to be exceeded more than 35 times a year	15 min Mean	31.12.2005

Carbon monoxide (CO) is a colourless and odourless gas produced by the burning of fuels. Exposure to CO leads to a decreased uptake of oxygen by the lungs and can lead to a range of symptoms as the concentration increases. Early symptoms of exposure include tiredness, drowsiness, headache, pains in the chest and sometimes stomach upsets. Some people, for example those with heart disease, are at an increased risk. Exposure to very high concentrations will lead to death. However such conditions, where there are very high concentrations, are most likely to arise in confined spaces, rather than outdoors where the public are exposed and the air quality strategy (AQS) applies.

Benzene at normal ambient temperatures occurs as a liquid, but it readily evaporates and small amounts are detectable in the air. It is known from workplace studies that benzene is potentially carcinogenic, that is, exposure to it may lead to the development of cancer. EPAQS (1994) considered that the risks associated with the levels found in the air in the UK to be small and not be measurable with any accuracy. Nevertheless, it considered that efforts continue to be made to reduce the levels even further as a precautionary measure.

1,3 Butadiene arises from the combustion of petroleum products and its manufacture and use in the chemical industry. It is not present in petrol but is formed as a by-product of combustion.

Lead in particulate form in air can be inhaled directly by people, and ingested indirectly following its deposition on soil and crops. Exposure to lead has been known to be harmful to people for many years, with severe adverse effects on the blood, the nervous system and the kidneys (although these effects only occur with high exposures). More subtle effects caused by lower exposure to lead can also arise, such as may occur from the presence of lead in drinking water, paint and dust, and in the ambient air. These effects include the impaired intellectual development of children. EPAQS concluded that the available evidence suggests that the risks associated with the levels found in the air in the UK are very small and cannot be measured with any accuracy (EPAQS, 1998). However, efforts to reduce the levels even further continue as a precautionary measure.

Nitrogen dioxide (NO₂) and nitric oxide (NO) are both oxides of nitrogen, and are collectively referred to as nitrogen oxides (NO_x). All combustion processes produce NO_x emissions, largely in the form of nitric oxide, which is then converted to nitrogen dioxide, mainly as a result of reaction with ozone in the atmosphere. It is nitrogen dioxide that is associated with adverse effects upon human health. At high concentrations NO₂ causes inflammation of the lung. Longterm exposure is also considered to affect lung function and exposure to NO₂ is particularly important for people with asthma and related diseases. NO_x is also important in the formation of ozone and secondary particle formation.

Sulphur dioxide (SO₂) is a colourless gas, produced from burning fossil fuels like coal and oil. Power stations and oil refineries are the main sources in the UK, with small releases from other industries. SO₂ is also found naturally in the air at low concentrations from natural releases such as volcanoes and forest fires. SO₂ also has role in the formation of secondary particles. SO₂ can cause breathing difficulties at high concentrations over short periods of time, particularly to those with asthma and chronic lung disease. As a result the AQS objectives are all incident based.

PM₁₀ (particles measuring 10µm or less aerodynamic diameter) represent those particles likely to be inhaled by humans, accepting that the chemical and physical composition varies widely. In view of this there is a wide range of emission sources that contribute to PM₁₀ concentrations in the UK. Research studies have confirmed that these sources can be divided into 3 main categories (APEG):

- i. Primary particle emissions derived directly from combustion sources, including road traffic, power generation, industrial processes etc.
- ii. Secondary particles formed by chemical reactions in the atmosphere, comprising principally of sulphates and nitrates.
- iii. Coarse particles comprising emissions from a wide range of sources, including re-suspended dusts from road traffic, construction works, mineral extraction processes, wind-blown dusts and soils, sea salt and biological particles.

Particles are associated with a range of health effects, including effects on respiratory and cardiovascular systems, asthma and mortality. As a result, EPAQS recommended a daily standard based on the evidence reviewed with an annual mean standard to assist with policy formation.

A subgroup of the Committee on the Medical Effects of Air Pollutants (COMEAP) is currently preparing a report which will, as far as possible, quantify the benefits to health of reducing air pollution in the UK. This group have previously advised that there is strengthening evidence base that links long-term exposure to particles and mortality and are of the view that the associations reported are likely to represent causal relationships with air pollution. They are also investigating the effects on morbidity and aim to publish a detailed report.

Appendix 2: Predicted annual mean NO₂ and PM₁₀ results for Runnymede BC

Figure 7 Annual Mean Nitrogen Dioxide ($\mu\text{g}/\text{m}^3$) for M25 near Egham predicted in 2005 (based on 1999 meteorology)

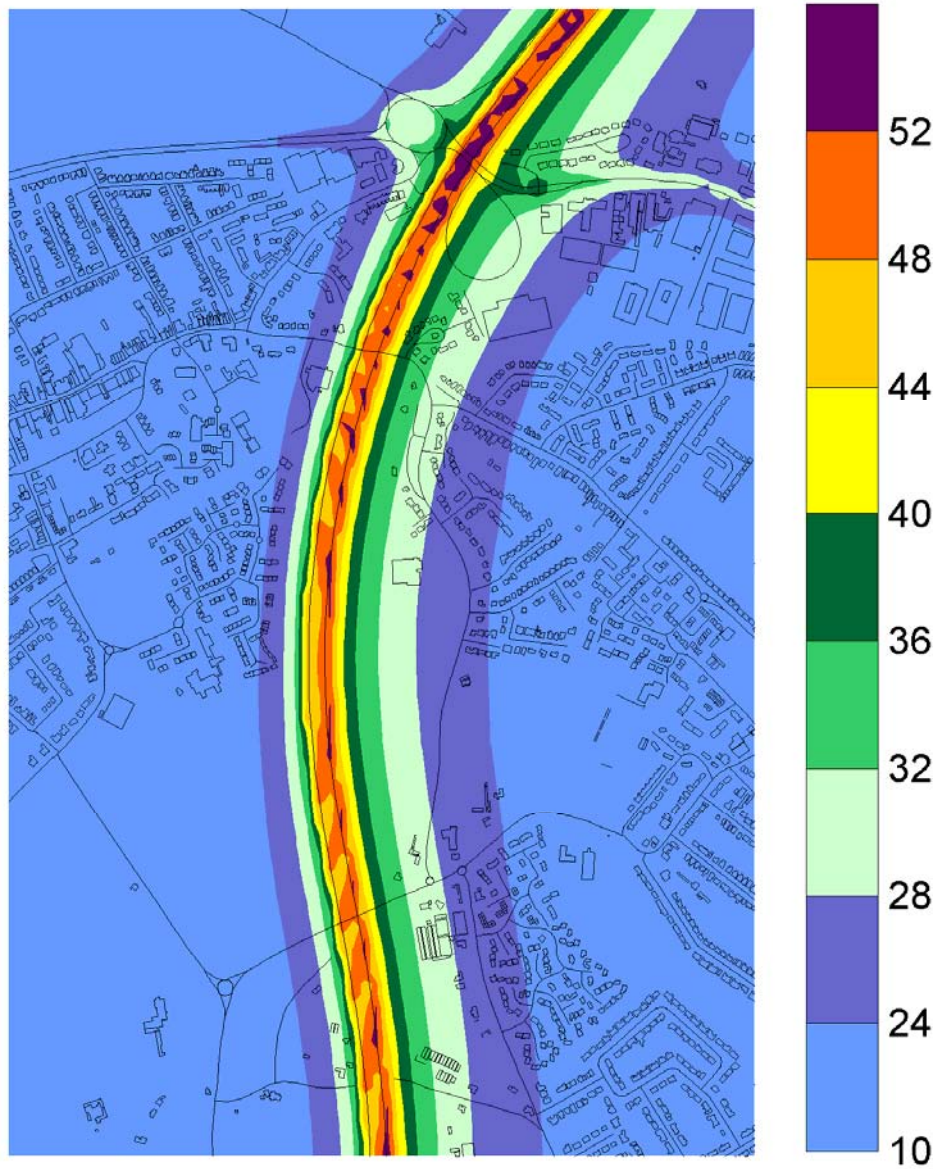


Figure 8 Number of days with daily mean $PM_{10} > 50(\mu g/m^3)$ for M25 near Egham predicted in 2004 (based on 1996 meteorology)

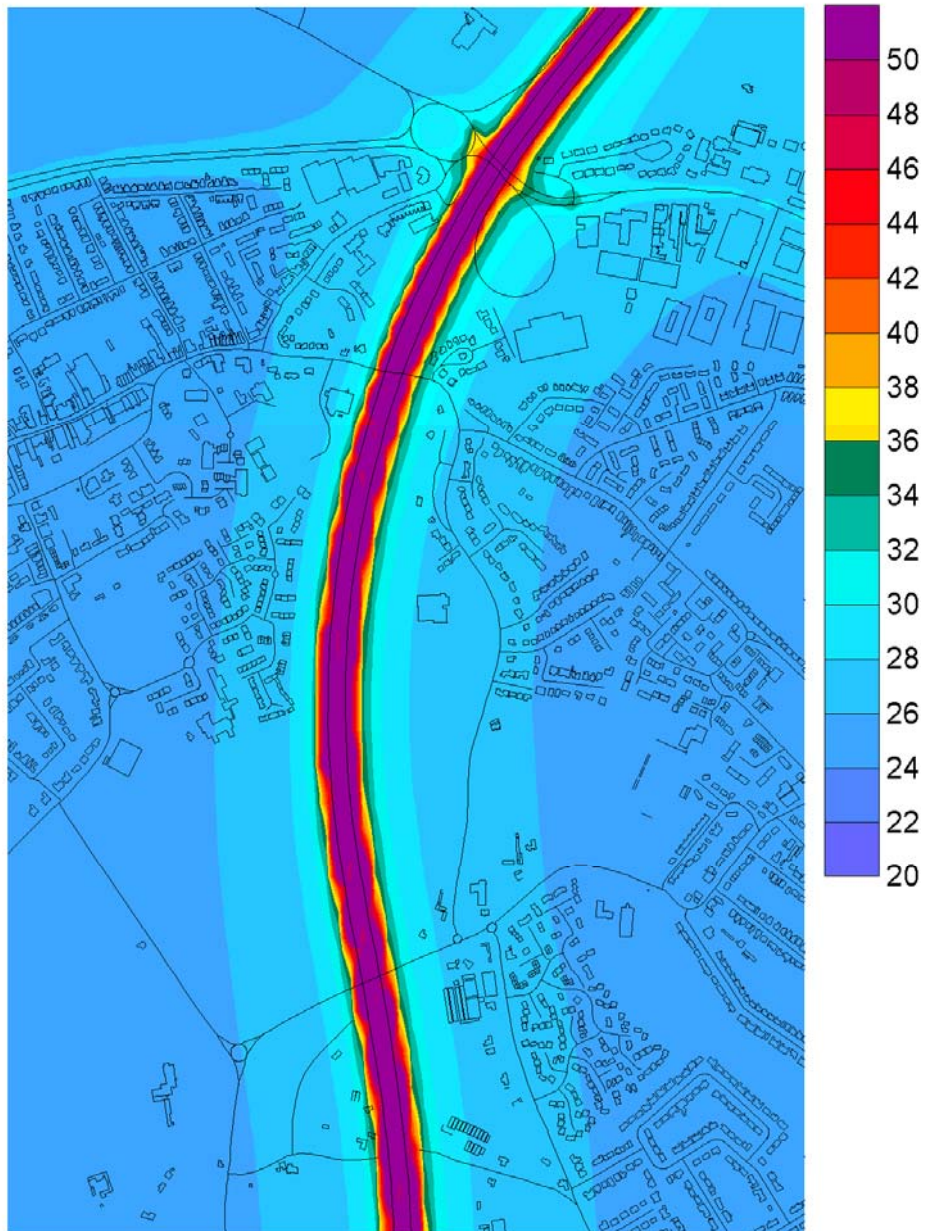


Figure 9 Annual mean Nitrogen Dioxide ($\mu\text{g}/\text{m}^3$) for M25 near J12 predicted in 2005 (based on 1999 meteorology)

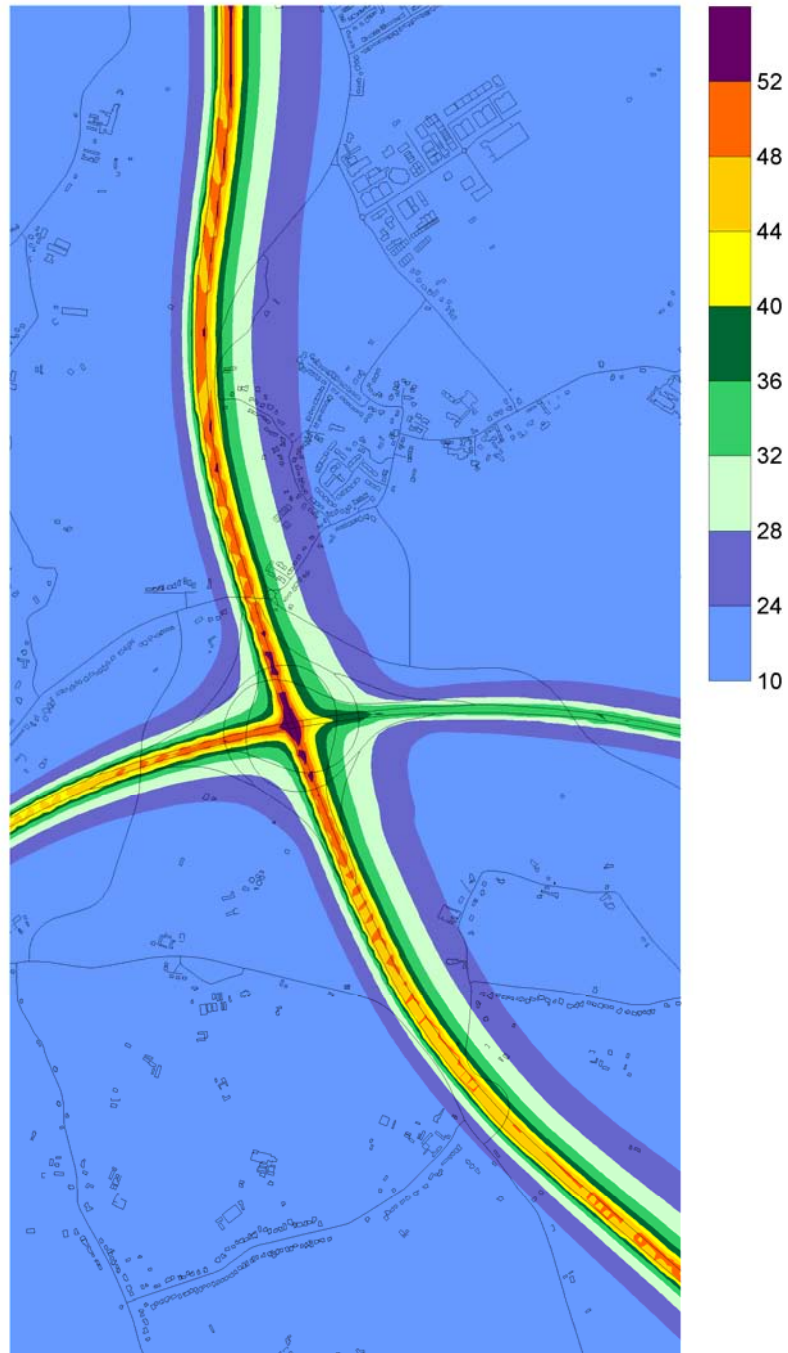


Figure 10 Number of days with daily mean $PM_{10} > 50(\mu g/m^3)$ for M25 near J12 predicted in 2004 (based on 19696 met.)

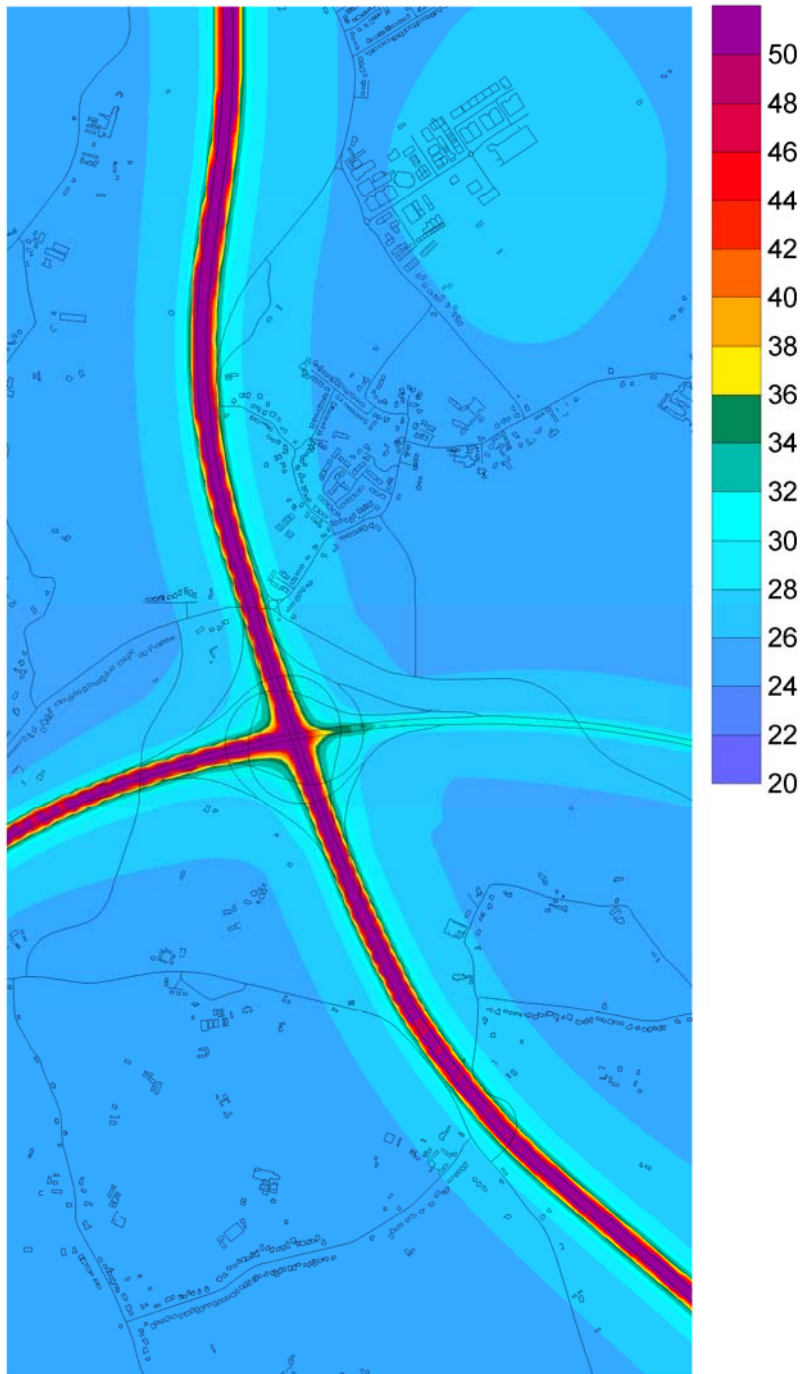


Figure 11 Annual mean Nitrogen Dioxide ($\mu\text{g}/\text{m}^3$) for M25 near Addlestone predicted in 2005 (based on 1999 meteorology)

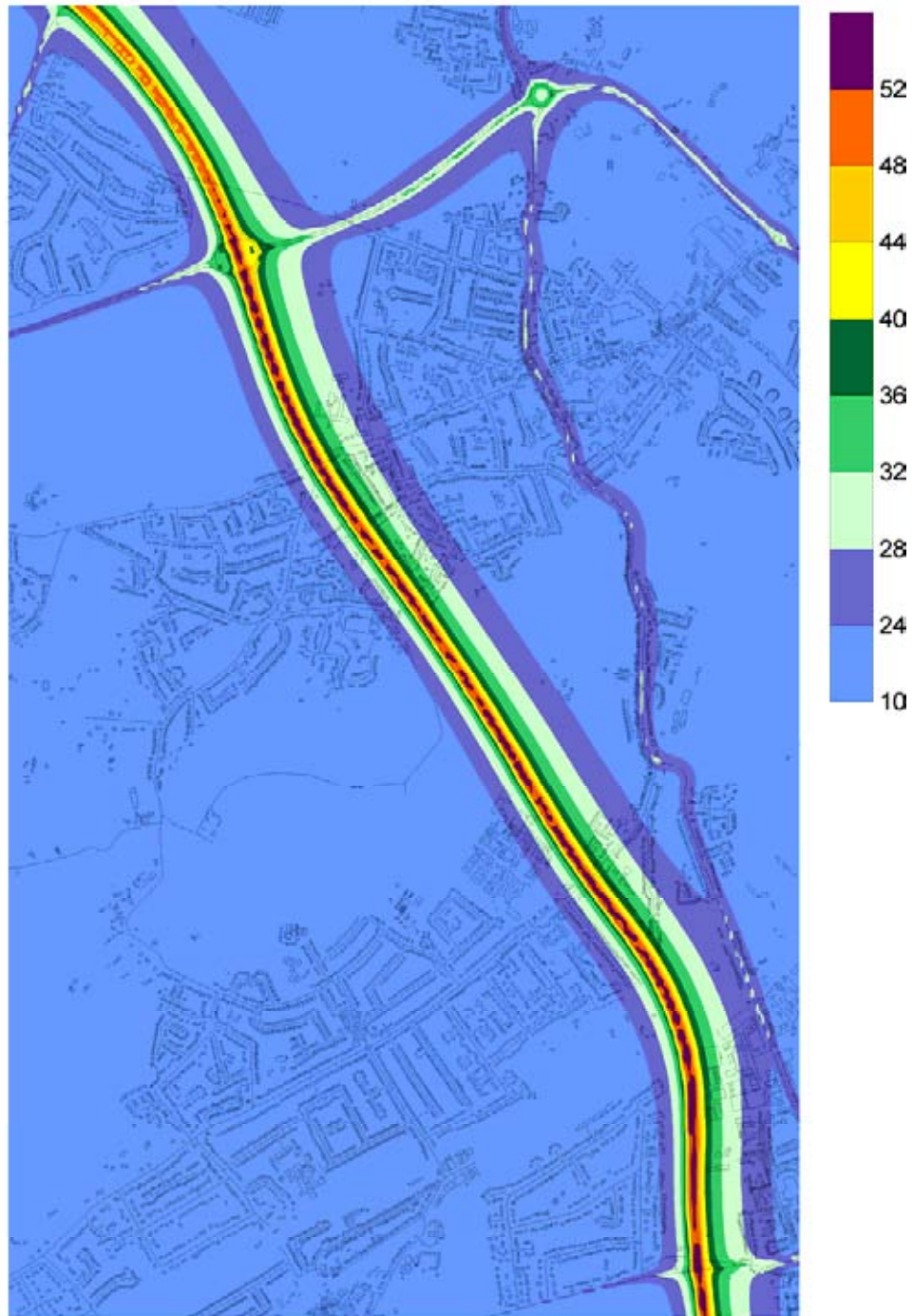


Figure 12 Number of days with daily mean $PM_{10} > 50(\mu g/m^3)$ for M25 near Addlestone predicted in 2004 (based on 1996 met.)

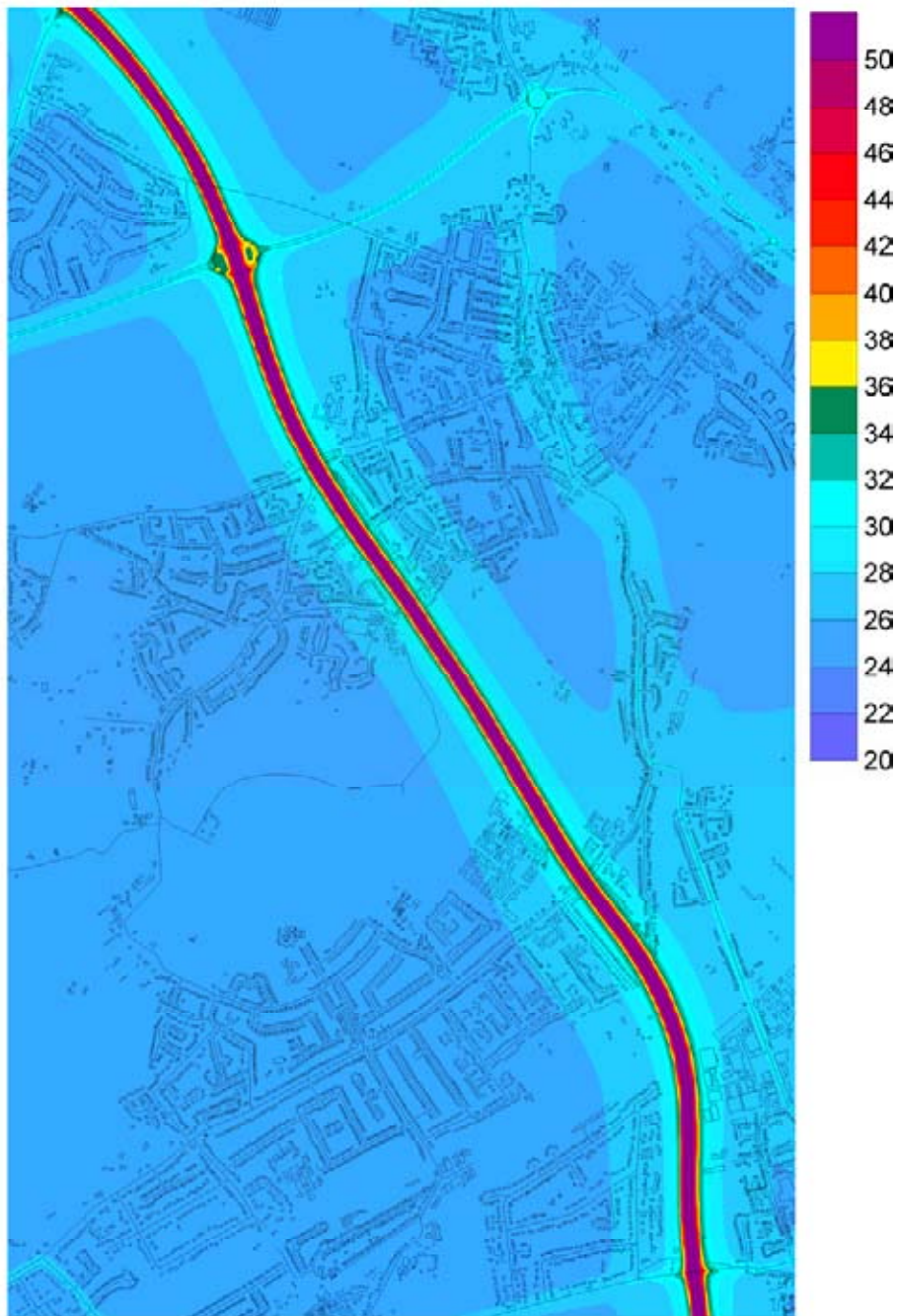


Figure 13 Detailed view of 2005 annual mean nitrogen dioxide ($\mu\text{g}/\text{m}^3$) prediction of M25 at Addlestone (using 1999 meteorology)

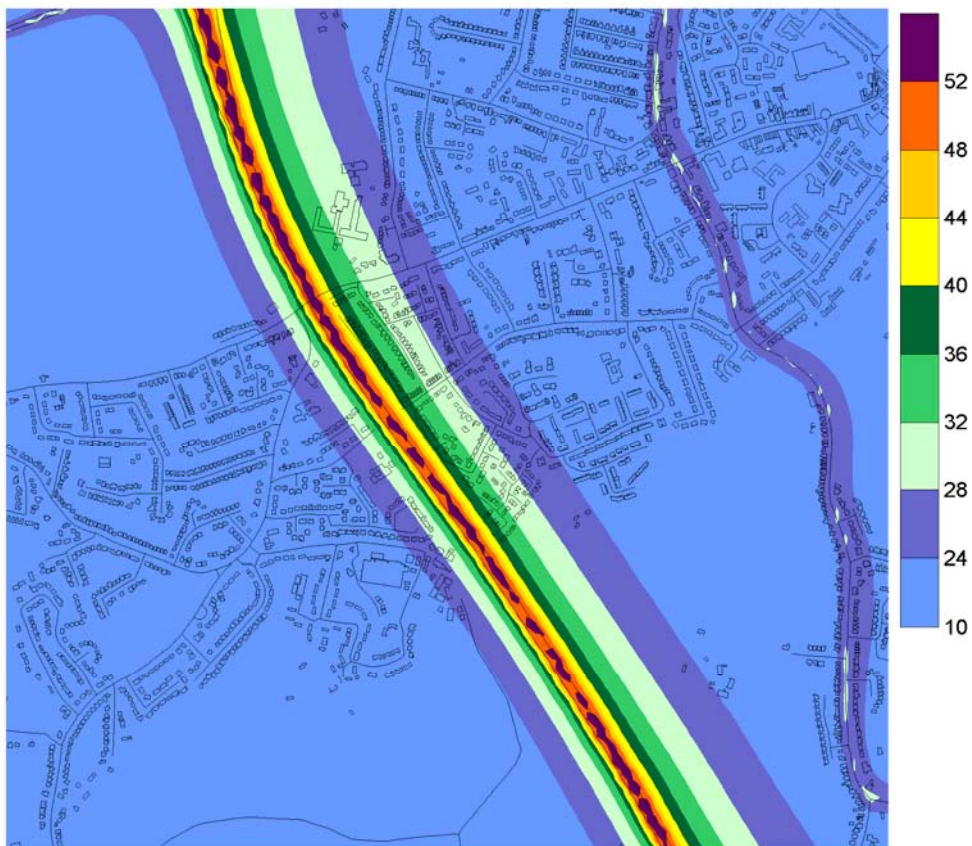
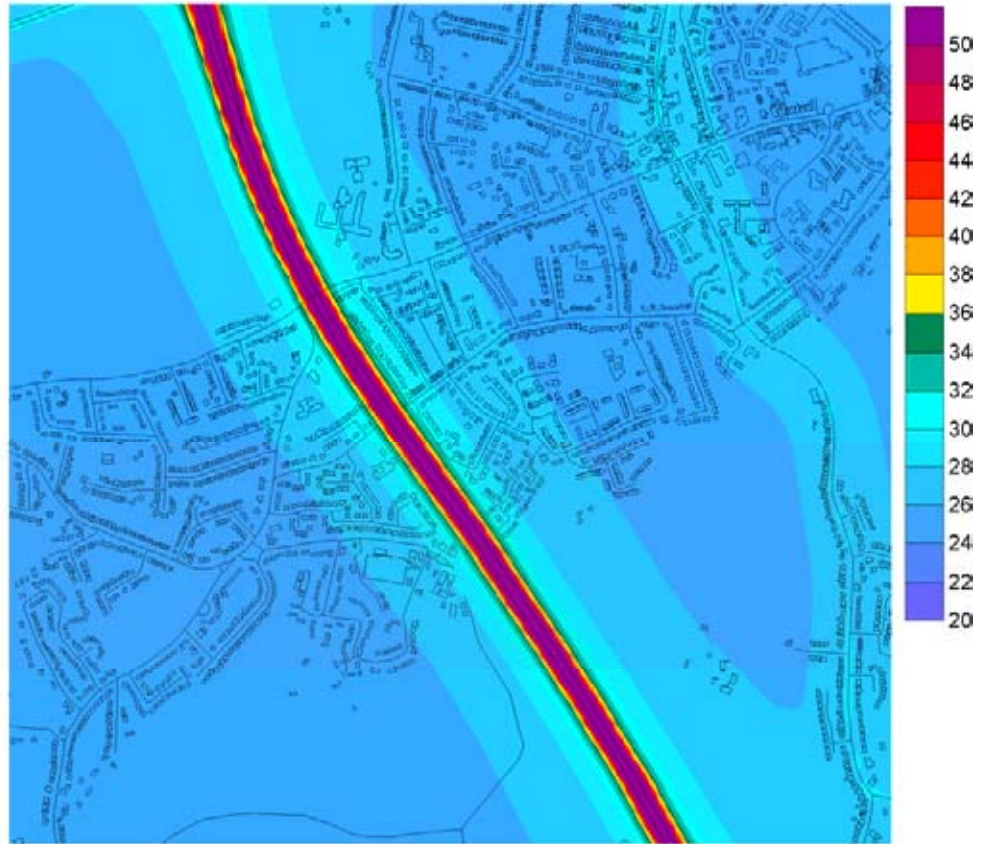


Figure 14 Detailed view of number of days with daily mean $PM_{10} > 50(\mu g/m^3)$ for M25 at Addlestone (using 1999 meteorology)



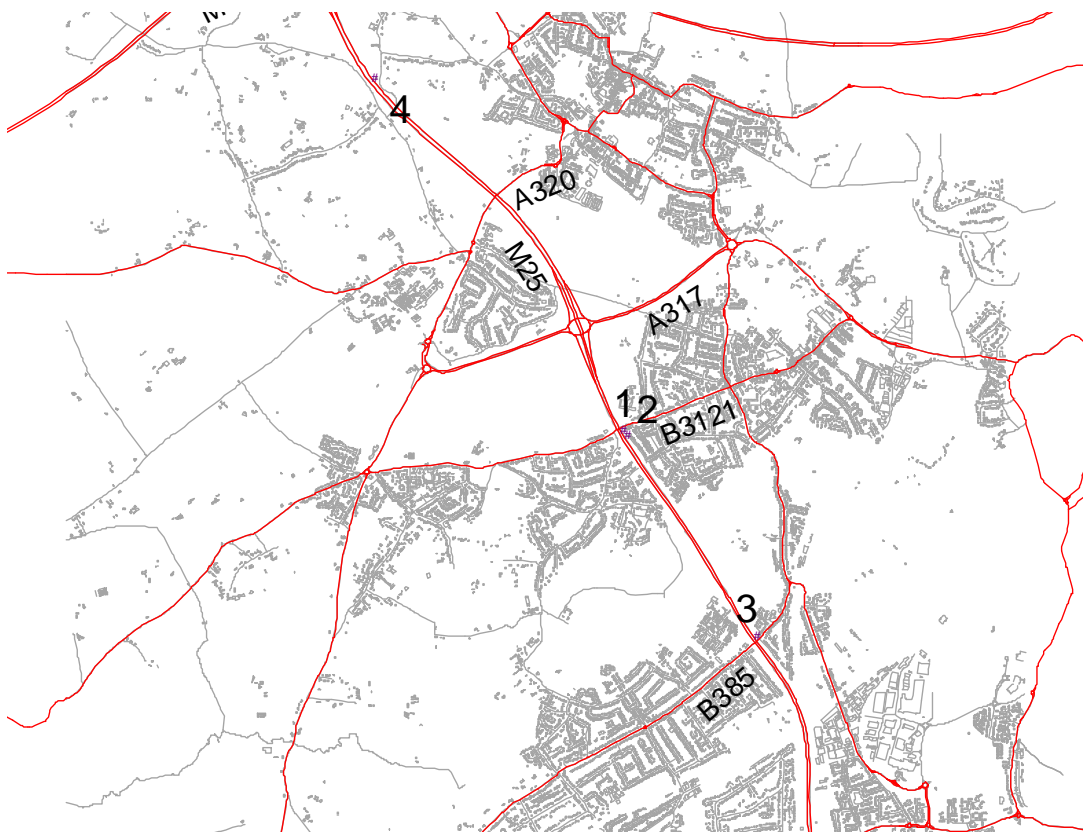
Appendix 3: Source Apportionment Sites in Runnymede BC

Table 7 Locations of sites chosen to help understand source apportionment

Site	Easting	Northing	Distance	Description	Location
1	504209	164261	35	Between J10 and J11	Off Liberty Hall Road, Addlestone
2	504238	164227	44	Between J10 and J11	Ongar Road, Addlestone
3	505214	162713	40	Between J10 and J11	Woodham Lane, New Haw
4	502332	166916	38	Between J11 and J12	Alners Road

(Note – distance is metres from façade to centre of motorway central reservation)

Figure 15 The location of facades identified near to the AQMAs



(Note – locations 1 and 2 are close together)

Appendix 4: Environmental Purchasing Policy

Recycled Products

Overall the Council's policy is to purchase recycled materials wherever possible, and to try to ensure those products purchased are capable of being recycled themselves eventually. Printing and photocopying paper, committee report paper, paper towels and cleaning rags are made of recycled materials. Toner cartridges and gas bottles are refilled.

Non-Sustainable Products and others which harm the Environment

Products may be environmentally damaging at various stages of their life cycle:

- extraction/harvesting of the raw material, e.g. tropical hardwoods
- the production process, e.g. manufacture of chlorine bleached papers or solvent based paints
- in use, e.g. energy inefficient equipment; cleaning materials can pollute water
- on disposal, e.g. batteries containing heavy metals which pollute ground water

Deciding which products are more environmentally friendly than others is not always clear cut. Often it is necessary to weigh good and bad aspects of a product. However, there are some products generally agreed to be more environmentally friendly than others.

There is general presumption against the purchase of materials which are either non-sustainable or directly harm the environment and this will include tropical hardwoods, C.F.C.s, lead-based paints, persistent herbicides and pesticides. There is a presumption against the purchase of peat wherever alternative composts can be used.

(i) Use of pesticides

All pesticides used by the Council and its contractors comply with the Control of Pesticides Regulations 1986 and are only applied by fully trained personnel who hold certificates of competence granted by the Department for Environment, Food, and Rural Affairs (DEFRA).

Wherever possible the use of pesticides and herbicides has been reduced in order to reduce the contamination of local water supplies. The Council recognises that this requires the acceptance that some weeds are better than polluted water.

(ii) Use of weedkillers

Only non-persistent products are used. Wood preservatives containing pentachlorophenol, lindane or tributyltin oxide (T.B.T.O.) are avoided as are the use of atrazine and simazine as total weed killers. No chemicals on the "U.K.'s red list and E.C.s black list" are permitted.

(iii) Use of artificial fertilisers

Use is generally restricted to the Council's bowling greens and cricket squares and use will be further reduced where suitable alternatives exist. It is recognised that artificial fertilisers are associated with increased nitrate pollution of lakes and rivers leading to a reduction in aquatic life and pollution of water supplies.

(iv) Use of peat

No peat is used in the Council's parks and gardens and the use of compost has increased. This is in recognition that the world's peat bogs are being reduced at an alarming rate so destroying valuable wet land habitats and releasing carbon dioxide - the principal green house gas.

(v) CFCs

The Council recognises that C.F.Cs are the most powerful of the "greenhouse gases" and directly associated with destruction of the ozone layer of the earth's atmosphere.

Refrigerators and freezers are collected in special collections, are taken to an outlet for recycling of C.F.Cs and not for direct disposal to landfill.

Building insulation - there is a presumption against the use of blown C.F.C. foam insulation in Council building contracts as alternatives such as mineral wool are readily available. This will be specified at the tender stage.

(vi) Cleaning products

Preference should be given to biodegradable products and non-chlorine and non-phosphate-based products.

Energy efficient products

When replacing equipment, preference should be given to energy efficient materials:

- for instance EnergyStar computers, photocopiers with a low stand by power consumption and printers with a duplex function.
- Low energy light bulbs should be preferred as they on average use 20% of the energy and last up to ten times longer than conventional bulbs.

Packaging

Purchase of over-packaged goods should be avoided. Where possible suppliers should be encouraged to re-consider their packaging practices by reducing, re-using or recycling the packaging material and by using packaging made from recycled materials.

Selection of Suppliers

Environmental considerations should be taken into account when assessing new suppliers.

Where quality and value for service are equal, preference should be given to suppliers with an environmental management system in place or to those businesses that have started considering their environmental performance.

The use of local suppliers should also be encouraged, in order to reduce transportation implications.