Air Quality Action Plan

for
Runnymede Borough Council

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

April 2014

EXECUTIVE SUMMARY

Under the system of local Air Quality Management introduced by the Environment Act 1995, local authorities have a duty to work in pursuit of air quality objectives and work towards their achievement in a cost effective way.

An area identified as unlikely to meet the objectives must be designated as an Air Quality Management Area (AQMA). After declaring an AQMA, a local authority is required to prepare a remedial Air Quality Action Plan (AQAP) to improve air quality in that area. An AQAP must provide a quantification of the source contributions to the exceedences of the relevant objectives, evidence that all available options have been considered, a plan of how the local authority will use its powers and also work in conjunction with other organisations to implement the AQAP, timescales for AQAP implementation and an impact assessment of the proposed measures.

Annual review and assessment reports (summarised in **Section 1.4**) give an account of the current air quality in Runnymede and identify areas where national targets might not be met. As road traffic is the major source of pollution in Runnymede, the main air pollutants are nitrogen dioxide (NO_2) and fine particulates. The air quality across the Borough is generally good; however, nitrogen dioxide concentrations can be of concern close to roads carrying large traffic flows or near busy congested roads in town centres. So far, Runnymede declared two AQMAs in the following areas: along the M25 (all across the Borough – declared in 2001 for both nitrogen dioxide and particulate matter (PM) and in Addlestone Town Centre (declared in 2008 for nitrogen dioxide).

Runnymede records high levels of car ownership at approximately 1.5 cars per household. The borough also records high levels of traffic travelling to and through the borough which contributes to adverse air quality. Assuming there were 5% of Heavy Good Vehicles in the traffic flow within Addlestone AQMA in 2008, this category of vehicles was found through dispersion modelling to be contributing nearly 50% of traffic related NOx (mono-nitrogen oxides NO and NO_2) in 2008 (and over 50% in 2011). Heavy Goods Vehicles were also found to be the dominant source of NOx at relevant locations close to the M25 being responsible for more than 50% at all locations (assessment taken in 2003).

Chapter 6 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 NO_2 and PM10. Measures are proposed to improve air quality both within the AQMAs and throughout the Borough as a whole.

The planning measures already in place are discussed in **Chapter 3** and include transport related 'saved' policies of the Local Plan (2001) and transport policies of the new Sustainable Community Strategy and Renewable Energy Interim Advice Note (2010) requiring from new development 10% of energy to be supplied by renewable sources. Measures outside of the planning system already introduced to bring improvements in air quality focus on the monitoring and assessment of current pollution levels and promotion of sustainable travel choices.

The actions proposed in **Chapter 6** were grouped into categories (Planning System, Monitoring, Infractructure Projects, Traffic Emissions Control, Sustainable Transport and Promotion) and ranked according to their perceived feasibility. The list of the proposed

measures list is preliminary and will be consulted upon and reviewed to identify the most effective projects to address local air quality issues. Therefore, this document is seen as the beginning of a long process and will need to undergo verifications as new data becomes available.

Most of the actions require the assistance and co-operation of partners. Runnymede Council has no authority over transport, which is managed by the Surrey County Council (local road network) and the Highways Agency (motorways).

The preferred options (prioritised measures) of this plan will have to undergo a feasibility and emission reduction study in order to quantify the costs and benefits of their implementation.

The AQAP measures will be reviewed and revised annually to ensure that the work remains focused on the best suited projects.

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Abbreviations

AQ	Air Quality
AQAP	Air Quality Action Plan
AQS	Air Quality Standard / Air Quality Strategy
AQMA	Air Quality Management Area
CEA	Cumulative Effects Assessment
CHP	Combined Heat and Power
DERA	Defence Evaluation and Research Agency
DEFRA	Department for Environment, Food and Rural Affairs
DPD	Development Plan Document
HGV	Heavy Goods Vehicle
LAQM	Local Air Quality Management
LDF	Local Development Framework
LGV	Light Goods Vehicle
LTP	Local Transport Plan
MDS	Major Developed Site
Min	Minute(s)
N/A	Not applicable
NO_x	Nitrogen Oxide
NO_2	Nitrogen Dioxide
PM	Particulate Matter
Pph	Persons per hectare
PPS	Planning Policy Statement
RTS	Regional Transport Strategy
SAC	Special Area of Conservation
SCS	Sustainable Community Strategy
SEA	Strategic Environmental Assessment
SEP	South East Plan
SPA	Special Protection Area
SPD	Supplementary Plan Document
WHO	World Health Organisation
UDP	Unitary Development Plan

1 INTRODUCTION

1.1 Purpose of Air Quality Action Plan

1 Local authorities are bound by section 82, Part IV of the Environment Act 1995 to periodically review and assess the current and likely future, air quality in their areas. The system of Local Air Quality Management (LAQM) started in 1997. There are seven pollutants to be considered and they are assessed in a phased process of review and assessment. Section 83 of the Environment Act requires local authorities to designate an Air Quality Management Area (AQMA) when one or more of the air quality objectives for each of the seven pollutants have not been met.

2 The air quality objectives are standards to be achieved by specified dates. They are set out in the Air Quality (England) Regulations 2000 (amended by the Air Quality (England) (Amendment) Regulations 2002) and originate from European air quality directives. The objectives for the UK were derived from World Health Organisation (WHO) guideline values, taking into account the existing evidence on health effects as well as the likely costs/benefits and feasibility or practicality of meeting the objectives.

3 There is no legal obligation on local authorities to achieve the prescribed air quality objectives as so many sources of emissions are outside local authority control. However, under the Environment Act 1995, local authorities have a duty to work towards improved air quality. It is required that after declaring an AQMA, a local authority prepares a remedial Air Quality Action Plan (AQAP) to improve air quality in that area. An Action Plan will provide a quantification of the source contributions to the exceedences of the relevant objectives, evidence that all available options have been considered, and a plan of how the local authority will use its powers in pursuit of the air quality objectives.

4 Defra's guidance document *Local Air Quality Management Policy Guidance (PG09)* provides guidance on the development of action plans. The AQAP is expected to include the following:

- Quantification of the source contributions to the predicted exceedences of the objectives, to allow the Action Plan measures to be effectively targeted. In this respect, the Action Plan will refer to the analysis of emission sources (source apportionment) carried out in the 2003 and 2010 Further Assessments (for the M25 and Addlestone AQMAs respectively).
- Evidence that all available options have been considered on the grounds of cost-effectiveness and feasibility;
- How the local authority will use its powers and also work in conjunction with other organisations in pursuit of the air quality objectives;
- Clear timescales in which the local authority and other organisations and agencies propose to implement measures within the Action Plan;
- Quantification of the expected impacts of the proposed measures and, where appropriate, an indication as to whether the measures will be sufficient to meet the air quality objectives; and
- How the local authority intends to monitor and evaluate the effectiveness of the Action Plan.

5 As road traffic remains the main source of air pollution relevant transport measures within the AQAP should be integrated into the Local Transport Plan (LTP). 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.

6 The aim of this AQAP is therefore to seek the support of relevant stakeholders, such as Surrey County Council, as deliverability of the proposed projects largely depends on joint working with other bodies, including local authorities and other organisations, and departments within the Council. 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.

7 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.

8 This AQAP proposes measures to manage air quality impacts from new development in existing/proposed AQMAs and areas affecting the AQMAs, in line with section 124 of the National Planning Policy Framework, which states that "[…]. Planning decisions should ensure that any new development in Air Quality Management Areas is consistent with the local air quality action plan".

9 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 in **Chapter 3** (Policy Context) and **Chapter 6** (Proposed Measures), and an outline assessment of the costs and benefits of each of these is made. This process allows measures to be prioritised and timetabled.

1.2 Air Quality Objectives

10 The air quality objectives applicable to LAQM in England are set out in the Air Quality (England) Regulations 2000, The Air Quality (England) (Amendment) Regulations 2002, and are shown in **Table 1.1**. This table shows the objectives in units of micrograms per cubic metre µg/m^3 (milligrammes per cubic metre, mg/m^3 for carbon monoxide) with the number of exceedences in each year that are permitted (where applicable).

Table 1.1 Air Quality Objectives included in Regulations for the purpose of LAQM in England

Pollutant	Air Quality Objective		Date to be achieved by
	Concentration	Measured as	
Benzene	16.25 μg/m^3	Running annual mean	31.12.2003
	5.00 μg/m^3	Running annual mean	31.12.2010
1,3-Butadiene	2.25 μg/m^3	Running annual mean	31.12.2003

Carbon monoxide	10.0 mg/m^3	Running 8-hour mean	31.12.2003
Lead	0.5 μg/m^3	Annual mean	31.12.2004
	0.25 μg/m^3	Annual mean	31.12.2008
Nitrogen dioxide	200 μg/m^3 not to be exceeded more than 18 times a year	1-hour mean	31.12.2005
	40 μg/m^3	Annual mean	31.12.2005
Particles (PM_{10}) (gravimetric)	50 μg/m^3, not to be exceeded more than 35 times a year	24-hour mean	31.12.2004
	40 μg/m^3	Annual mean	31.12.2004
Sulphur dioxide	350 μg/m^3, not to be exceeded more than 24 times a year	1-hour mean	31.12.2004
	125 μg/m^3, not to be exceeded more than 3 times a year	24-hour mean	31.12.2004
	266 μg/m^3, not to be exceeded more than 35 times a year	15-minute mean	31.12.2005

11 The air quality critical level for the protection of vegetation for nitrogen oxides, as set out in the Air Quality Standards Regulations 2010, is shown in **Table 1.2**. Although local authorities are not required to work towards the achievement of this objective, it was considered reasonable to include it in the report due to the Borough's proximity to a European habitat conservation site.

12 The potential impacts of air pollution were assessed as part of the addendum to the Habitats Regulations Assessment (HRA) for the Core Strategy. This was able to resolve the issue around impacts upon these sites to Natural England's satisfaction and they were then discounted as having no likely significant effect,

13 Runnymede lies within a short distance of Chobham Common, site designated both as a Natural Nature Reserve (NNR) and a Site of Special Scientific Interest (SSSI). Chobham Common is also a component of two International Sites (European or Natura 2000 sites), the Thames Basin Heaths Special Protection Area (SPA) and Thursley, Ash, Pirbright and Chobham Special Area of Conservation (SAC).

Table 1.2 Nitrogen oxides critical level for the protection of vegetation (Schedule 6 of the Air Quality Standards Regulations 2010)

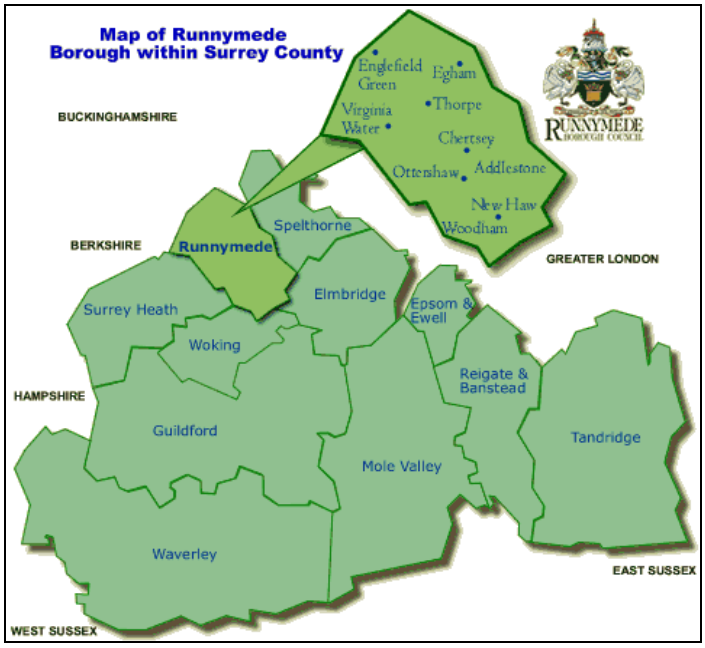
Pollutant	**Critical Level**	
	Concentration	**Measured as**
Oxides of nitrogen	30 μg/m^3	Annual mean

1.3 Background Information about the Borough

Location and key statistics

14 Runnymede lies approximately 30km in a straight line southwest from central London. It is located in northwest Surrey. Its northern and eastern edges are formed by the rivers Thames and Wey respectively, its western boundary crosses Windsor Great Park and reaches the edge of Chobham Common (outside Borough Boundary), while to the south, the area extends almost to Woking. Runnymede includes the towns and villages of Addlestone, Chertsey, Egham, Englefield Green, Lyne, New Haw, Ottershaw, Row Town, Thorpe, Woodham and Virginia Water (as shown in **Figure 1-1** below).

Figure 1-1 Location of Runnymede in Surrey



15 Total area of Runnymede amounts to 7,804 hectares[1], of which 6,140 hectares (79%) is designated as the Metropolitan (London) Green Belt.

16 The population of Runnymede is 80,510[2]. Population density is 10.3 people per hectare, which is over twice the regional and national average. Surrey is the most densely populated county within the south-east. Population density varies considerably across the county with north surrey being generally more densely populated due to its more urban character, particularly in the areas around the M25 and bordering London. The largest towns are listed below[3]:

Town	Population
▪ Addlestone	17,888
▪ Chertsey	11,766
▪ Egham	11,179
▪ Englefield Green	11,180

[1] 2011 Census: Quick Statistics - Population Density, 2011 (QS102EW).
[2] As above.
[3] Estimated from Census 2001 and Census 2011 ward population data.

Road Traffic

17 The Borough is intersected by two motorways: the M25, which goes round London and runs north / south through the Borough, and the M3 crossing east west, which links South West London to Southampton and the South Coast (**Figure 1-2**). Other major roads are the A30, A318, A317, and A320.The three largest towns of Addlestone, Chertsey and Egham are connected by A and B category roads. Main A roads connect the west part of the Borough with Windsor and Bracknell, and the south side of the borough connects well with Woking and Guildford. There is good access by road to the airports of Heathrow and Gatwick.

Figure 1-2 Location of Runnymede in Surrey (Location and direction of M25 and M3 crossing the borough of Runnymede

18 Road traffic is the main source of air pollution in Runnymede. The number of cars per household in Runnymede amounts to 1.5[4]. Car ownership within the Borough is higher than the average for England, with 85% of households having one or more cars available and 45% having two or more cars[5]. Such high car ownership may account for low usage of public transport.

[4] 2011 Census: Key Statistics - Car or Van Availability, 2011 (KS404EW).
[5] As above.

19 There are a number of bus routes using the road network, as shown in **Table 1.3** and on the map in **Figure 1-3**. Bus services in Runnymede were reviewed by Surrey County Council in August 2010. The buses are operated by different operating companies, Abellio Surrey being the most popular provider. A quality Bus Partnership operates in the north of the Borough on the Windsor - Heathrow route.

Figure 1-3 North Surrey bus routes map[6]

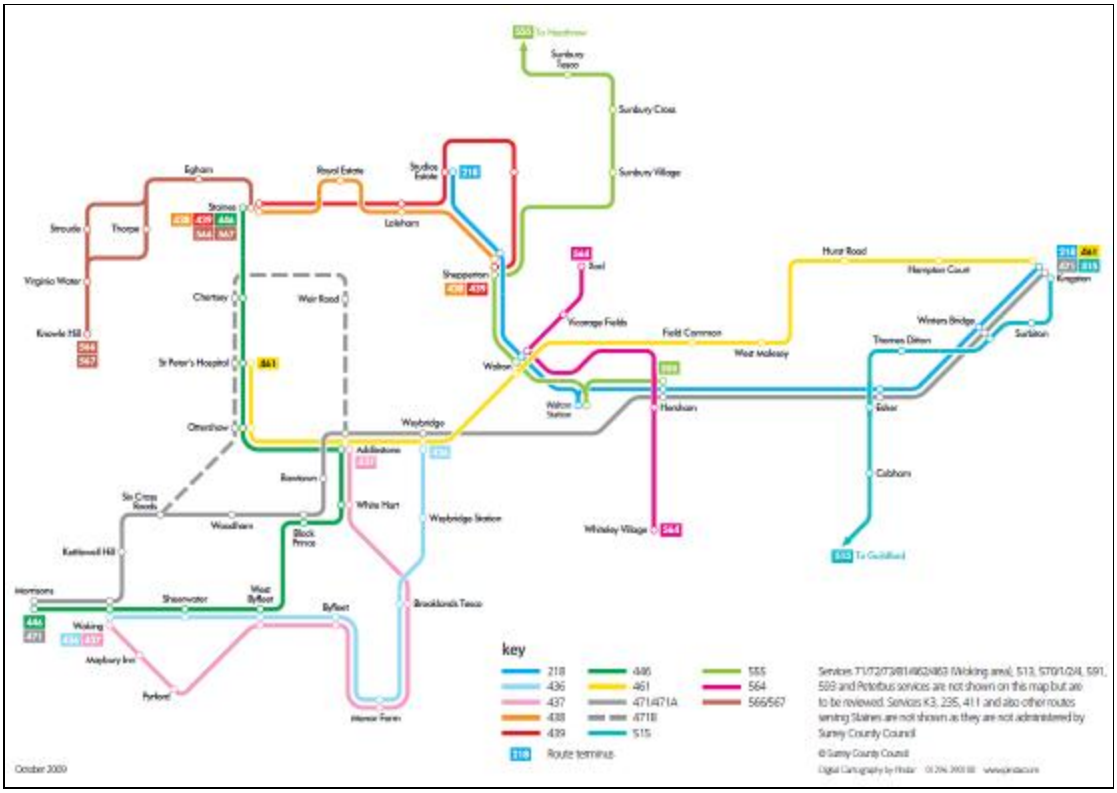


Table 1.3 Bus routes in Runnymede

Service	Route	Operator
51	Heathrow Airport Terminal 5, Staines, Chertsey, Addlestone, Weybridge, Byfleet, Manor Farm, Brooklands	First
71	Heathrow Airport Term 5, Staines, Egham, Englefield Green, Old Windsor, Windsor and Slough	First in Berkshire
441	Heathrow Airport, Stanwell Moor, Stanwell, Ashford Hospital, Staines, Pooley Green, Egham and Englefield Green	Abellio Surrey
446	Staines, Thorpe Park, Chertsey , St Peter's Hospital, Ottershaw, Coombelands, Addlestone, New Haw, West – Byfleet, Sheerwater, Woking	Abellio Surrey
459	Kingston, Esher, Hersham, Addlestone, Coombelands, New Haw, Woking	Abellio Surrey
461	Chertsey, St Peter's Hospital, Ottershaw, Addlestone, Weybridge, Walton, West Molesey and Kingston	Abellio Surrey

[6] North Surrey Bus Review – Proposed Changes (2010)

500	Staines, Egham, Virginia Water, Sunningdale, Windlesham, Bagshot, Camberley and Frimley Park Hospital	Dicksons Travel
557	Hatton Cross, Heathrow Terminal 4, Stanwell, Ashford, Sunbury, Shepperton, Chertsey, St Peter's Hospital and Woking	Abellio Surrey
566/567	Staines-The Causeway, Egham, Thorpe or Stroude, Virginia Water, Knowle Hill	Abellio Surrey
593	Woking/Brooklands, Addlestone, Lyne, Chertsey, Penton park and Staines	Carlone Buses
656	Lower Sunbury, Sunbury Cross, Upper Halliford, Shepperton, Laleham and Egham (Strode's College)	Bear Buses
695	Englefield Green, Egham, Pooley Green, Staines, Laleham, Shepperton, Upper Halliford and Bishop Wand School	Bear Buses
950	Staines and Thorpe Park	Sullivan Buses (school services)
Campus Link	Campus Link Egham Station, Royal Holloway College Main Campus, Kingswood Campus	Tellings - Golden Miller
Route 3	St Peter's Hospital, Lyne, Virginia Water, Thorpe, Stroude, Egham and Englefield Green	Peterbus
Route 4	St Peter's Hospital, Green Lane, Addlestone, Weybridge, Hersham and Walton-on-Thames	Peterbus

NB: The list of services in Table 1.3 is not exhaustive

Railway

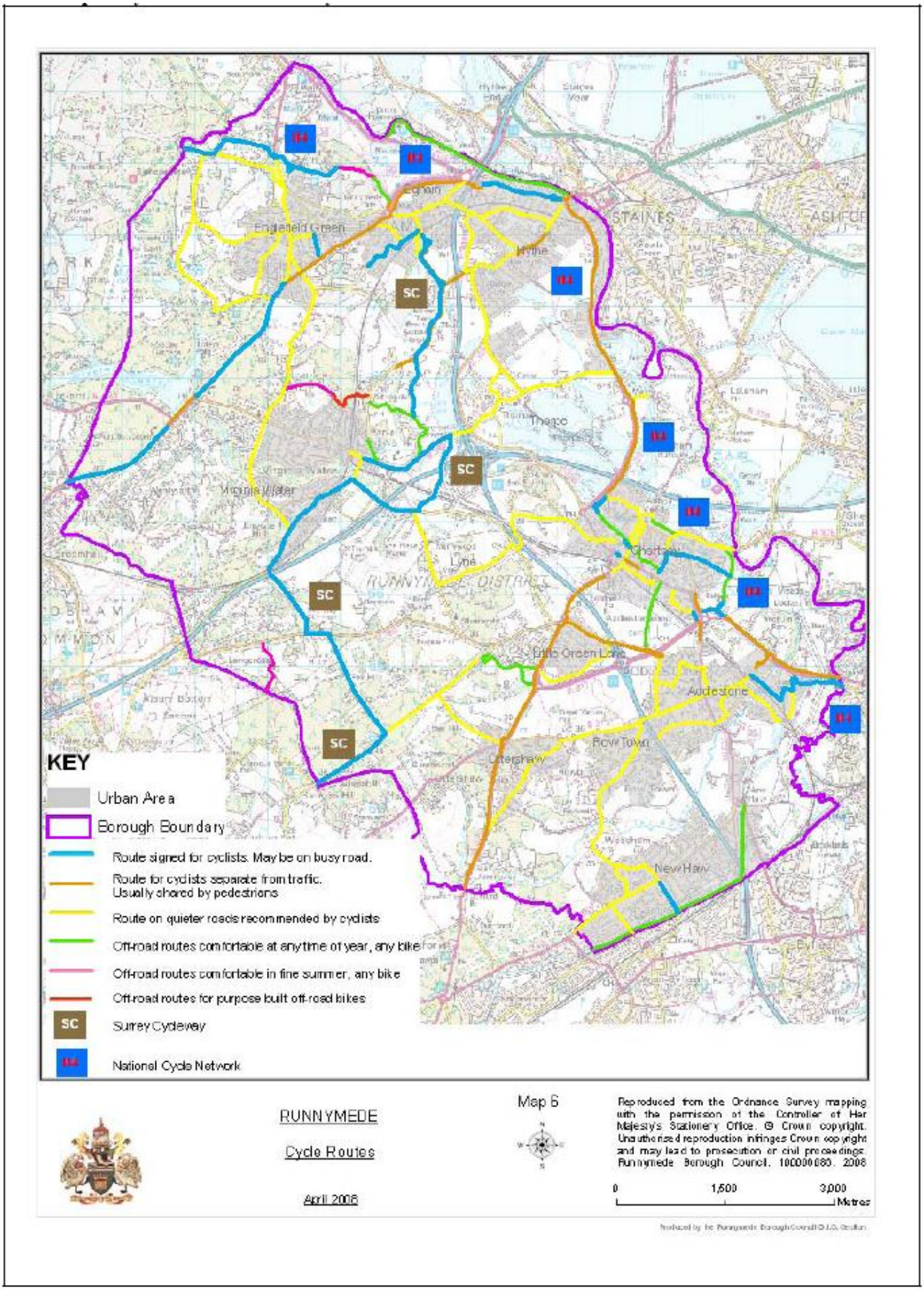
20 Runnymede has main line rail connections to London (Waterloo) and Reading. Southwest destinations can be reached through links with Weybridge, Woking and Guildford. The layout of railway lines is shown in **Figure 1-5**. Main train routes include:

- Direct route to London Waterloo calling at: Weybridge, Addlestone, Chertsey, Virginia Water, Egham, Staines, Ashford, Feltham, Hounslow, Isleworth, Syon Lane, Brentford, London (Kew Bridge), Chiswick, Barnes Bridge, Barnes, Putney, Wandsworth, Clapham Junction, Battersea (Queenstown Road), Vauxhall, London (Waterloo).
- Route to Reading: London (Waterloo), Clapham Junction, Richmond, Twickenham, Feltham, Staines, Egham, Virginia Water, Sunningdale, Ascot, Martins Heron, Bracknell, Wokingham, Winnersh Triangle, Earley, Reading.

Cycling network

21 Surrey County Council and the district boroughs in Surrey have been investing in the construction of an extensive cycle route network throughout Surrey. The cycling strategy to support the third Surrey's Local Transport Plan will be developed during the first half of 2011. In 2006 an off-road cycle route was completed between Woking and Chertsey/Addlestone. **Figure 1-4** shows the cycle network in Runnymede.

Figure 1-4 Cycle network in Runnymede



Airports

22 The distance from the Borough's boundary (intersecting M25) to Heathrow Airport (Terminal 5) via M25 is about 6 km.

Industry and infrastructure

23 Most of the built environment in Runnymede is residential in nature, due to the Borough's close proximity and good road/rail access to London. Small pockets of industrial land use are mainly located on designated industrial/trade estates. More recently the area has been targeted for office developments (**Figure 1-3**). Main sources of employment are in the service sector.

24 Some 572 hectares (9%) of the Borough's area is affected by heavy exploitation of its natural gravel and sand deposits, which have occurred for many decades, with another 142 hectares targeted for future extractions. The empty extraction pits have mainly been utilised by landfilling with domestic and inert commercial waste.

25 The list of industrial installations within the Borough regulated under the Pollution Prevention and Control regime is included in **Appendix B**. Nine industrial installations fall under A1 category and are regulated by the Environmental Agency. There are no type A2 installations. There are 35 Part B installations, comprising:

- 1 Cement Mortar Batching plant
- 4 Vehicle Respraying installations
- 6 Mobile Crushers
- 8 Dry Cleaners
- 13 Petrol stations
- 1 Mobile Roadstone Coating installation
- 2 Mobile Batching Plants

26 Runnymede Infrastructure Delivery Plan[7] provides an overview of existing infrastructure provision and identifies the future infrastructure and service needs for the Borough (for the emerging Local Plan period up to 2026).

27 It must be noted that 79% of the Runnymede area is comprised of Green Belt where there is a general presumption against major development as per the National Planning Policy Framework. The restrictions over development extend to housing, where control goes as far as residential extensions and replacement dwellings. However the NPPF does state that affordable housing needs under the Local Plan are an exception.

[7] RBC (2013) *Infrastructure Delivery Plan*. Available from: http://www.runnymede.gov.uk/portal/binary/com.epicentric.contentmanagement.servlet.ContentDeliveryServlet/RBC%2520Portal/LGCL%2520Categories/Environment/Land_premises/Planning/Planning_policy/LDF/IDP/IDP_2013.pdf

Figure 1-5 Industry and Infrastructure in Runnymede

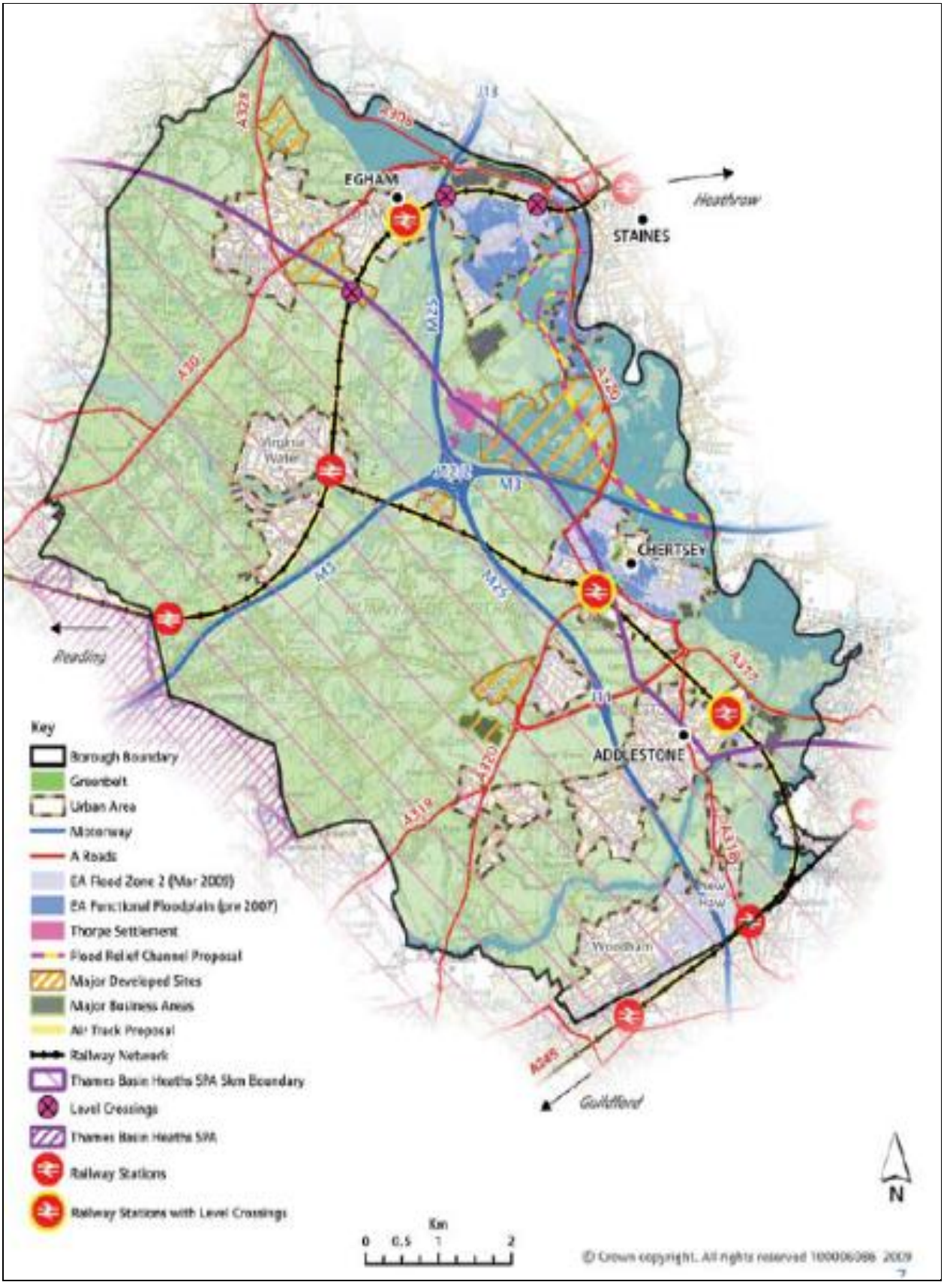
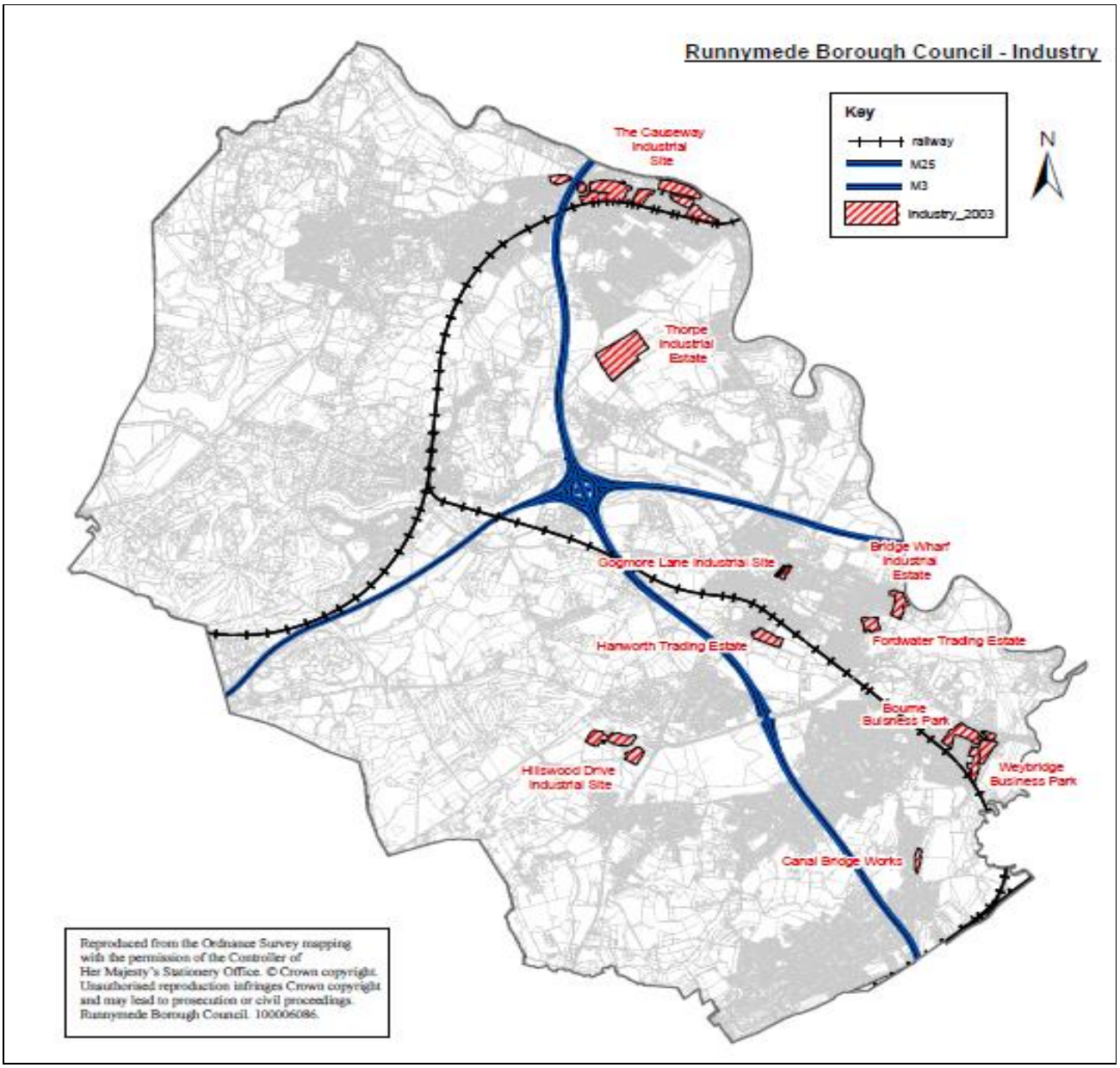


Figure 1-6 Locations of business parks and industrial estates in Runnymede in 2003



1.4 Summary of Previous Review and Assessments

First round of review and assessment

28 Runnymede Borough Council (the Council) undertook its first round of air quality review and assessment between the years 1999 and 2002. The assessment was carried out in four stages as prescribed by the then statutory guidance and published as four consecutive air quality reports. In light of the more accurate and detailed Stage 3 Review and Assessment (completed in 2000), the Council declared an AQMA for NO_2 and PM_{10} in November 2001 for the areas (**Figures A1** and **A2** in **Appendix A**):

- (Area 1 - north of junction 11) extending 70m east and west of the centre line of the M25 between Junction 11 and the borough northern boundary at Egham;
- (Area 2 - south of junction 11) extending 55m east and west of the centre line of the M25 between Junction 11 and the southern boundary of the borough at New Haw/Byfleet.

Second round of review and assessment

29 Nitrogen dioxide monitoring data collated for the 2003 Updating and Screening Assessment confirmed that annual mean concentrations of nitrogen dioxide at all the diffusion tube monitoring sites complied with the objective.

30 However, the assessment of Runnymede road traffic identified roads at risk of NO_2 objectives being exceeded:

- One road with increased traffic flow: Woburn Hill;
- Three junctions: Eastwood Rd/Guildford Street; High Street/Church Rd; Woodham Lane/New Haw Rd.

31 A Detailed Assessment was undertaken for the above locations in 2004, however, dispersion modelling indicated that the only areas predicted to exceed the 2005 objective for NO_2 were those close to the M25 motorway (already part of the AQMA).

Third round of review and assessment

32 The 2006 Updating and Screening Assessment recorded elevated levels of NO_2 at roadside monitoring sites - RY1 in Addlestone and RY6 **(Figure 2.1)** at the Leisure Centre in Egham (already within the M25 AQMA, the area north of junction 11).

33 No roads were identified as requiring dispersion modelling. Therefore, a Detailed Assessment (2007) was based on the monitoring results and focused on Addlestone town centre. As a result, an AQMA for NO_2 was declared in July 2008 for the junction of High Street, Brighton Road and Church Road in Addlestone. The extent of this AQMA can be seen in **Figures A3** and **A4, Appendix A**.

Fourth round of review and assessment

34 The 2009 Updating and Screening Assessment concluded that although there were no identified exceedences of the annual mean objective for nitrogen dioxide outside AQMAs in 2008 or the two preceding years, and no roads were considered to be requiring a Detailed Assessment, it was still necessary to undertake further diffusion tube monitoring, mainly in Addlestone, Egham and Chertsey, to monitor the levels of nitrogen dioxide on 'busy' roads.

35 Monitoring results for nitrogen dioxide as examined in the 2010 Progress Report showed potential exceedences of the annual mean objective at a few residential properties in the area nearest Vicarage Road level crossing in Egham (monitoring site RY26). It was, therefore, recommended to proceed to a Detailed Assessment in this location. The 2010 Report identified one planning application – to redevelop the former DERA site in Longcross - as likely to have a significant adverse impact on air quality in the areas where large increases in traffic flow would be incurred as a result of the proposed development. It

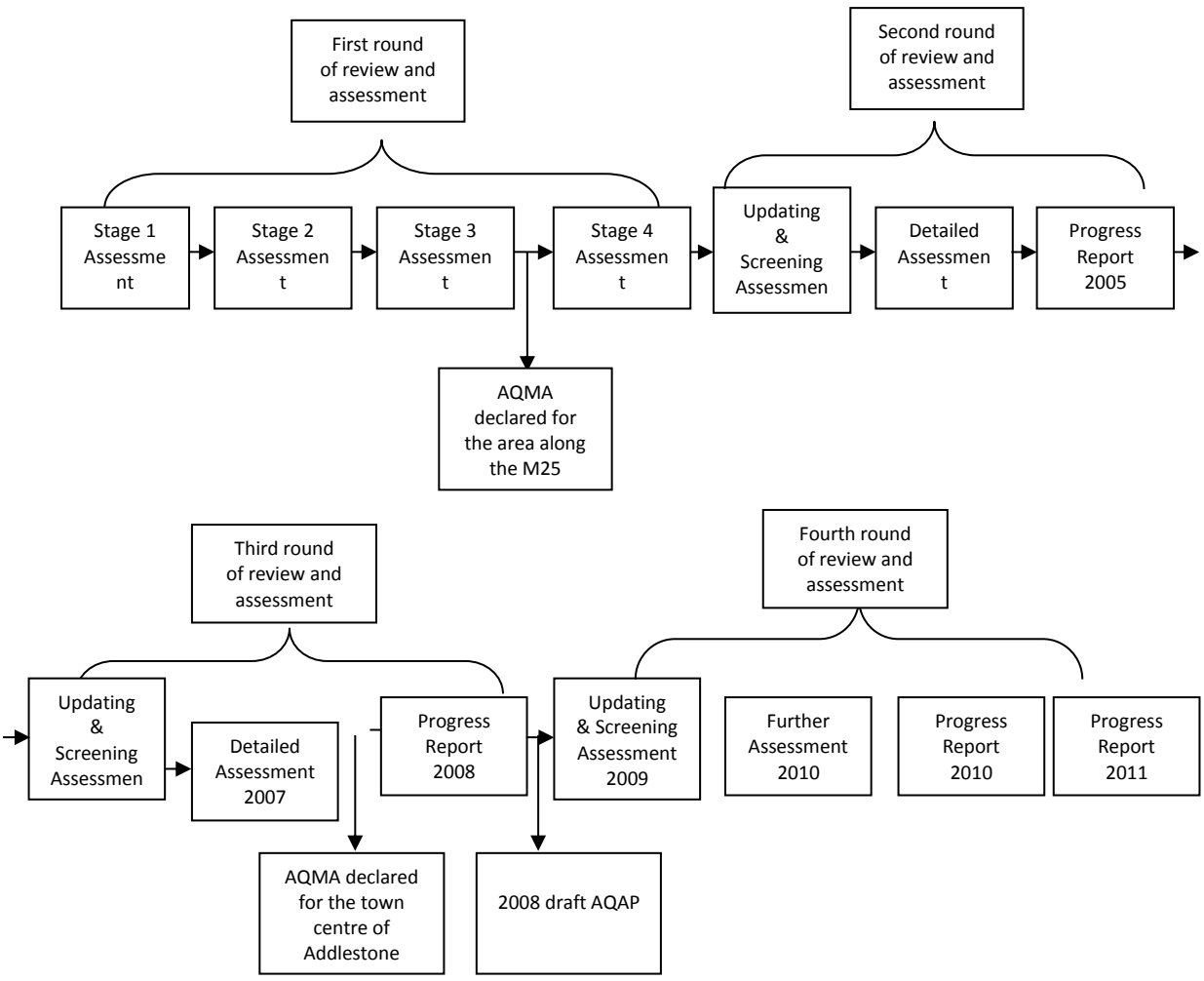
was considered that the affected roads would include: C10 Trumpsgreen Road; B389 Sandhills Lane; B388 Mill House Lane; C10 Chobham Lane; C10 Stroude Road; B375 London Street and B388 Vicarage Road.

36 The Further Assessment for Addlestone AQMA, completed in 2010, confirmed that the highest concentrations of NO_2 occurred at the junction of High Street and Station Road. High NO_2 concentrations were also modelled close to the High Street the road centre (between Simplemarsh Road and Chapel Avenue, where "street canyon" effects can be expected to occur) and Station Road (in the proximity of the railway station where higher emissions come from stationary traffic backing up behind the railway barriers). Heavy Goods Vehicles were found to contribute significantly to emissions.

Air Quality Action Plan

37 In 2008, a draft action plan was prepared for Runnymede Air Quality Management Areas, which set out measures aimed at improving air quality and achieving the air quality objectives in the Borough.

Figure 1-7 Stages of the air quality review and assessment process in Runnymede



2 DEFINING THE PROBLEM

2.1 Effects of Air Pollution

1 Air pollution can affect human health and natural and built environments.

2 A lot of research was carried out and reported about the effects of air pollution on human health (**Table 2.1**). Short-term effects were observed on, for example, the respiratory system, and more serious impacts due to long-term exposure included permanent reductions in lung function[8]. Air pollution has been linked to asthma, chronic bronchitis, heart and circulatory disease, and cancer. Particulate matter is thought to have the most damaging impact on health with adverse effects to health seen at very low concentrations. Ozone and particulate matter are linked to summer smog episodes. Climate change is likely to make air quality problems worse[9].

3 In recent years, The Committee on the Medical Effects of Air Pollutants (COMEAP), a government advisory expert group, resumed work on the quantification of air pollution health effects. A report on *the Mortality Effects of Long-Term Exposure to Particulate Air Pollution in the UK* (2010) presented the results of calculations of mortality in 2008. The burden of particulate air pollution (specifically $PM_{2.5}$) was estimated to be an effect equivalent to about 29,000 deaths, or a loss of life expectancy from birth of 6 months. COMEAP speculated that it was reasonable to consider that air pollution may have made at least some contribution to the earlier deaths of up to 200,000 people (the number dying of cardiovascular causes) with an average loss of life of about two years.

4 In 2010 COMEAP reported, that, as well as exacerbating asthma in those already having the condition, air pollution might also play a role in the induction of new cases of asthma amongst those living close to busy roads, particularly roads carrying high numbers of heavy goods vehicles[10].

5 Air pollution can have negative impacts on ecological habitats, both in terms of direct effects of pollutants on vegetation - through changes in ambient atmospheric concentrations of air pollutants, and indirectly through nitrogen and acid deposition to soil and water.

6 A directly toxic effect upon vegetation of nitrogen oxides includes leaf or needle damage and reduced growth. An increase in nitrogen deposition can cause eutrophication, which process can alter the species composition of plant communities and eliminate sensitive species. Acid deposition can affect habitats and species through both wet (acid rain) and dry deposition. The acidification of soil can result in changes to species composition.

7 Regarding particulate matter, numerous studies confirmed that dust of varying origin interferes with stomatal function, increases leaf temperature and transpiration, reduces photosynthesis and increases the uptake of gaseous pollutants[11]. The adverse effects on stomatal function and photosynthetic rate are greater with dust of smaller particles.

[8] Environmental Audit Committee, Air Quality, House of Commons, Fifth Report of Session 2009–10 Volume I.
[9] As above.
[10] COMEAP (2010) Statement. 'Does Outdoor Air Pollution Cause Asthma?'.
[11] CEH (2011) Air Pollution and Vegetation. ICP Vegetation Annual Report 2010/2011 after Thomson et al. (1984) and Farmer (1993):

Table 2.1 Effects of air pollution on human health [adapted from COMEAP reports and statements referenced in the footnote]

	Health Effects	Quantification of effects
Particulate Matter	The range of health effects associated with PM is broad, but is predominantly related to the respiratory and cardiovascular systems. All of the population is affected, but susceptibility to the effects of PM may vary with health or age. The risk for various outcomes has been shown to increase with exposure, with both short-term and long-term exposure being important. There is little evidence to suggest a threshold below which no adverse health effects would be anticipated, but effects are unlikely to be noticed below about 50 µg/m^3 for PM_{10}[12].	It is clear that long-term exposure to particles is linked with mortality and it was agreed by experts that $PM_{2.5}$ be used as the index of particulate air pollution in quantitative assessments[13]. PM_{10} appears to have a weaker effect on the relative risk of death from all-causes than $PM_{2.5}$ (i.e. the evidence was strongest for $PM_{2.5}$). COMEAP recommended the use of coefficients expressing the relative risks of mortality associated with a 10 µg/m^3 increase in $PM_{2.5}$. For example, the risk coefficient used to estimate all-cause mortality was 1.06 (6%) per 10 µg/m^3 change in annual average airborne $PM_{2.5}$ concentration, which was derived from the American Cancer Study (ACS) cohort as recommended by COMEAP (2009)[14].
Nitrogen Dioxide	At high concentrations NO_2 acts as an irritant, causing inflammation of the airways. By affecting the immune cells in the lungs, it can also increase susceptibility to respiratory infections and allergens[15]. It has been difficult to determine the direct, individual health effects of NO_2 at ambient concentrations because it is emitted from the same sources (notably traffic) as other pollutants, such as particulate matter. NO_2 is often regarded as a marker for the presence of other traffic-related pollutants[16]. COMEAP agreed that the studies provided some evidence of an association between outdoor air pollution, in general, and of traffic-related air pollution in particular, on respiratory morbidity in children. It was also agreed that whilst, on the basis of epidemiological evidence, a direct effect of NO_2 on respiratory morbidity in children could not be clearly identified (because the possible adverse effects of NO_2 could not be disentangled from those of the other pollutants in the urban mixture), a small effect could not be ruled out[17].	According to COMEAP, there is currently insufficient evidence to attempt to quantify the possible but unproven effects of exposure to ambient concentrations of nitrogen dioxide on mortality[18]. Neither was it possible to quantify the direct effects of NO_2 on respiratory morbidity in children[19].

Thompson, J.R., Mueler, P.W., Flückiger, W., Rutter, A.J. (1984) *The effect of dust on photosynthesis and its significance for roadside plants.* Environmental Pollution (Series A) 34: 171 – 190.
Farmer, A.M. (1993) *The effects of dust on vegetation – a review*. Environmental Pollution 79: 63 – 75.
[12] DEFRA (2012) *Air Pollution in the UK 2011*.
[13] COMEAP (2009) *Long-Term Exposure to Air Pollution: Effect on Mortality.*
[14] COMEAP (2009) Long-Term Exposure to Air Pollution: Effect on Mortality.
[15] COMEAP (2011) Review of the UK Air Quality Index.
[16] COMEAP (2011) *Review of the UK Air Quality Index.*
[17] COMEAP (2009) Statement on the quantification of the effects of long-term exposure to nitrogen dioxide on respiratory morbidity in children.
[18] COMEAP (2009) *Long-Term Exposure to Air Pollution: Effect on Mortality.*
[19] COMEAP (2009) *Statement on the quantification of the effects of long-term exposure to nitrogen dioxide on respiratory morbidity in children.*

2.2 Local Air Quality

2.2.1 Air Quality in the UK

8 There has been a considerable improvement in air quality since the smogs of the 1950s through the introduction of the Clean Air Act 1956 and tougher regulation on emissions from industry and road transport. On the other hand, substantial increase in the number of motor vehicles has shifted the focus of policies towards pollutants directly or indirectly derived from traffic sources: nitrogen oxides, carbon monoxide, particulates and ozone. Legislation in recent years has been aimed at controlling emissions associated with vehicles.

9 There are two main trends to be observed in the transport sector. On the one hand, vehicles are producing less air pollution as a result of improvements in technology but on the other hand, total vehicle kilometres are increasing[20]. Nevertheless, overall emissions of key air pollutants from road transport have fallen by about 50% over the last ten years despite increases in traffic and further reductions are predicted for the future.

10 Particulate matter (PM_{10}) concentrations across the UK have been decreasing for the past two decades. Urban background particulate concentrations declined from a peak of approximately 35 $\mu g/m^3$ in 1992 to 20 $\mu g/m^3$ in 2011[21]. Roadside particulate concentrations declined from a peak of approximately 39 $\mu g/m^3$ in 1997 to 23 $\mu g/m^3$ in 2011. All of the air quality 'zones' in the UK met the objective for annual mean concentration of PM_{10} in 2010 and 2011. Only one zone exceeded the daily limit value for PM_{10} in 2010 and it was the Greater London Urban Area. In May 2010 the Government applied to extend the compliance deadline for European PM_{10} targets. In March 2011, the European Commission published a Decision accepting the UK's application and granted an extension until June 2011 to comply with the PM_{10} limits in London. A breach of the daily PM_{10} limit recorded in London in 2010 was remedied in 2011, largely because the commission had granted an extension covering part of the year.

11 The annual mean nitrogen dioxide concentrations across the UK averaged for all background urban and traffic urban sites (both including long-running sites) in the national monitoring network showed a decrease over time (from approximately 60 $\mu g/m^3$ in 1997 to below 45 $\mu g/m^3$ in 2011 for traffic urban sites and from approximately 50 $\mu g/m^3$ in 1990 to 25 $\mu g/m^3$ in 2011 for background urban sites), however the average for traffic urban long-running sites showed a slight increase in recent years[22]. In 2011 The UK exceeded the limit value for annual mean nitrogen dioxide in 40 (out of 43) air quality zones. The limit value for hourly mean nitrogen dioxide was exceeded in three zones, and these were Greater London Urban Area, Glasgow Urban Area, and the South East. The Government submitted a notification for time extension to the European Commission for NO_2 targets in September 2011. The UK has been granted a time extension for compliance with the NO_2 annual limit value in some of the zones, which applies until 1st January 2015 for all but Reading/Wokingham Urban Area (for which it applies until 1st January 2013). The government plans are to delay meeting NO_2 standards in major cities until 2020 - or in the case of London, 2025.

[20] Defra (2007) *The Air Quality Strategy for England, Scotland, Wales and Northern Ireland (Volume 1).*
[21] DEFRA (2012) *Air Pollution in the UK 2011.*
[22] DEFRA (2012) Air Pollution in the UK 2011.

12 Although nitrogen dioxide concentrations have been reducing, monitoring data suggests that reductions of NO_x and/or NO_2 have been smaller than forecast. This may be due to the fact that nitrogen dioxide emissions from diesel vehicles and older petrol cars have not been reducing as fast as expected[23]. Another reason may also be that the stock mix on the road has not been accurately understood[24]. To conclude, although it is assumed that roadside concentrations will reduce over time following higher availability and uptake of clean vehicle and fuel technologies this may not happen as fast as predicted by national modelling.

13 It is difficult to make predictions to what extent air quality in Surrey, including Runnymede, will benefit from measures implemented on a national level. Recent observations confirm that emissions reductions and air quality benefits from national and local measures are not guaranteed and there are significant uncertainties associated with future emissions of pollutants and the effectiveness of air quality mitigation measures[25].

2.2.2 Air Quality in Runnymede

14 Annual review and assessment reports (summarised in **Section 1.4**) give an account of the current air quality in Runnymede and identify areas where national targets might not be met. Runnymede Council monitors nitrogen dioxide using a network of diffusion tubes. The existing diffusion tube network provides sufficient data to assess the levels of nitrogen dioxide at key sites in the borough including the AQMAs, and to analyse the trends. In addition, an air quality monitoring analyser had been providing continuous NO_2 / PM_{10} data from Vicarage Road in Egham between February 2011 and August 2011.

15 Transport (mostly road transport) is a major source of air pollutant emissions, having contributed 66% of the total nitrogen oxides (NO_x) and 67% of the total particulates (PM_{10}) in 2010[26]. Runnymede records high levels of car ownership at approximately 1.5 cars per household [(27)]. The borough also records high levels of traffic travelling to and through the borough which contributes to adverse air quality.

16 As road traffic is the major source of pollution in Runnymede, the main air pollutants are nitrogen dioxide and fine particulates.

17 The air quality across the Borough is generally good, with urban background concentrations of nitrogen dioxide remaining within the range of 20-35 µg/m^3.

18 Nitrogen dioxide concentrations can be, however, of concern close to roads carrying large traffic flows or near busy congested roads in town centres. Two thirds of Runnymede's roadside nitrogen dioxide diffusion tube monitoring sites had been showing average annual concentrations close to (over 36 µg/m3) or exceeding objectives for 2011 and 2012. So far, Runnymede has declared two Air Quality Management Areas in the following areas (**Figures A1-A4, Appendix A**):

[23] Bureau Veritas on behalf of Department for Environment, Food and Rural Affairs (2012) Note on Projecting NO2Concentrations.
[24] Laxen D (2010) *What advice for modelling future nitrogen dioxide?* Air Quality Consultants presentation.
[25] Defra (2007) The Air Quality Strategy for England, Scotland, Wales and Northern Ireland (Volume 1).
AQEG (2004) Nitrogen Dioxide in the United Kingdom.
[26] NAEI maps: All emissions by UNECE sectors - 2010
[27] 2001 Census – Key Statistics (Cars or Vans)

- Along the M25 – all across the Borough – declared in 2001 for both nitrogen dioxide and particulate matter;

- In Addlestone Town Centre – declared in 2008 for nitrogen dioxide.

19 Particulate matter concentrations are assumed to follow the national decreasing trends. The PM_{10} results from the Egham continuous monitoring site showed the average PM_{10} concentration of 25.7 $\mu g/m^3$ for the six-month monitoring period in 2011, well below the annual mean objective of 40 $\mu g/m^3$.

20 Although background concentrations of nitrogen oxides and nitrogen dioxide in Runnymede are below the limit values for the protection of human health, the current levels still can affect the sensitive ecological receptors. Runnymede area lies within a short distance of Chobham Common, site designated both as a Site of Special Scientific Interest (SSSI) and as a Natural Nature Reserve (NNR). Chobham Common is also a component of two International Sites (European or Natura 2000 sites), the Thames Basin Heaths Special Protection Area (SPA) and Thursley, Ash, Pirbright and Chobham Special Area of Conservation (SAC). The Thursley, Ash, Pirbright and Chobham SAC currently exceeds the minimum critical loads for nitrogen deposition and NO_x levels. The Thames Basin Heaths SPA exceeds the minimum and maximum range of critical loads and NO_x levels.

2.2.3 Addlestone AQMA

Area description

21 The AQMA in Addlestone town centre covers parts of the roads diverging at the junction of High Street and Station Road as shown on the map in **Figures A1, Appendix A**. Photographs of the area can be seen in **Figures A2, Appendix A.**

22 Addlestone High Street (A318) is a relatively narrow road (circa 7-8m wide), with low-rise housing of mixed use. Two-storey buildings are prevalent. There are also few three-storey buildings, spread along the whole road length. The lower storeys consist of commercial premises, while the upper storeys are occupied by residential flats (flats above shops").

23 B3121 Station Road shows similar characteristics to the High Street; there is however more space between buildings on both sides of the road and housing is prevalently 3-storey, with residential premises occupying upper floors.

24 Parts of the High Street and Station Road can be defined as street canyons (sections where there are continuous buildings on both sides and the height of buildings on both sides of the road is greater than the road width).

25 It has been perceived that the causes of nitrogen dioxide exceedences along the High Street and Station Road can be attributed to:

- Street canyon effects in parts of Station Road and High Street;
- Busy junction of High Street and Station Road;
- Stationary traffic in both roads;
- High percentage of Heavy Goods Vehicles in traffic composition.

Monitoring results

26 The details of NO_2 diffusion tube monitoring in Addlestone are provided in **Table 2.2**, with current site locations shown in **Figure 2.1**.

27 Results from the Addlestone diffusion tube monitoring survey in 2010-2011 are shown in **Tables 2.3** and **2.4**. The annual mean concentrations above 40μg/m^3 were marked in bold.

28 All sites within the AQMA exceeded the annual mean objective for NO_2 in 2010 and 2011, apart from RY11, which showed the annual mean of 39.3 μg/m^3 in 2011.

29 The 2011 results from site RY13 **(Figure 2.1)** showed that the Addlestone AQMA could be extended at its northern boundary at the High Street to cover the area up till Green Lane roundabout. The site RY43 was added in April 2013 to investigate NO_2 levels north along Chertsey Road.

Table 2.2 Monitoring within Addlestone AQMA and surrounding areas

	Site	Comment / Recommendation
Addlestone AQMA	RY1 RY14 RY15	▪ The 2010-2012 results from sites RY1, RY14 and RY15 confirmed that the original designation of the AQMA was still valid.
Areas adjacent to Addlestone AQMA	RY13 RY16 RY17 RY41 RY43 RY44	▪ The sites RY13 and RY15, both initially located within the AQMA, were moved to locations further along the roads from January 2011 to verify the AQMA boundaries (site RY15 still remaining within the AQMA). ▪ The 2011 results from site RY13 showed that the AQMA could be extended at its northern boundary. Subsequently, diffusion tube monitoring started at site RY43 in April 2013. ▪ The site RY17 was moved in Jan 2011 from the Addlestone railway crossing to a location along the road considered to have poorer pollution dispersion. ▪ The sites RY41 (urban background) and RY44 were added as a result of a proposal to redevelop Addlestone town centre in August 2012 and March 2013 respectively.

Figure 2-1 Locations of diffusion tubes in Addlestone

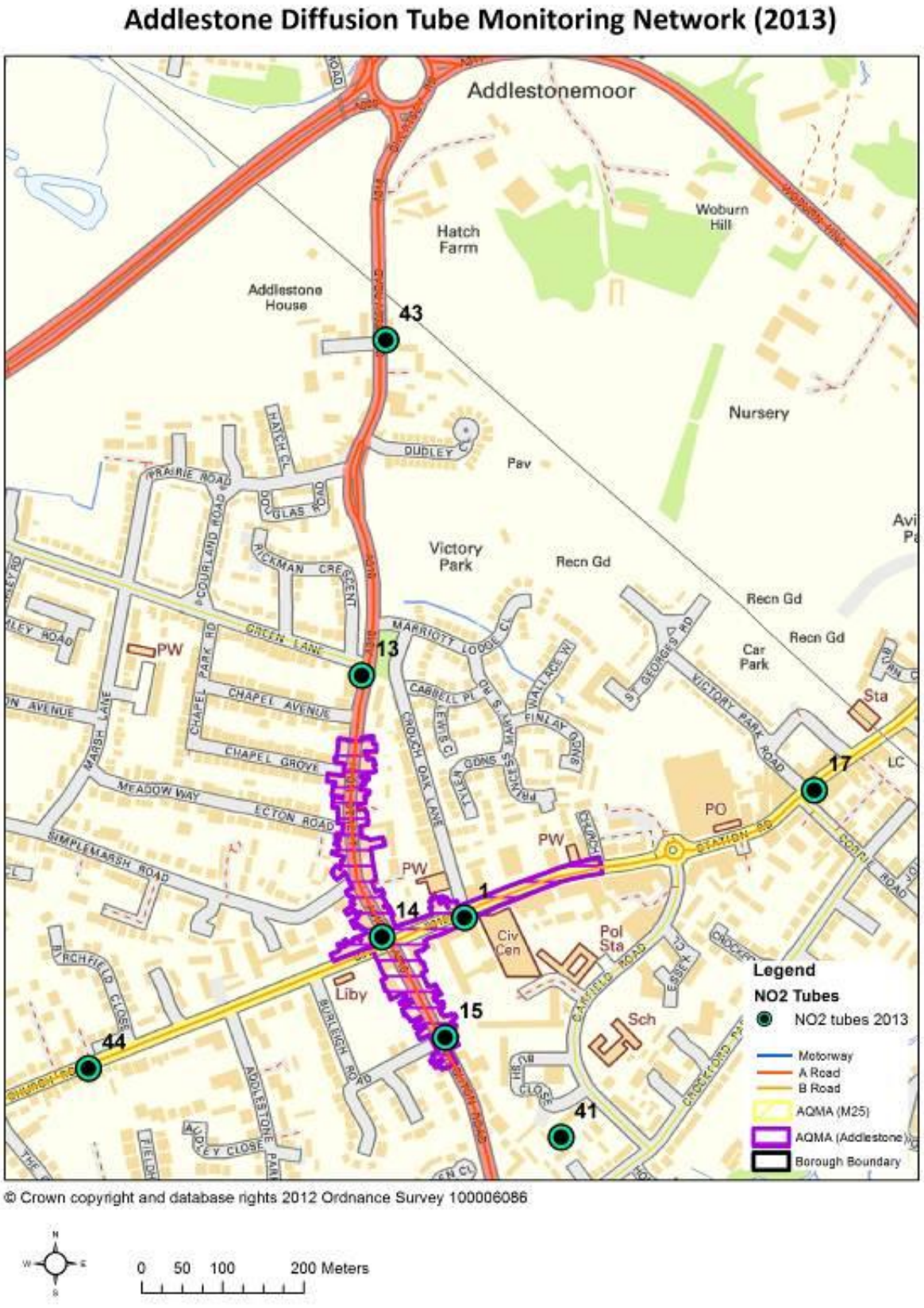


Table 2.3 Results of Nitrogen Dioxide Diffusion Tubes in 2010

Site ID	Location	Site Type	Within AQMA?	Data Capture 2010 (Number of Months or %)[b]	Data with less than 9 months has been annualised[c] (Y/N)	Confirm if data has been distance corrected (Y/N)	Annual mean concentration (Bias Adjustment factor = 1.06) 2010 ($\mu g/m^3$)	Comments
RY1	Civic Centre, Station Road, Addlestone	Roadside	**Y**	91.7	N	N	**46.3**	RY1 is a long-term site, which has been in operation since 1990s. The results confirm the validity of the AQMA.
RY13	44 High Street, Addlestone	Roadside	**Y**	100.0	N	N	**52.9**	Results confirm the validity of the AQMA. In Jan 2011 the site was moved further along the road to verify the AQMA boundaries.
RY14	1 Church Road, Addlestone	Roadside	**Y**	100.0	N	N	**59.0**	Results confirm the validity of the AQMA. The site represents the worst-case location within the AQMA.
RY15	1-16 Dukes Court, Brighton Road, Addlestone	Roadside	**Y**	91.7	N	N	**46.4**	Results confirm the validity of the AQMA. In Jan 2011 the site was moved further along the road to verify the AQMA boundaries.
RY16	116 Station Road, Addlestone	Roadside	N	83.3	N	N	38.5	The annual mean concentration at the nearest receptor was estimated at 36.4 $\mu g/m^3$. The site was closed in Jan 2011.
RY17	Railway crossing, Station Road, Addlestone	Roadside	N	100.0	N	N	30.7	In Jan 2011 the site was moved to a location considered to be worst-case.

[b] i.e. data capture for the full calendar year (e.g. if monitoring was carried out for six months the maximum data capture for the full calendar year would be 50%.)
[c] Means should be "annualised" as in Box 3.2 of TG(09), if monitoring was not carried out for the full year.

Table 2.4 Results of Nitrogen Dioxide Diffusion Tubes in 2011

Site ID	Location	Site Type	Within AQMA?	Data Capture 2011 (Number of Months or %)[b]	Data with less than 9 months has been annualised[c] (Y/N)	Confirm if data has been distance corrected (Y/N)	Annual mean concentration (Bias Adjustment factor = 1.06) 2011 (μg/m^3)	Comments
RY1	Civic Centre, Station Road, Addlestone	Roadside	**Y**	100.0	N	N	**42.2**	RY1 is a long-term site, which has been in operation since 1990s. The results confirm the validity of the AQMA.
RY13	1-22 Wyvern Place, High St, Addlestone	Roadside	Y	83.3	N	N	**49.3**	Results confirm that the AQMA could be extended at its northern boundary.
RY14	1 Church Road, Addlestone	Roadside	Y	100.0	N	N	**60.4**	Results confirm the validity of the AQMA. The site represents the worst-case location within the AQMA.
RY15	23 Brighton Rd, Addlestone	Roadside	Y	83.3	N	N	**39.3**	Results confirmed the validity of the AQMA southern boundary.
RY17	158 Station Rd, Addlestone	Roadside	N	83.3	N	N	35.7	The site did not exceed the annual mean objective, however should be retained as new development was constructed at the railway station in Addlestone in December 2012.

[b] i.e. data capture for the full calendar year (e.g. if monitoring was carried out for six months the maximum data capture for the full calendar year would be 50%.)
[c] Means should be "annualised" as in Box 3.2 of TG(09), if monitoring was not carried out for the full year.

Source apportionment

30 Source apportionment for nitrogen oxides in Addlestone AQMA was carried out according to Guidance TG(09), Box 7.1. Road traffic has been identified to be the primary contributor of nitrogen dioxide within the AQMA (58% and 60% for 2008 and 2011 respectively), as shown in **Table 2.5** and **Table 2.6**.

Table 2.5 Total annual mean nitrogen oxides concentrations split by source type at 1A High Street, 2008

	Annual mean NO_x [µg/m^3]	NO_x [%]	Annual mean NO_2 [µg/m^3]	NO_2 [%]
Total modelled concentration at 1A High Street	147.0	100	57.1	100
Total background concentration[1]	37.0	25	23.8	42%
Regional background concentration[1]	10.3	7	6.6	12%
Local background concentration	26.7	18	17.2	30%
Local traffic contribution to total concentration at 1A High Street	110.0	75	33.3	58%

[1] Source: Defra's national maps of background annual mean concentrations for grid square (**505500, 164500), 2008**

Table 2.6 Total annual mean nitrogen oxides concentrations split by source type at 1A High Street, 2011

	Annual mean NO_x [µg/m3]	NO_x [%]	Annual mean NO_2 [µg/m3]	NO_2 [%]	Reduction required for compliance with NO_2 objective (%)
Total modelled concentration at 1A High Street	108.4	100	49.8	100	- 19.7%
Total background concentration[1]	29.7	27	20.0	40	
Regional background concentration[1]	8.6	8	6.0	12	
Local background concentration	21.1	19	14.0	28	
Local traffic contribution to total concentration at 1A High Street	78.7	73	29.8	60	

[1] Source: Defra's national maps of background annual mean concentrations for grid square (**505500, 164500), 2011**

31 On the basis of available traffic data provided by Surrey County Council, HGV vehicles are assumed to represent 4-5% of the traffic flows in the AQMA. Assuming there were 5% of HGVs in the traffic flow in 2008, this category of vehicles was found through dispersion modelling (2010 Further Assessment report, **Table 2.7** below) to be contributing over 47% of traffic related NO_x in 2008 (and over 53% in 2011). This amounts to 52.1 µg/m^3 of nitrogen oxides in 2008 and 42.1 µg/m^3 in 2011 (**Table 2.8**).

Table 2.7 Percentage road NO_x contribution by vehicle type: 5% HGV in traffic flow.

Area modelled / Pollutant	2008 total emission rate [g/km/s]	2008 LGV emissions contribution [%]	2008 HGV emissions contribution [%]	2011 total emission rate [g/km/s]	2011 LGV emissions contribution [%]	2011 HGV emissions contribution [%]
Average NO_x contribution	0.1335	52.6	47.4	0.0899	46.5	53.5
Average PM_{10} contribution	0.0087	77.2	22.8	0.0080	79.8	20.2

Table 2.8 Source apportionment: relative contributions of road source NO_x (5% HGV in traffic flow)

Site ID	2008 LGV NO_x contribution [µg/m^3]	2008 HGV NO_x contribution [µg/m^3]	2011 LGV NO_x contribution [µg/m^3]	2011 HGV NO_x contribution [µg/m^3]
1A High Street	57.9	52.1	36.6	42.1

2.2.4 AQMA along the M25

Area description

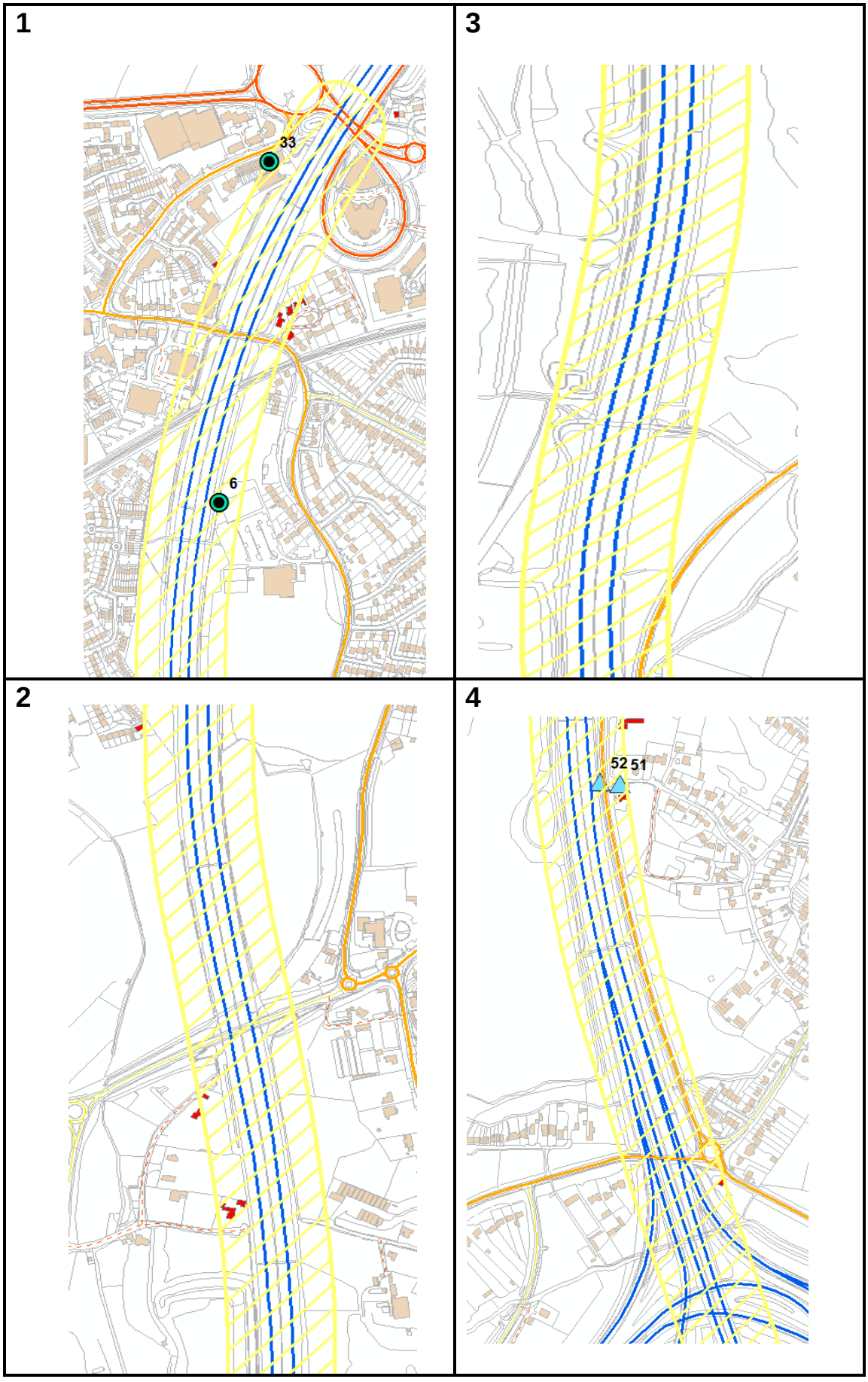
32 The AQMA along the M25 consists of the following areas (**Figure A1** in **Appendix A**):

- **Area 1** – north of junction 11 - extending 70 m east and west of the centre line of the M25 between Junction 11 and the borough northern boundary at Egham;
- **Area 2** – south of junction 11 - extending 55m east and west of the centre line of the M25 between Junction 11 and the southern boundary of the borough at New Haw/Byfleet.

33 Photographs of the M25 traffic at mid-day can be seen in **Figure A2** in **Appendix A**.

34 It should be noted that there are relatively few sensitive receptors within the area declared as the M25 AQMA (40 residential properties as compared to 174 residential addresses registered within Addlestone AQMA). **Figure 2.2** below shows the locations of both residential receptors and NO_2 diffusion tube sites within the M25 AQMA.

Figure 2-2 Locations of diffusion tubes within M25 AQMA



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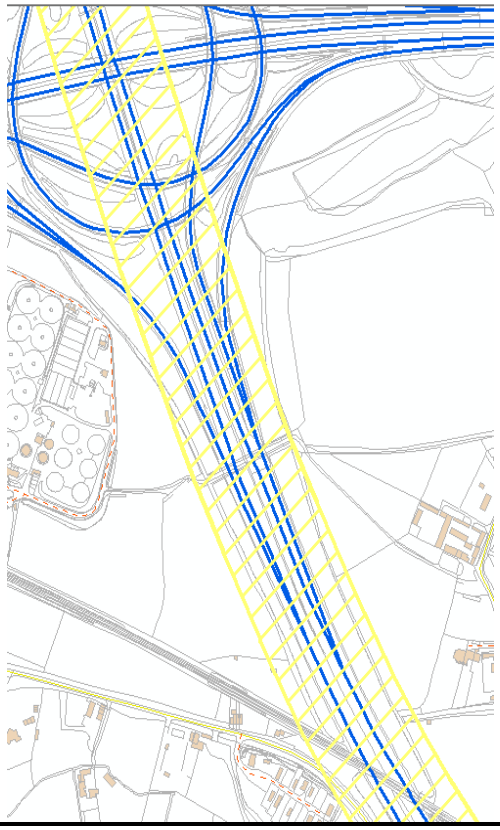

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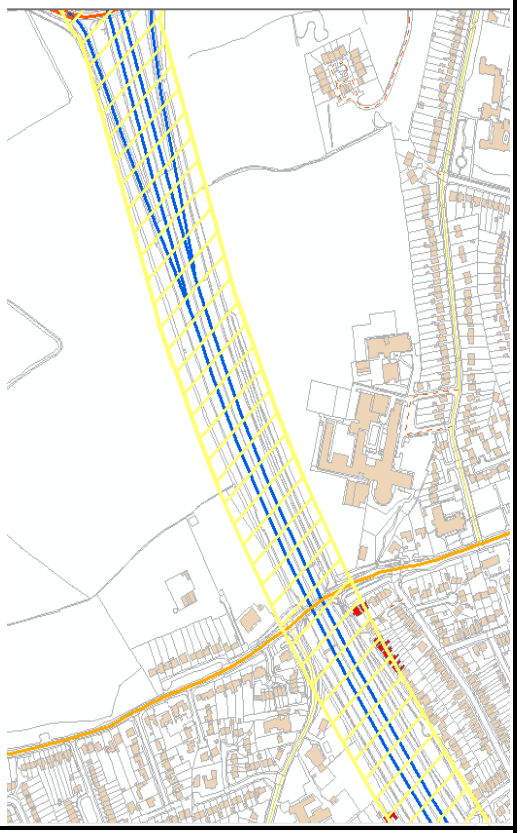

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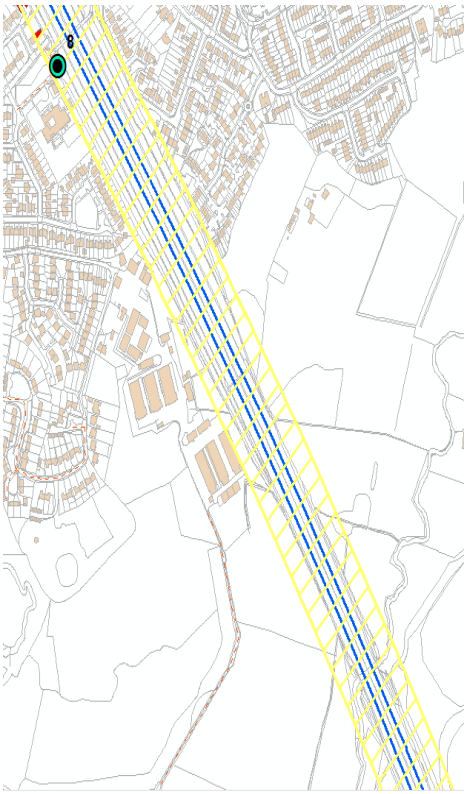
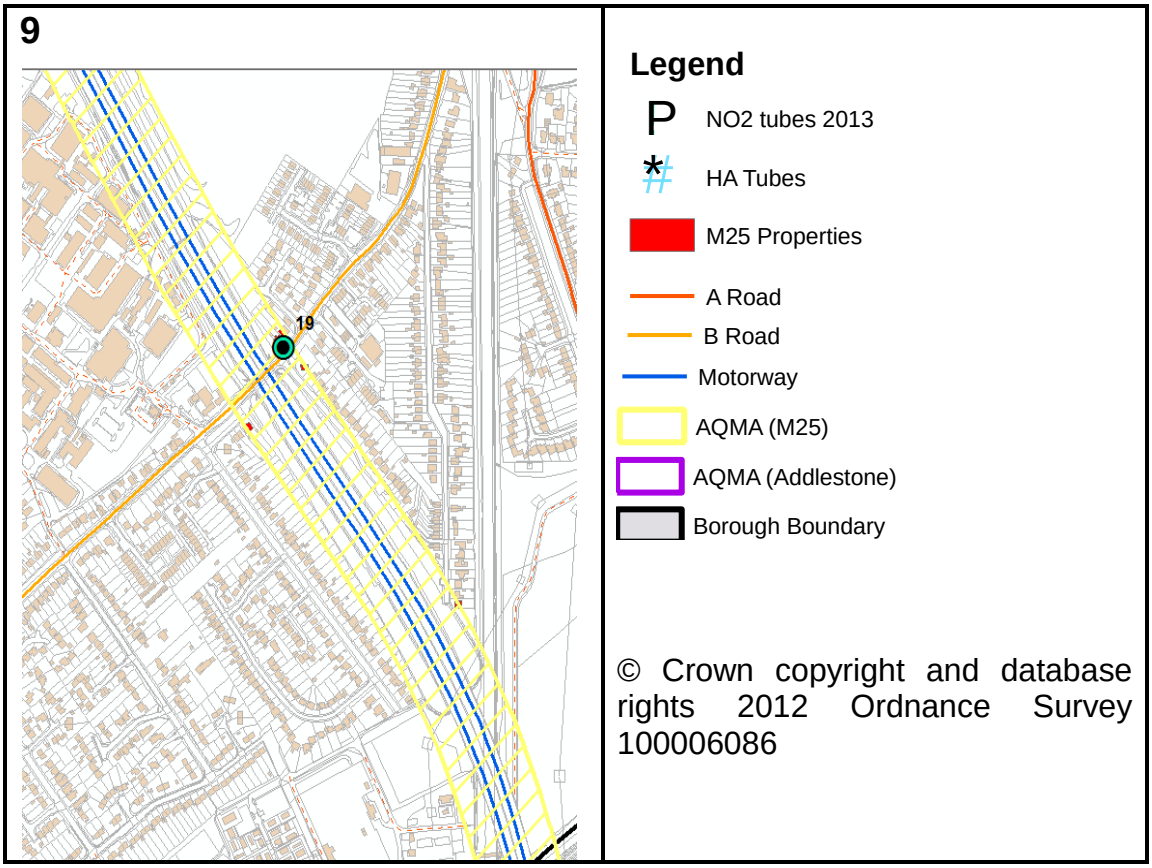




Monitoring results

35 The details of NO_2 diffusion tube monitoring along the M25 are provided in **Table 2.9** and the results from the diffusion tube monitoring survey in 2010-2011 are shown in **Tables 2.10 and 2.11.** The annual mean concentrations above 40 μg/m^3 were marked in bold.

36 The sites which exceeded the annual mean objective for NO_2 in 2010 and 2011 within the M25 AQMA were sites RY6 (approximately 11 m from the edge of the M25) and RY19 (approximately 30 m from the edge of the M25).

37 The site RY8 (approximately 25 m from the edge of the M25) stayed well below the objective, however the monthly results for summer months (2010-2011) at the site were significantly lower than those from the winter months, which cannot be attributed merely to seasonal variation. The tube is surrounded by vegetation, which may reduce dispersion. Also, earwigs had been found in the tubes on occasions during the summer months.

38 Particulate matter (PM_{10}) concentrations are considered to be below the objectives at all sites across the Borough, therefore, it was proposed in the 2012 Updating and Screening Assessment to proceed to a Detailed Assessment for the areas of the existing AQMA along the M25 to investigate the potential revocation of the existing M25 AQMA for PM_{10}.

Table 2.9 Monitoring along the M25

	Site	Comment / Recommendation
M25 AQMA	RY6 RY8 RY19 RY33	The 2010-2012 results from sites RY6, RY19 and RY33 confirmed that the original designation of the AQMA was still valid.

Table 2.10 Results of Nitrogen Dioxide Diffusion Tubes in 2010

Site ID	Location	Site Type	Within AQMA?	Data Capture 2010 (Number of Months or %)[b]	Data with less than 9 months has been annualised[c] (Y/N)	Confirm if data has been distance corrected (Y/N)	Annual mean concentration (Bias Adjustment factor = 1.06) 2010 (µg/m^3)	Comments
RY6	Egham Sports Centre, Vicarage Road, Egham	Roadside	Y	58.3	Y	N	41.6	RY6 is a long-term site, which has been in operation since 1990s. The results confirm the validity of the AQMA.
RY8	Ongar Place First School, Milton Road, Addlestone	Roadside	Y	100.0	N	N	32.2	RY8 is a long-term site, which has been in operation since 1990s. The results have complied with the annual mean NO_2 objective, however stayed significantly lower in the summer months, which may be due to the site being surrounded by vegetation.
RY19	78 Woodham Lane, New Haw	Roadside	Y	100.0	N	N	45.9	The site is located within the M25 AQMA. The results at sites RY6 and RY19 confirmed that the original designation of the M25 AQMA was still valid.

[b] i.e. data capture for the full calendar year (e.g. if monitoring was carried out for six months the maximum data capture for the full calendar year would be 50%.)
[c] Means should be "annualised" as in Box 3.2 of TG(09), if monitoring was not carried out for the full year.

Table 2.11 Results of Nitrogen Dioxide Diffusion Tubes in 2011

Site ID	Location	Site Type	Within AQMA?	Data Capture 2011 (Number of Months or %)[b]	Data with less than 9 months has been annualised[c] (Y/N)	Confirm if data has been distance corrected (Y/N)	Annual mean concentration (Bias Adjustment factor = 1.06) 2011 (µg/m^3)	Comments
RY6	Egham Sports Centre, Vicarage Road, Egham	Roadside	Y	100.0	N	N	42.9	RY6 is a long-term site, which has been in operation since 1990s. The results confirm the validity of the AQMA.
RY8	Ongar Place First School, Milton Road, Addlestone	Roadside	Y	75.0	N	N	24.4	RY8 is a long-term site, which has been in operation since 1990s. The results have complied with the annual mean NO_2 objective, however stayed significantly lower in the summer months, which may be due to the site being surrounded by vegetation.
RY19	78 Woodham Lane, New Haw	Roadside	Y	100.0	N	N	45.4	The site is located within the M25 AQMA. The results at sites RY6 and RY19 confirm that the original designation of the M25 AQMA is still valid.
RY33	46 The Avenue, Egham	Roadside	Y	83.3	N	Y	37.6	Site representative of relevant exposure, within AQMA. Results confirm the validity of the AQMA.

[b] i.e. data capture for the full calendar year (e.g. if monitoring was carried out for six months the maximum data capture for the full calendar year would be 50%.)
[c] Means should be "annualised" as in Box 3.2 of TG(09), if monitoring was not carried out for the full year.

Source apportionment

39 Having declared the M25 AQMA, a further assessment was produced in 2003 (termed the "Stage 4 Assessment"). This was undertaken to determine the relative contribution of the different sources of pollution. This further review and assessment 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 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.

40 The pollutants under investigation, i.e. NO_2 and PM_{10}, also complicate the understanding of source apportionment. For NO_2, to understand the different sources it is necessary to examine the contribution of oxides of nitrogen (NO_x) from combustion sources, because NO_2 is mostly a secondary pollutant, formed as a result of complicated atmospheric chemistry from NO_x. For PM_{10} 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 PM_{10}, which is averaged over a longer timescale and therefore less affected by specific events.

41 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 NO_2 is the more stringent of the two standards that are exceeded. Hence the area where the PM_{10} standard is exceeded is smaller than the area where the NO_2 standard is exceeded. For both pollutants only small areas containing few sites of relevant exposure were identified.

42 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 C**).

43 In order to meet the air quality standards it will be necessary to further reduce overall concentrations of NO_2 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.

44 Source apportionment work for PM_{10} 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 NO_2, are negligible. Optimising vehicle speeds to 80kph (50 mph) and reducing HGVs by 10% could result in meeting the PM_{10} standard.

45 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.

46 For PM_{10} the contributions from heavy goods vehicles exceeded that of cars, and for all locations the contribution from cars exceeded that of buses. The background PM_{10} contribution at all locations was predicted as being almost constant (approximately 21 $\mu g/m^{-3}$).

47 In conclusion 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.

2.3 Travel Patterns in Runnymede

Car ownership

48 Car ownership within the Borough is higher than the average for England, with 85% of households having one or more cars available and 45% having two or more cars[28] (**Table 2.12**). Such high car ownership may account for low usage of public transport. At the same time it is beneficial that residents have access to a car when commuting to/from more remote areas.

Table 2.12 Car ownership in Runnymede[29]

Car Ownership, 2001[1]	Runnymede	South East	England
Number of households	**32,714**	3,555,463	22,063,368
Households with no car	15%	19%	26%
Households with 1 car	41%	42%	42%
Households with more than 1 car	44%	40%	32%
Number of cars per household	1.5	1.4	1.2

Travel mode

49 Travel to work data (compiled from 2011 Census tables of 'Method of Travel to Work') showed (unsurprisingly) that nearly 70% of Runnymede residents (aged 16 to 74) used a car to commute to work (either as driver or passenger). The preferred mode of travel for residents who used public transport to commute to work was a train (9%). Only 2% of residents used a bus or coach[30] (**Table**

[28] 2011 Census: Key Statistics - Car or Van Availability, 2011 (KS404EW).
[29] 2011 Census: Key Statistics - Car or Van Availability, 2011 (KS404EW).
[30] 2011 Census: Key statistics and quick statistics for wards and output areas in England and Wales.

2.13). Relatively high number of residents using the train may be due to the fact that 22% of those who worked in London chose to commute by train (**Table 2.16**).

50 According to the available travel flow (origin-destination) data sourced from 2001 Census[31], majority of Runnymede residents (aged 16 to 74) worked in the South East (76%) and London (22%) –**Table 2.15**. Only a low percentage (1-2%) used either a bus or train to travel to a workplace within the Borough or in the South East (**Table 2.16**). Although 22% residents used a train to commute to London (as compared with 1-2% for those who worked in Runnymede or the South East) the vast majority (74%) still commuted to London by car.

51 Although 34% of residents travelled less than 5km to reach their workplace (**Table 2.14**), not many walked or cycled to work (21% of residents working in Runnymede walked or cycled to work (**Table 2.16**).

52 High reliance on the car among the working population in the Borough may imply that the Car remains a cheaper mode of transport than bus or train; is a more convenient and flexible mode of transport and that the affordability and convenience of using public transport is low.

53 Those residents who work about 10 miles (36%) from home could possibly be encouraged to use public transport more often if it was cheaper and more convenient (more frequent, better routes).

54 Those residents who use the car to travel 1-3 miles (34%) could possibly walk/cycle more often through the provision of dedicated cycling lanes etc.

Table 2.13 Method of travel to work (2011 Census)[32]

Travel mode	Percentage of residents
Driver or Passenger (car/van/taxi/motorcycle)	69 %
Work at/ from Home	6 %
Walk	10 %
Train	9 %
Bicycle	3 %
Bus or coach	2 %
Other	1 %

Table 2.14 Distance travelled to work (2001 Census)[33]

Distance travelled to work:	Percentage of residents
Work at/ from Home	9%
Less than 2 km	18%
2-5 km	16%
5-10 km	19%
10-20 km	17%
Over 20 km	20%

[31] 2011 Census travel flow data are scheduled for issue between July to Oct 2013.
[32] NOMIS, 2011 Census - UK Travel Flows (Local Authority)
[33] 2001 Census – Census Area Statistics (Distance Travelled to Work – Workplace Population)

Table 2.15 Work locations of Runnymede residents (2001 Census)[34]

Area of Residence: Runnymede					
Area of workplace:					
South East	76%	London	22%	Rest of UK and offshore/abroad	2%
Runnymede	43%				
Bracknell Forest	1%				
Elmbridge	8%				
Epsom & Ewell	-				
Guildford	2%				
Mole Valley	1%				
Reigate & Banstead	-				
Slough	2%				
Spelthorne	7%				
Surrey Heath	2%				
Tandridge	-				
Windsor & Maidenhead	2%				
Waverley	-				
Woking	5%				
Other districts	4%				

Table 2.16 Method of travel to work (2001 Census)[35]

Travel mode	**Workplace within Runnymede**	**Workplace within South East**	**Workplace in London**
Driver or Passenger (car/van/taxi/motorcycle)	54%	69%	74%
Work at/ from Home	22%	12%	-
Walk	16%	10%	-
Train	1%	2%	22%
Bicycle	5%	4%	1%
Bus or coach	1%	1%	1%
Underground	-	-	1%
Other	1%	-	-

Accessibility

55 The results of the initial accessibility modelling analysis of Surrey Local Transport Plan (LTP2) indicated that 61% of Surrey's population lives within 20 minutes travel by public transport of a major town centre, and a further 35% of people live within 40 minutes, therefore less than 4% of people live over 60 minutes from their nearest major town centre (LTP2, Annex 2).

Road capacity/ congestion

56 Congestion problems in Surrey can be linked to the following factors (LTP2, Chapter 3):

- High level and density of population,
- Development patterns and household characteristics,
- Car availability
- Economic development and patterns of journeys to work
- The county's proximity to London and two major international airports

[34] 2001 Census - UK Travel Flows (Local Authority)
[35] NOMIS, 2001 Census - UK Travel Flows (Local Authority)

- Relatively low cost of car travel, compared with public transport fares,
- Parking availability and cost.

57 HGV freight also adds to congestion problems experienced in the town centres as the only way of access to local business and industrial areas is often through town centres or residential areas.

58 The peak travel times on the A and B type roads in Surrey on weekdays are morning at 0700 – 0900 hours and afternoon at 1600 – 1800 hours (when the majority of people travel to, and from, work or school[36].

59 Traffic flows on A and B roads in Runnymede have been decreasing over the recent years, whereas traffic on Surrey's motorways has been steadily increasing[37].

60 Many A and B type roads in Runnymede remain congested despite the fact that traffic (vehicle numbers) has been decreasing.

3 POLICY CONTEXT

1 This chapter sets out the national, regional and local policy context for air quality management, including actions that Runnymede Borough Council is currently taking and/or intending to take to improve air quality in the Borough.

3.1 Air Quality Action Plan in View of National Policies

2 On a national scale, air pollutant concentrations are managed through legislation, and/or non-regulatory measures such as financial incentives.

3 Mechanisms introduced to control emissions include:

1 Systems to ensure compliance with vehicle emission standards (penalties, statutory compliance);
2 Incentives to use cleaner fuels and vehicles through duty differentials;
3 Road improvements by Highways Agency;
4 Schemes which restrict or exclude less clean vehicles from some roads or areas (e.g. low emission zones);
5 Schemes to reduce road congestion;
6 Development control through planning system.

3.1.1 The Air Quality Strategy

4 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. 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 again reviewed and updated in 2007.

[36] SCC (2008) Transport Statistics for Surrey: Movement Monitoring Report 2007/8.
[37] SCC (2008) Transport Statistics for Surrey: Movement Monitoring Report 2007/8.

5 The 2007 Air Quality Strategy for England provides the Government's policy framework for air quality management and assessment in the UK. It identifies air quality standards and objectives for key air pollutants which are designed to protect health and the environment and sets out measures for their achievement. The overall purpose of the AQS is to seek improvements in air quality for the benefit of public health.

6 Current air quality policies already in place include the following measures: duty incentives for cleaner fuels (e.g. ultra low sulphur petrol/diesel) and vehicles; compulsory EU emission standards for all new models of cars; annual emission checks as part of MOT testing.

7 The new policies introduced by the AQS include: incentivising the early uptake of new tighter European vehicle emissions standards; increased uptake of low emission vehicles; reducing emissions from shipping.

3.1.2 Local Air Quality Management

8 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, where the first step is an Updating and Screening Assessment to identify risks, followed by a Detailed Assessment to determine the likelihood of an air quality objective being exceeded.

9 Air quality objectives have been set for those air pollutants deemed to be of most concern and seven of these are included under LAQM. 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.

10 There is no legal obligation on local authorities to achieve the prescribed air quality objectives as so many sources of emissions are outside local authority control. However, under the Environment Act 1995, local authorities have a duty to work towards improved air quality. It is required that after declaring an AQMA, a local authority prepares a remedial Air Quality Action Plan (AQAP) to improve air quality in that area. An Action Plan will provide a quantification of the source contributions to the exceedences of the relevant objectives, evidence that all available options have been considered, and a plan of how the local authority will use its powers in pursuit of the air quality objectives.

11 Defra recently (2013) undertook a review of LAQM [38] with the aim to increase its effectiveness (**Table 3.1**). The proposed changes were presented as four options, summarised per aim as:

1 Business as usual with limited changes;
2 Concentration on Action Planning and focuses reporting;
3 Alignment with EU requirements to meet air quality limit values;
4 Separate local air quality management duties do not exist.

[38] Defra Local air quality management review December 2013 available at www.gov.uk

12 A consultation on the above options took place in August 2013 and the Government's response was published in December 2013. Neither option gained majority support, with many respondents calling for an alternative that would combine the best elements of each option, in particular Options 1 and 2 or putting forward different proposals. All alternatives will be analysed in early 2014 and this will inform a second consultation in mid-late 2014 on regulatory changes and guidance.

Table 3.1 LAQM review aims and next steps to follow the review

Aims	Next steps for the Government
Aim 1 Local Action focused on what is necessary to support air quality improvements to benefit public health and to work towards EU air quality standards.	Defra will review the range of air quality objectives that apply to local authorities, taking into account the relevance of these objectives for health protection, and the levels assessed in recent years.
Local government and other stakeholders are clear on their roles and responsibilities and work together to improve air quality.	Defra will review the need for additional guidance on these duties as part of its review of guidance to local authorities in fulfilling their duties under the Act.
Aim 3 Local authorities have simple reporting requirements with less bureaucracy and more time to concentrate on actions to improve air quality and public health.	Defra will make proposals to introduce regular annual reporting on air quality for local authorities, taking into account comments made and following further discussions with stakeholders on the content of such reports.
Aim 4 Local authorities have access to information about evidence based measures to improve air quality, including on transport and communications.	Defra will continue to explore (with delivery partners and stakeholders) way of improving and disseminating evidence-based measures, including supporting innovative schemes. We will revise official guidance to coincide with the implementation of changes to the LAQM system, likely in mid-late 2015.

3.1.3 National Planning Policy Framework (NPPF)

13 The National Planning Policy Framework (2012) emphasises the importance of AQAPs in development control. Developments in AQMAs need to be consistent with AQAPs[39]:

'[…]. Planning decisions should ensure that any new development in Air Quality Management Areas is consistent with the local air quality action plan'.

14 The NPPF also puts emphasis on the cumulative impacts of development on local air quality, in stating that:

'Planning policies should sustain compliance with and contribute towards EU limit values or national objectives, taking into account... cumulative impacts on air quality from individual sites[40]'.

[39] Section 124 of the NPPF.
[40] Section 124 of the NPPF.

3.1.4 The Health and Social Care Act 2012

15 The Public Health Outcomes Framework[41] is focused on two outcomes that set the vision for the public health system:

- Increased healthy life expectancy, which takes account of the health quality as well as the length of life;
- Reduced differences in life expectancy and healthy life expectancy between communities (through greater improvements in more disadvantaged communities).

16 A set of supporting public health indicators has been developed to monitor progress on an annual basis. These indicators are grouped into four areas (domains):

- Improving the Wider Determinants of Health;
- Health Improvement;
- Health Protection;
- Healthcare Public Health and Preventing Premature Mortality.

17 The Health and Social Care Act 2012 gave upper tier and unitary local authorities the duty to "take such steps as it considers appropriate for improving the health of the people in its area".This responsibility for Health improvement includes giving information, providing services or facilities to promote healthy living and providing incentives to live more healthily. Local authorities were also delegated some health protection functions by the Secretary of State.

18 In two-tier local authorities, achieving improvements across the Public Health Outcomes Framework Indicators will depend upon the delivery of district frontline statutory and discretionary services. Environmental Health services of district councils will support the delivery of health protection measures - protecting communities from environmental hazards and pollution, which includes air pollution. The air quality indicator for the domain of Health Protection has been set as 'fraction of mortality attributable to particulate air pollution'.

3.1.5 Climate change and air pollution

19 National policy recognises that greenhouse gases and air pollutants often originate from the same activities, for example transport or industrial processes. Implementation of measures to tackle air pollution alone has proven to be costly. The aim is to look at co-benefits for both air quality and climate change. Joint action leading to reductions in both greenhouse gas and air polluting emissions would be much more cost effective as many policy choices mitigating climate change impacts will also result in additional air quality benefits[42]. For instance, measures to improve energy efficiency and cut energy demand will also reduce air pollutants that are produced during electricity generation.

20 It should be noted that some measures or technologies will reduce one type of emissions while having a negative effect on the other. For example, gas fuelled CHP systems while reducing carbon emissions by generating heat and power simultaneously, can also elevate nitrogen oxide emissions as they are using more fuel than separate heat and power systems.

[41] Department of Health Public Health Outcomes Framework 2013-2016
[42] Environmental Protection UK (2011) *Air Quality and Climate Change: Integrating Policy within Local Authorities*.

21 The 2007 Air Quality Strategy recommends that integrated approach to tackling both climate change and air pollution be adopted in developing of AQAPs and, where appropriate, Local Transport Plans.

3.2 Regional and County Policies

3.2.1 Revocation of South East Plan

22 Until very recently, local plans were required to 'have regard to national policies and to be in general conformity' with the Regional Spatial Strategies (RTS)[43]. The Regional Spatial Strategy for the South East of England was called the South East Plan (SEP), published in May 2009.

23 In July 2010 the new Coalition Government announced its intention to abolish Regional Spatial Strategies in the Localism Bill (2010) with the aim of giving more control over housing and planning decisions to local communities. However, after a successful challenge by housing developer CALA Homes, regional strategies were re-established as part of the development plan in November 2010. At the same time, it was ruled by the High Court that the intended scrapping of Regional Strategies was a 'material consideration' which could be considered by local planning authorities and planning inspectors when making decisions.

24 The South East Plan was eventually revoked in March 2013 except for Policy NRM6 (Thames Basin and Heaths Special Protection Area) of the document which relates to new residential development close to the Thames Basin Heaths Special Protection Area.

25 Selected policies of the Plan have been retained in this Section to allow comparison with the respective policies of Runnymede draft Local Plan 2013.

26 Under the housing provisions of the South East Plan, local planning authorities in the South East would allocate sufficient land and facilitate the delivery of 654,000 net additional dwellings between 2006 and 2026. This objective was split into individual local authorities. Runnymede was assigned the target of providing 5720 new dwellings over the period of 20 years (2006-2026), which equals to the average of 286 new dwellings per year.

27 Specifically, the SEP directed 2,500 of the new dwellings to the former DERA site at Longcross, Virginia Water. Redevelopment of the DERA site was to undergo a formal assessment of environmental impacts, with the aim to establish the appropriate scale, mix of uses and mitigation measures for the proposed development. The development was given a timescale of between 2016 and 2026. If during the assessment process it transpired that the site could not be released for housing, the shortfall was not expected to be provided elsewhere within Runnymede.

28 The transport chapter of the Plan forms the Regional Transport Strategy for South East England to 2026 and sets out 14 policies for the development of the transport system in the region. Together they seek to[44]:

- Facilitate urban renaissance and foster social inclusion by re-balancing the structure and use of the transport system. In particular, bringing forward measures that encourage modal shift to more sustainable modes and significantly improve the attractiveness of local public transport services, walking and cycling;

[43] ODPM (2005) *The Planning System: General Principles.*
[44] GOSE (2009) *The South East Plan. Regional Spatial Strategy for the South East of England.*

- Reduce the wider environmental, health and community impact associated with the transport system, by bringing forward management measures that reduce our reliance on single occupancy car use;
- Maintain the existing transport infrastructure as an asset;
- Develop road and rail links that improve inter and intra-regional connectivity;
- Improve and develop transport connections to the region's international gateways (ports, airports and international rail stations).

29 Selected transport policies of the SEP that will have air quality implications **Table 3.2.**

Table 3.2 Selected transport policies of the abolished South East Plan

Policy	Details
MANAGE AND INVEST (T1)	▪ Influencing the pattern of activities and specifically new development, so that more people have the opportunity to work and shop etc. closer to their home location. ▪ Seeking greater utilisation of capacity on the existing transport system, e.g. more active management of the road network and intelligent transport systems, route capacity utilisation. ▪ Managing demand on the transport system, particularly on the road network, e.g. re-allocating capacity, promoting sustainable modes, parking policy, travel planning and possible fiscal measures.
MOBILITY MANAGEMENT (T2)	▪ The policies and proposals set out in local development documents and local transport plans should include policies to achieve a rebalancing of the transport system in favour of sustainable modes based on an integrated package of measures drawn from the following: - the allocation and management of highway space used by individual modes of travel; - the scale of provision and management (including pricing) of car parking both off and on-street; - the scope and management of public transport services; - an integrated and comprehensive travel planning advice service; - improvements in the extent and quality of pedestrian and cycle routes charging initiatives; - intelligent transport systems including the use of systems to convey information to transport users; - incentives for car sharing and the encouragement of car clubs; - local services and e-services to reduce the need to travel changes in ways of working that alter the extent and balance of future demand for movement; - demand responsive transport and other innovative solutions that increase accessibility measures that increase accessibility to rail stations.
CHARGING (T3)	▪ Using the powers available under the Transport Act 2000 and Local Transport Act 2008, and Government funding, to test new charging initiatives. This may be done, where appropriate, jointly with other authorities. Road user charging should be considered as part of an integrated approach to support delivery of the regional strategy. In addition to being consistent with national guidance, any scheme within the region should be matched with promotion of sustainable alternatives to vehicle use, and be designed so as to avoid disadvantaging regeneration areas dependent on road access.
PARKING (T4)	▪ Local development documents and local transport plans should, in combination: - adopt restraint-based maximum levels of parking provision for non-residential developments, linked to an integrated programme of public transport and accessibility improvements; - set maximum parking standards for Class B1 land uses in range 1:30 m2 and 1:100m2; - set maximum parking standards for other non-residential land uses in line with PPG13: *Transpor*t, reducing provision below this in locations with good public transport; - include policies and proposals for the management of the total parking stock within regional hubs that are consistent with these limits; - apply guidance set out in PPS3: *Housing* on residential parking, reflecting local circumstances; - support an increase in the provision in parking at rail stations where appropriate; - ensure the provision of sufficient cycle parking at new developments including secure cycle storage for new flats and houses which lack garages. ▪ Parking policy is currently under review and a consultation has taken place on draft PPS4: *Planning for Sustainable Economic Development*, which allows local authorities to develop their own car parking policies for non-residential development, setting maximum standards based on certain criteria. Overall local authorities are encouraged to seek a level of parking provision that is tighter than that set out in PPG13.
TRAVEL PLANS AND ADVICE (T5)	▪ Local authorities must ensure that their local development documents and local transport plans identify those categories of major travel generating developments, both existing and proposed, for which travel plans should be developed.
COMMUNICATIONS TECHNOLOGY (T6)	▪ Investment in communications technology that increases access to goods and services without increasing the need to travel should be actively encouraged and taken into consideration in identifying future transport needs.

RURAL TRANSPORT (T7)	▪ take a co-ordinated approach to encouraging community-based transport in areas of need ▪ include a rural dimension to transport and traffic management policies, including looking for opportunities to improve provision for cyclists and pedestrians between towns and their nearest villages ▪ develop innovative and adaptable approaches to public transport in rural areas that reflect the particular and longer-term social and economic characteristics of the region.

3.2.2 Climate Change Strategies

30 Two Climate Change Strategies have been produced for Surrey. One forms part of Surrey's third Local Transport Plan completed by the Surrey County Council in April 2011. Further details of the Surrey County Council's Climate Change Strategy are provided in **Section 3.2.3**. A Climate Change Strategy was also produced by the Surrey Climate Change Partnership (SCCP) in 2009. (As of April 2104 the SCCP is proposing a change of name to the Surrey Energy & Sustainability Partnership). The SCCP Strategy seeks to provide a framework to address climate change across Surrey over the period to 2020. The Strategy was meant to be delivered by the members of the SCCP - all eleven Surrey's district and borough councils and Surrey County Council.

31 The SCCP Strategy has three core objectives:
- Emission reductions;
- Adapting to climate change;
- Raising awareness.

32 Under these three objectives, the Strategy identified a range of Programmes and Deliverables based on key government performance indicators and targets for carbon reduction and climate change adaptation.

Emission reductions

33 The first objective – emission reductions - will be sought in the following areas ('workstreams'):

(1) Existing housing
(2) Business and Public sectors
(3) Land use
(4) Transport
(5) Resource management
(6) Renewable energy

(1) Existing housing – looking at energy efficiency measures

The following are programmes and deliverables developed for this area (workstream):

Workstream: Domestic Energy		
Programme	**Deliverables**	**Good Practice Examples**
Improving housing performance	▪ Deliver programmes for improving efficiency of existing housing stock (insulation, lighting and heating systems)	▪ Warmth 1000– a three year program to tackle 'hard to treat, hard to heat' properties by providing funding to improve energy rating of the houses. ▪ Warmfront – a scheme providing a package of insulation and heating improvements up to the value of £3,500 (or £6,000 where oil, low carbon or renewable technologies are
Promoting innovation	▪ Demonstration projects. ▪ Engagement with housing developers, estate managers.	

Monitoring energy use	▪ Infrared detection. ▪ Free/loan energy meters for residents.	recommended). It is a Government-funded initiative for households on certain income-related benefits living in properties that are poorly insulated and/or do not have a working central heating system.
Providing Guidance to residents	▪ Distribution of guidance. ▪ Media campaigns.	

(2) Business and Public sectors - looking at energy efficiency measures

The following are programmes and deliverables developed for this area (workstream):

Workstream: Public Sector and Business Energy		
Programme	**Deliverables**	**Good Practice Examples**
Local Authority carbon reduction (NI185)	▪ Carbon reduction programme. ▪ Establish internal working group. ▪ Service delivery plans. ▪ Effective metering, monitoring and reporting	▪ Installation of PowerPerfector (Voltage Power Optimisation) equipment in Council buildings. It is a technology that optimises the voltage for electrical equipment so that it can work more efficiently thus saving. ▪ Development of a sustainable energy strategy which incorporates an energy action plan for implementation for Councils ▪ Installation of Smart Metering (Smart meters give accurate information on the quantity of electricity and gas used at monthly, daily or hourly intervals allowing companies to analyse their energy consumption) in Council offices. ▪ Installation of sub-metering again to enable improved energy management across their estate. ▪ Installation of Smart Energy Monitors in office buildings to display instant (real-time) information on gas and electricity consumption to visitors and staff in order to encourage energy saving practices. ▪ Implementing the concept of 'Transition Towns' where communities seek to adopt lower carbon living (Dorking, Farnham). ▪ Making commitments on carbon management – carbon neutral cities, communities or key business activities (through reducing and compensating for unavoidable emissions. Example: Eastleigh BC set up CarbonFREE – an offsetting fund for local partners to support local sustainable energy projects).
Community Engagement	▪ Establish network of community champions. ▪ Co-ordinate and support funding opportunities for community groups to access	
Public sector decision making	▪ Undertake sustainability appraisals for new projects and programmes. ▪ Climate proofing criteria applied to all public sector capital spend through grant conditions.	
Private / public sector engagement	▪ Develop partnership approach with major businesses.	
Guidance for business	▪ Utilise and develop business guidance networks. ▪ Produce guidance for businesses on carbon reduction.	

(3) Land use – new development sustainable planning guidance, promotion of good practice, sustainable design/sustainable construction and adopting land use and management practices to contribute to carbon reductions.

The following are programmes and deliverables developed for this area (workstream):

Workstream: Land Use Planning		
Programme	**Deliverables**	**Good Practice Examples**
Strategic Planning	▪ Co-ordinate mitigation in and between spatial plans. ▪ Target neighbourhoods for increased funding and investment to reduce carbon emissions 'Green Action Zones'	▪ Setting standards for low carbon development through Local Development Frameworks ▪ Development of incentive schemes to raise funds to encourage low

Planning Guidance	▪ Develop county-wide good practice guidance. ▪ Development of a carbon reduction fund to raise funds for investment through low carbon planning requirements	carbon developments. Where low carbon policy is not met by developers they must invest into a pot which will be used to fund large scale renewable projects across the borough. ▪ Provision of green infrastructure (network of green spaces and other environmental features including parks, open spaces, playing fields, woodlands, allotments and private gardens). ▪ Carbon capture initiatives ▪ Biomass energy provision ▪ Travel behaviour change programmes e.g. Smarter Travel Sutton managed by a partnership of the council, TfL and local stakeholders and aimed at boosting the levels of walking, cycling and public transport use.
Land Use and Biodiversity	▪ Evaluate scope for increased carbon capture through land use. ▪ Guidance for land managers.	

(4) Transport – reducing energy use and emissions

The following are programmes and deliverables developed for this area (workstream):

Workstream: Transport		
Programme	**Deliverables**	**Surrey Good Practice Examples**
Transport Planning	▪ Evaluate carbon impacts of transport plans / options	▪ Travel planning, ▪ CO_2 restrictions on lease cars, ▪ Waste fleet mileage and route review to ensure optimum efficiency ▪ Smarter travel team dedicated to introducing initiatives to reduce staff and business mileage within organisations ▪ Cycle demonstration town status within Surrey – providing investment for the improvement of cycle routes and cycle parking in and around Woking over the next few years.
Travel Plans	▪ Produce company green travel plans	
Fleet and Vehicle performance	▪ Enforce restrictions on lease car carbon emissions ▪ Increase environmentally friendly fuel mixes in fleet vehicle use ▪ Fleet mileage mapping exercise	
Public Transport	▪ Launch incentives to promote school buses to reduce car mileage across the County	
Walking and Cycling	▪ Encourage staff to cycle through incentives and improved facilities. ▪ Provide a number of pool bikes and fuel efficient cars	

(5) Resource management – looking at measures to minimise resource use

The following are programs and deliverables developed for this area (workstream):

Workstream: Resource Management		
Programme	**Deliverables**	**Good Practice Examples**
Sustainable Procurement	▪ Develop sustainability procurement policy. ▪ Develop whole life costing procedure for procurement. Engagement programme with the major suppliers.	▪ Sustainable procurement policies, project impact assessments, supplier questionnaires and green purchasing guidance, e.g. Lewisham BC mapped the carbon footprint of its entire supply chain. ▪ Introduction of an initial sustainability appraisal to be undertaken as a
Waste Management	▪ Assess carbon impacts of waste disposal operations ▪ Promote waste minimisation ▪ Energy from waste	

Water Management	▪ Engage with water management industry ▪ Promote water efficiency measures	mandated step in a formal project management process to identify environmental impacts and apply management processes to reduce these.

(6) Renewable energy – through looking at measures to increase renewable energy generation

The following are programs and deliverables developed for this area (workstream):

Workstream: Renewable Energy		
Programme	**Deliverables**	**Surrey Good Practice Examples**
Policy and Planning	▪ Adopt strategy and principles for designing in and retro-fitting where feasible ▪ Assess renewable energy options in strategic plans	▪ Integration of photovoltaic panels within numerous Council buildings. ▪ Setting up local renewable energy partnerships and projects providing advice on renewable energy, grants and feasibility studies. ▪ Biomass and CHP plants.
New development	▪ Undertake feasibility studies on all new development and refurbishment	
Community schemes	▪ Incorporate technologies for generation / distribution where feasible	
Renewables supply chain	▪ Investigate viability and large scale fuel supply	

Adaptation

34 The second of the Strategy's objectives – adaptation to climate change – will consider the following programs and deliverables:

Objective (Workstream): Adaptation		
Programme	**Deliverables**	**Good Practice Examples**
Carbon Management for Schools	▪ Individual school policies and action plans ▪ School travel plans	▪ Checklist for 'climate-proofing' policies and projects of the City of London's Climate Change Adaptation Strategy. ▪ 'Carbon – neutral' design of Redhill first school in Worcester including ground source heating and hot water systems, rainwater system for flushing toilets, mechanical extract ventilation using photovoltaic panels, sustainable drainage system. ▪ Spatial planning decisions taking into account the role of habitat connection and ecological networks as important elements of ecosystem adaptation to climate change.
Facilities Improvement	▪ Participation in eco-schools ▪ Programme of energy audits and advice for schools ▪ Funding mechanism for capital investment ▪ Certification for new schools and refurbishments	
Educational Resources	▪ Teaching programme in schools ▪ Education in public buildings and spaces ▪ Programme for developing educational resources using new media	
Engagement	▪ County-wide engagement programme with schools ▪ School awards / competitions	

Raising awareness

35 The following areas (workstreams) will be considered under the last of the Strategy's objectives – raising awareness:

(1) General public, community, businesses and public sector
(2) Educational settings

(1) General public, community, businesses and public sector

The following are programs and deliverables developed for this area (workstream):

Objective (Workstream): General Public, Community, Businesses and Public Sector		
Programme	**Deliverables**	**Good Practice Examples**
Raising Profile	▪ Dedicated SCCP website ▪ SCCP quarterly newsletter ▪ Invite businesses, schools and community groups to make pledges	▪ Worcestershire County Council's EcoSchools Programme where children have run events on climate change for their local communities. ▪ Use of online interactive resources e.g. of the Royal Geographical Society's. ▪ Supporting the development of computer games such as 'The Carbon Challenge' which use a mix of illustration and animation to put across messages on climate change.
Promoting Best Practice	▪ Set of Surrey best practice case studies ▪ Host Surrey wide best practice tours ▪ Share best practice with other partners / adjacent authorities ▪ Host an annual green awards ceremony to recognise business, school and community groups	
Engagement	▪ Champions network ▪ Sector based information sharing workshops ▪ Facilitate or fund voluntary, neighbourhood groups to raise awareness	
Information Resources	▪ Inform public through library access and services: information sharing, energy meter loans etc	

(2) Educational settings

The following are programs and deliverables developed for this area (workstream):

Workstream: Educational Settings		
Programme	**Deliverables**	**Good Practice Examples**
Carbon Management for Schools	▪ Individual school policies and action plans ▪ School travel plans	▪ 'Do it for Devon' community communication programme includes TV adverts, distribution of a householder's guide and providing free room thermometers and low energy bulbs. ▪ Lincolnshire programme involves dedicated local websites, distribution of energy efficiency DVDs and photographic competitions on climate change impacts. ▪ Online pledge programmes and targets for residents – Birmingham City Council.
Facilities Improvement	▪ Participation in eco-schools ▪ Programme of energy audits and advice for schools ▪ Funding mechanism for capital investment ▪ Certification for new schools and refurbishments	
Educational Resources	▪ Teaching programme in schools ▪ Education in public buildings and spaces ▪ Programme for developing educational resources using new media	
Engagement	▪ County-wide engagement programme with schools ▪ School awards / competitions	

3.2.3 Local Transport Plan

36 Local Transport Plans in England and Wales are the main mechanisms for implementing transport policies at the local level and local authorities in England were encouraged to integrate their action plans or include air quality information in their LTP.

37 Surrey's third Local Transport Plan (LTP3) consists of several specific strategies. The purpose of each strategy is to set out the most cost-effective measures to tackle problems and address objectives and targets of the Plan.

38 Objectives to be sought by the Climate Change and Air Quality Strategies are listed in **Table 3.3** below. A list of local measures evaluated as preferred actions that will be taken or will be considered further is shown in **Table 3.4**. It is unknown whether any of the actions listed in **Table 3.4** are being or will be considered specifically for Runnymede.

39 In terms of tackling congestion, the focus of the previous Local Transport Plan was on Guildford, Woking and Redhill/Reigate as regional hubs. The AQMA covering the whole area of Spelthorne, and attributed to traffic on local roads, was considered a priority area to tackle air pollution. The County Council monitors traffic levels across the county on an annual basis.

Table 3.3 Objectives and targets of Climate Change and Air Quality Strategies of LTP3 (2011)

AIR QUALITY STRATEGY	**CLIMATE CHANGE STRATEGY**
AIM: To improve air quality in AQMAs on the county road network such that Surry's borough and districts are able to un-declare these areas as soon as possible, with regard to other strategies and funding constraints.	**AIM:** To reduce carbon dioxide emissions from transport in Surrey and manage climate risks posed to transport infrastructure and transport services that organisations in the Surrey Strategic Partnership (SSP) and the Transport for Surrey Partnership are responsible for.
OBJECTIVES: ▪ Working with the accountable borough or district council for each designated AQMA, to incorporate physical transport measures in the borough or district councils Infrastructure Delivery Plan, agree options for the enforcement of existing regulations and agree options for supporting smarter travel choices, for future implementation as and when funding becomes available, in order to reduce air pollution from road traffic sources ▪ To provide assistance to the borough and district councils in producing their review and assessment reports, and Action Plan progress reports: and ▪ To consider air quality impacts when identifying and assessing transport measures in Surrey.	**OBJECTIVES:** ▪ Reduce distance travelled (vehicle kms) by reducing the need to travel. ▪ Increase the proportion of travel by sustainable modes such as walking and cycling, maintain public transport patronage and increase vehicle occupancy. ▪ Switch to lower carbon vehicles, encourage efficient driving and manage traffic flows. ▪ Reduce energy use of transport infrastructure and services. ▪ Manage the risks posed to transport, by forecasted effects of climate change.

INDICATORS: ▪ Revocation of AQMAS on the county road network. **TARGETS:** ▪ Revocation of two AQMAs on the county road network during 2011 – 2015.	**INDICATORS:** ▪ Carbon reduction from road transport. ▪ Carbon reduction from SCC business travel. ▪ Climate change adaptation. **TARGETS:** ▪ 10%[1] reduction in absolute emissions of carbon dioxide from all road transport except motorway traffic, to be achieved by 2020 and increasing to 25% reduction by 2035 on 2007 levels of 2,114 k tones (1.9 tonnes per capita). ▪ 28% reduction in carbon emissions from SCC business travel by 2013/14 compared with 2008 baseline of 5.5 k tones CO_2. ▪ Establishment of climate change adaptation target awaiting clarification from central government for single data list.

[1] The Climate Change Strategy's target to reduce emissions of carbon dioxide from all road transport (except motorway traffic) by 10% by 2020 as compared worth 2007 baseline is expected to be composed of approximately 7% from national measures and 3% from local measures.

Table 3.4 Preferred measures of Climate Change and Air Quality Strategies of LTP3 (2011) with additional comments on progress SCC in brackets)

INFRASTRUCTURE MEASURES	**Strategy which is the main promoter of the measure**
Upgrade streetlights and include dimming management for reduced energy consumption (underway in Runnymede)	Asset Management
Specify use of sustainable materials for highways maintenance and minimise waste to landfill (used wherever possible)	Asset Management
Climate change adaptation planning to identify risks, most effective responses and take action in prioritised areas e.g. wet spots database (Prioritised for 2014 flood hit areas)	Climate Change
Procure lower emissions vehicles for SCC fleet and incorporate into tenders for contracted works.	Climate Change
New and/or improved cycle lane and track (within the proposed Egham Sustainable Transport Package as well as the emerging SCC Runnymede Local Transport Strategy and Implementation Programme.)	Cycling
Cycle parking (recently expanded at Egham Station)	Cycling
Infrastructure to support use of hybrid/electric vehicles	Climate Change
Transport interchange infrastructure.	Local Bus
Tree planting and green roofs within schemes.	Air Quality
Park and Ride	Local Bus
Park and Stride	Walking
Parking and loading restrictions (SCC Vehicular and Cycling Parking Guidance January 2012)	Parking
Removal / installation of traffic signals (The proposed Egham Master plan includes new signals, proposal for new signals on A30)	Congestion

MANAGEMENT OF INFRASTRUCTURE MEASURES	Strategy which is the main promoter of the measure
Providing supported bus services using prioritisation methodology (currently supported by SCC on 5 routes within Runnymede).	Local Bus
Freight Quality Partnerships.	Freight
Continuation and development of partnership arrangements between the county council and bus operators.	Local Bus
Integrated Demand Management.	Congestion
Police enforcement including speed limits.	Road Safety
Civil parking enforcement – officers and CCTV	Parking
Smart Card ticketing.	Local Bus
Urban Traffic Management and Control (UTMC) (There are 6 Variable message signs within the borough, Automatic Number Plate Recognition a various locations for journey time management).	Congestion
Coordination of roadwork's (carried out under the New Roads and Street Works Act 1991).	Congestion

PROMOTIONAL AND BEHAVIOURAL MEASURES	Strategy which is the main promoter of the measure
Workplace travel planning.	Travel Planning
Car share database.	Travel Planning
Car clubs.	Travel Planning
School travel planning.	Travel planning
Workplace travel planning.	Travel Planning
Cycle training.	Travel planning
Encourage internet use to facilitate access to services.	Travel Planning
Home working.	Travel Planning
Promotion of eco-driving.	Climate Change
Encourage fuel efficient driving through voluntary use of intelligent speed adaptation technology on satnavs.	Climate Change. Accessibility
Details on promotional and behavioural measures are provided on the SCC TravelSmart website	

INFORMATION PROVISION MEASURES	Strategy which is the main promoter of the measure
Advisory signage (e.g. turn off engine at level crossings) (in place)	Air Quality

PRICING MEASURES	Strategy which is the main promoter of the

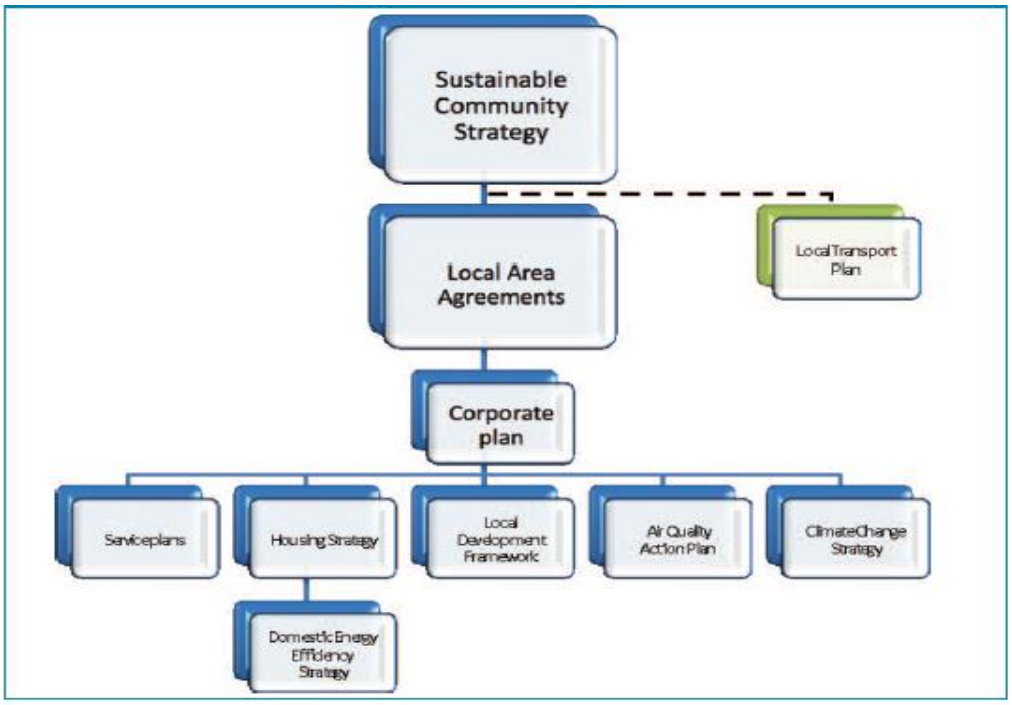
	measure
Differential parking charges	Parking

OTHER MEASURES (INCLUDING LAND USE MEASURES)	**Strategy which is the main promoter of the measure**
Working with partners to consider climate change issues:	
▪ In Local Development Framework process to plan location and type of development and local infrastructure improvements and controls.	Air Quality / Climate Change
▪ In identification of appropriate developer-funded mitigation schemes.	Air Quality / Climate Change
▪ In providing guidance on parking provision.	Air Quality / Climate Change
Include sustainable travel accessibility in decision-making criteria of the Surrey Strategic Partnership "Estates Review".	Climate Change
Enforcement of fuel vehicle labelling in car showrooms.	Climate Change
Encourage boroughs and districts to consider adopting minimum emission standards or vehicle age restrictions into taxi licensing procedures.	Air Quality

3.3 Runnymede Planning Policies

40 This Action Plan has been developed within the context of the Council's vision and in agreement with relevant local plans and strategies. **Figure 3.1** below shows the hierarchy of local planning system and linkages between local authority plans and strategies.

Figure 3-1 Linkages between local plans and strategies[45]



[45] EPUK (Environmental Protection UK) (2011) *Air Quality and Climate Change: Integrating Policy within Local Authorities.*

3.3.1 Runnymede's Sustainable Community Strategy

41 Published in September 2012, Runnymede's Sustainable Community Strategy (SCS) 'Vision for Runnymede' sets out priorities for the Council's action and provides an overarching strategy for all other local plans and strategies, including the emerging Local Development Framework. The new SCS draws on the preceding Strategies and is focused on four themes:

- Voice for Runnymede;
- Revitalisation;
- Environment to be proud of;
- Healthy and vibrant communities.

42 The place-shaping agenda of the Strategy ('Revitalisation' theme) seeks to revitalise Runnymede's town centres and actively encourage economic growth in the Borough. To achieve the new vision of the SCS, the emerging Local Development Framework will have to consider the following scale of development:

Town centre	Residential Units	Commercial Space
Addlestone	Between 500 and 5,000	22,000sqm
Chertsey	40 hotel beds	2500sqm (supermarket)
Egham	To be confirmed	To be confirmed
Virginia Water	Up to 50	up to 2000sqm (supermarket)
DERA site	up to 1500	To be confirmed

43 Locating new development in town centres will ensure that services are concentrated in one place thus allowing for the retention and strengthening of existing infrastructure and providing better conditions for the control of adverse effects on air quality/ preventing greenhouse gas emissions, and implementation of appropriate mitigation measures. In particular, the proposed town centre allocations will reduce the need to travel which, in turn, will improve the Borough's sustainability.

44 As part of the Council's 'Environment to be proud of' theme within the Sustainable Community Strategy[46], the Council will look at integrated measures to achieve reductions in air and greenhouse gas emissions, such as energy efficiency and renewable energy policies for new development and working with partners to reduce congestion and encourage the use of sustainable modes of transport.

3.3.2 Local Development Framework (LDF)

New Local Plan

45 Runnymede Council recently (March 2013) consulted on the pre-Submission version of the new Local Plan (Core Strategy), scheduled to be adopted in 2014. The new LDF will replace the current Local Plan (2001), providing strategic framework to future development in Runnymede up till 2026[47].

[46] A Vision for Runnymede: Runnymede Borough Council's Sustainable Community Strategy September 2012

[47] The Planning and Compulsory Purchase Act (2004) introduced changes to the planning system. Planning authorities were required to prepare Local Development Frameworks. This was a collection of local plan documents with a Core Strategy as the central document. Other documents could include Site Allocations, Development Management Policies, Development Plan Documents (DPDs) and Area Action Plans (all of which were optional).

At present, by law, the Local Plan has to contain a Core Strategy and Site Allocations Development Plan Document, which sets out which areas of land are planned for development (shown on a 'proposals map'). If their need can be justified, the Local

46 It is intended that elements of the existing Local Plan (2001) will be replaced by the new Core Strategy (now under consultation) when it is adopted. Further parts will be replaced by the Development Management Policies DPD when it is adopted at a later date. These – and other - Development Plan Documents (DPD's), together with the Minerals and Waste Plans produced by Surrey County Council will comprise the statutory development plan for the Borough.

47 Runnymede has not published any Development Plan Documents (DPDs) or Supplementary Plan Documents (SPDs) to date. The new Local Plan currently under consultation does not contain a specific policy for Air Quality.

48 Policies of the new LDF will have regard to residents' views gathered as part of a local survey. Residents consulted on the Policies of the LDF expressed their support for better provision of public transport and implementing sustainable transport measures through the planning system.

49 Residents identified the need for improved connectivity across the borough and with cross boundary areas. Specific comments highlighted the importance of alternative transport arrangement such as car share if car parking restrictions were to take place. Large commercial development, public buildings and schools should have Travel Plans (almost two thirds of the respondents).

50 In respondents' view on implementing sustainable transport measures through planning system (conditions on planning permission):

- A residential development should make a financial contribution towards improving the Yellow Bus Scheme (over half the respondents);
- All development should make a financial contribution towards improving existing (or providing new) bus services (over half the respondents);
- New development should make a contribution towards improving paths and cycle routes (nearly half the respondents);
- New development should contribute towards improving the travelling facilities and services at railway stations.

51 Majority of respondents also agreed that the contribution from on-site renewable energy sources towards heating and energy generation should be increased above 10%.

52 Taking into account the residents views, transport policies of the emerging LDF will aim to improve accessibility by sustainable modes of transport to town centres, local centres and facilities needed on an everyday basis to reduce reliance on the private car.

53 All policies and proposals of the new LDF will be subject to a Sustainability Appraisal and Strategic Environmental Assessment to ensure that social, economic and environmental issues have been taken into consideration. Most recently, the Council issued a Sustainability Appraisal Report (SAR) of the emerging Local Plan (Core Strategy) - published in February 2013.

Plan could also contain: Area Action Plans, Development Management Development Plan Document, other Development Plan Documents (providing policies on key issues in a locality that will be given full statutory weight in the planning process) and Supplementary Planning Documents (providing non-statutory guidance on important local issues).

Existing Local Plan

54 The existing Local Plan (Second Alteration), adopted in April 2001, is a document containing all the local planning policies, which set out the way that buildings and land are used and developed.

55 The Surrey Structure Plan (2004) was adopted as part of the Local Plan and originally saved for three years until December 2007. A number of Local Plan policies were 'saved' in 2004, with some being deleted. In April 2007 the Council's Planning Committee decided to save a wider range of policies from the 2001 Local Plan. From 28th September 2007 a number of policies in the 2001 Local Plan ceased to have effect following a Direction by the Secretary of State under Paragraph 1(3) of Schedule 8 to the Planning and Compulsory Purchase Act 2004.

56 The remaining policies continue to be part of the development plan and are referred to as 'saved polices'. These polices continue to be used in determining planning applications and guiding appropriate development. The schedule in **Table 3.5** below lists all the 2001 adopted Local Plan policies relevant to air quality and identifies which of them were 'saved' in September 2007, and which LDD will contain a new policy that will eventually replace them.

57 Surrey Structure Plan (2004) was wholly replaced by the Regional Spatial Strategy (South East Plan) in May 2009, which in turn has been scheduled by the Coalition Government for revocation at some time in the future. At the time of writing, the South East Plan has been partially revoked.

58 The Council continues to use Supplementary Planning Guidance (SPG) as a material consideration in determining planning applications. SPG is supplementary to the adopted 2001 Local Plan. These policies and guidance will be reviewed and incorporated as appropriate in the DPD's identified in this Scheme. **Table 3.6** below lists the existing SPG, which have relevance to air quality.

Table 3.5 Schedule of policies saved and not saved from the 2001 Runnymede Borough Local Plan with relevance to air quality

Policy Number	Subject matter	Recommend	Reason	To be covered / replaced inLDD
MV1	Land use & transport studies	Not saved	Covered by Structure Plan and LTP/ To be carried forward to LP	CS
MV2	Highway works & traffic management	Not saved	Covered by Structure Plan, LTP and LDF	CS
MV3	Transport infrastructure contributions	Saved	To be carried forward to LP / Used by DC	CS (IDP and CIL)
MV4	Access and circulation arrangements	Saved	To be carried forward to LP / Used by DC	DM
MV5	Access to public transport	Saved	To be carried forward to LP / Used by DC	CS
MV6	Bus Facilities	Not saved	Covered by Structure Plan and LTP/ To be carried forward to LP	CS
MV7	Rail Services	Saved	To be carried forward to LP / Used by DC	CS
MV8	Lorry movements	Not saved	Covered by Structure Plan and LTP	N/A
MV9	Parking Standards	Saved	To be carried forward to LP / Used by DC	DM
MV10	Car park provision in town centres	Not Saved	Requirements for commuted payments not acceptable.	DM
MV11	Private nonresidential	Not saved	Not Used	DM

	parking			
MV13	Cyclists	Saved	To be carried forward to LP / Used by DC	CS
MV14	Pedestrians	Saved	To be carried forward to LP / Used by DC	CS
NE2	Impact of new development	Not saved	Not Used	N/A
NE12	Tree protection	Saved	To be carried forward to LP / Used by DC	DM (green infrastructure)
NE14	Trees and development	Saved	To be carried forward to LP / Used by DC	DM (green infrastructure)
NE16	SNCIs	Saved	To be carried forward to LP / Used by DC	DM (green infrastructure)
NE17	County sites	Saved	To be carried forward to LP / Used by DC	DM (green infrastructure)
NE18	Enhancement of SNCIs	Saved	To be carried forward to LP / Used by DC	DM (green infrastructure)
NE20	Species protection	Saved	To be carried forward to LP / Used by DC	CS (green infrastructure)
BE1	Planning briefs/design guidance	Not saved	Not Used	N/A
BE2	Townscape character	Saved	To be carried forward to LP / Used by DC	DM
BE4	Conservation area review	Saved	To be carried forward to LP / Used by DC	DM
BE5	Development in conservation areas	Saved	To be carried forward to LP / Used by DC	DM
BE5A	Demolition in conservation areas	Saved	To be carried forward to LP / Used by DC	DM
BE6	design guidance in conservation areas	Saved	To be carried forward to LP / Used by DC	DM
BE7	Enhancement schemes in cons areas	Saved	To be carried forward to LP / Used by DC	DM

Table 3.6 Supplementary Planning Guidance and Draft Policy Guidance with relevance to air quality

Document Title	Date Adopted	Saved Local Plan or SPlan Policy	DPD containing New Policies
Trees Woodlands & Hedgerows SPG	July 2003	NE12, NE13, NE14 SEP NRM7	DM DPD
SPG on Car Parking October 2001 (this document has 3 appendices)	Local Plan Appendix B	MV9, MV10 SEP T4 & T5	DM DPD
Renewable Energy Interim Advice Note (not an SPG)	February 2010	SEP NRM11 (only for developments of more than 10 dwellings or 1000sqm of floorspace	CS, DM DPD

4 CONSULTATION

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

2 The Environment Act 1995 requires the Council to undertake extensive consultation at each stage of the process, thus creating an interactive method of action. Schedule 11 of the 1995 Act requires local authorities to consult:

- the Secretary of State;
- the Environment Agency;
- the highways authority ;
- all neighbouring local authorities;
- the county council (if applicable to English local authorities);

- any National Park authority;
- other public authorities as appropriate; and bodies representing local business interests and other organisations as appropriate.

3 A detailed list of statutory and non-statutory organisations to which the draft Plan will be sent and whose support will be sought for the implementation of this Plan can be found in **Appendix D.**

4 Initial consultation was limited to the Council's internal Service Areas, and resulted in the production of this initial draft Action Plan.

5 In the next step, the Plan will be sent to Defra and having received and considered Defra's comments, it will be forwarded to the Surrey County Council, Highways Agency, neighbouring local authorities and other statutory and non-statutory consultees.

6 All comments from both Statutory and non-statutory consultees received on the draft Action Plan will be considered and incorporated where appropriate into the final Action Plan. The timescale for consultation shall be a minimum of 8 weeks.

7 The final 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.

5 COST EFFECTIVENESS

1 For the purpose of this Action Plan, the costs and air quality impacts have been estimated, and banded as being low, medium and high. 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.

2 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.

Cost and impact rating

3 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.

4 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 prioritisation has been used using professional judgment. It should also be noted that the costs are costs of the action and therefore are not for the Council only.

5 These ratings are used to determine the cost/impact shown in the AQAP table (see **Table 5.1** and **Table 5.2**). 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 5.1 Cost Rating description

Cost Banding	**£**	**Description**
Low (1)	< 50K	Cost is covered by existing budget or by fees from polluter.
Medium (2)	50-100K	Additional funding is required, but may be incorporated with forward planning.
High (3)	>100K	Additional funding is required that cannot be incorporated into existing budget.

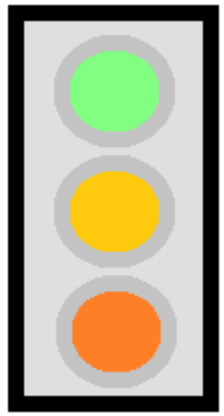
Table 5.2 Air Quality Impact rating descriptions

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 µg/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 µg/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 µg/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.

6 PROPOSED MEASURES



1 This chapter sets out the actions that the Council is currently taking and intending to take to improve air quality in the Borough.

2 The planning measures benefiting air quality already in place have been discussed in **Chapter 3** and include transport related 'saved' policies of the Local Plan (2001), transport policies of the new Sustainable Community Strategy and Renewable Energy Interim Advice Note (2010) requiring from new development 10% of energy to be supplied by renewable sources.

3 Measures already introduced outside of the planning system focus on the monitoring and assessment of current pollution levels, and promotion of sustainable travel choices.

4 The proposed actions were grouped into categories (Planning System, Monitoring, Infrastructure Projects, Traffic Emissions Control, Sustainable Transport and Promotion) and ranked according to their perceived feasibility.

5 The list of the proposed measures is preliminary and will be consulted upon and reviewed to identify the most effective projects to address local air quality issues. Therefore, this document is seen as the beginning of a long process and will need to undergo verifications as new data becomes available.

6 The actions considered to be the most feasible are shaded green ('given the green light'). These actions are either being implemented or their implementation will be assessed in more detail in a feasibility study (to be undertaken after the Plan's submission).

7 The actions 'given the yellow light' require a more cautious approach due to either high cost of implementation or/and low effectiveness, and their implementation will be given lower priority.

8 Due to low feasibility some of the proposed projects - shaded red - have been suspended from further consideration, however, were the circumstances to change and the projects become more cost-effective and/or acceptable, the Council will resume their progress.

9 The AQAP measures will be reviewed and revised annually to ensure that the work remains focused on the prioritised projects.

6.1 Emissions Control through Planning System

10 The planning system can help deliver improved air quality and reduce carbon emissions. Appropriate mitigation can ensure that adverse impacts of developments are avoided, minimised or offset, in line with the National Planning Policy Framework: "Local planning authorities should seek opportunities to achieve each of the economic, social and environmental dimensions of sustainable development, and net gains across all three. Significant adverse impacts on any of these dimensions should be avoided and, wherever possible, alternative options which reduce or eliminate such impacts should be pursued. Where adverse impacts are unavoidable, measures to mitigate the impact should be considered. Where adequate mitigation measures are not possible, compensatory measures may be appropriate" (s. 152 of the NPPF).

11 A list of proposed actions related to assessing development impacts and securing appropriate mitigation or off-setting measures has been provided in **Table 6.1** and **Table 6.2**.

Table 6.1 Air quality development control measures

PROPOSAL	DESCRIPTION AND OBJECTIVES	DELIVERY /DURATION COST UTILITY	FEASIBILITY	
Requirement for certain types of developments to undertake Air Quality Assessment	The process of Air quality Assessment is aimed to identify any adverse impacts on air quality associated with a development and thus ensure the sustainability of a proposed development through the application of appropriate mitigation / offsetting measures. Air Quality Assessment is to be required from development likely to have a significant effect on air quality. The main ways a development may have a significant impact are[48]: ▪ If the development is likely to cause a deterioration in local air quality (i.e., once completed it will increase pollutant concentrations). ▪ If the development is located in an area of poor air quality (i.e., it will expose future occupiers to unacceptable pollutant concentrations). This includes:	Delivery: From publishing of the completed draft of this AQAP. Cost: Low Utility: High	High – Already in place in respect of developments within AQMAs. Full implementation depends on whether the AQAP is adopted.	GREEN GREEN

[48] London Councils (2007) *Air Quality and Planning Guidance.*

	▪ Developments within an AQMA; ▪ Developments within a 'proposed' AQMA; ▪ Developments adjacent or near to an actual or proposed AQMA; ▪ Developments likely to increase traffic in an actual or proposed AQMA; ▪ Developments outside of an AQMA where a cumulative effect of developments is a concern; ▪ Developments outside of an AQMA where the concentrations of air quality pollutants have been close to the objective (within 10% of the objective); ▪ Developments outside of an AQMA where there is the potential to cause a significant deterioration in air quality unless measures to minimise the impact of air pollutants are included. ▪ If the developments in located in an ecologically sensitive area. ▪ If the demolition/construction phase will have a significant impact on the local environment (e.g., through fugitive dust and exhaust emissions).			
Developments not requiring Air Quality Assessment	It is assumed that every development will add to overall air emissions, be it emissions from buildings or additional traffic. For that reason every development should be designed in a way that promotes sustainable transport (cycling) and energy efficiency. For instance, small developments in background locations where current air pollution levels remain well below objectives can look into design improvements and, for example, provide shelters for bicycles and improve building thermo-efficiency.	Delivery: From publishing of the completed draft of this AQAP. Cost: Low Utility: High	Medium	YELLOW
Cumulative Impact Assessment	The impacts of a proposed development should be assessed in combination with the impacts from other reasonably foreseeable schemes, both within the authority and neighbouring boroughs, which would include both approved developments and other proposals which planning officers consider likely to proceed[49]. This will ensure that the impacts of the 'with development' scenario are adequately considered when compared against the 'baseline' condition.	Delivery: From submission of the completed draft of this AQAP. Cost: Low Utility: High	Medium. Implementation depends on whether the AQAP is adopted	YELLOW

[49] As above.

<table>
<tr>
<td>Assessment criteria for impact significance</td>
<td>It is anticipated that one third of all development in Runnymede to be constructed over the life-time of the 2013 Local Plan will consist of applications for small developments of up to 50 residential units.

Individual applications for small developments are not likely to give rise to significant air quality impacts. However, taken cumulatively, they may be the source of significant emissions, leading to exceedences of air quality objectives.

To address this issue, it is proposed that more stringent impact significance criteria[50] are applied in the process of Air Quality Assessment, as shown in the Table below:
<table>
<tr><td>Magnitude of change in pollutant concentration</td><td>Change in Concentration due to development</td><td>Or if development contribution causes</td></tr>
<tr><td>Very high / overriding</td><td>Increase >10% (4 µg/m^3)</td><td>Breach of AQ objective</td></tr>
<tr><td>High</td><td>Increase 5-10% (2-4 µg/m^3)</td><td>Exposure to be within 5% AQ objective</td></tr>
<tr><td>Medium</td><td>Increase 1-5% (0.4-2 µg/m^3)</td><td>Exposure to be within 10% AQ objective</td></tr>
<tr><td>Low / Imperceptible</td><td>Increase < 1% (0.4 µg/m^3)</td><td></td></tr>
</table>
</td>
<td>Delivery: From submission of the completed draft of this AQAP.

Cost: Low

Utility: High</td>
<td>Medium

Implementation depends on whether the AQAP is adopted by the Council.</td>
<td>YELLOW</td>
</tr>
<tr>
<td>Future year projections</td>
<td>As current evidence indicates that to date nitrogen dioxide concentrations have not been reducing as predicted by national modeling it will be required to take a precautionary approach to predicting future concentrations. For instance, a current year emission factors reduced by applying national average trends (as described in Note on projecting NO_2 concentrations by Bureau Veritas, April 2012) may have to account for a worst-case scenario.</td>
<td>Delivery: From submission of the completed draft of this AQAP.

Cost: Low

Utility: High</td>
<td>Medium

Implementation depends on whether the AQAP is adopted by the Council.</td>
<td>YELLOW</td>
</tr>
<tr>
<td>Securing air quality improvements through planning conditions, ‘section 106’ planning obligations and</td>
<td>Specific measures should be suited to development’s scale, predicted magnitude of air quality impacts and existing pollutant concentrations. A generic (non-exhaustive) list of mitigation and offsetting measures, grouped into categories, has been compiled from available guidance documents (Table 6.2). This list should</td>
<td>Delivery: From publishing of the completed</td>
<td>Medium</td>
<td>YELLOW</td>
</tr>
</table>

[50] These criteria follow Sussex Air Quality Partnership (2013) *Air quality and emissions mitigation guidance for Sussex authorities*. Consultation document.

Community Infrastructure Levy (CIL)	be read alongside **Table 6.3** where the type of measures was assigned to developments according to their size/predicted impact and existing pollutant concentrations. The Council will use planning conditions, 'section 106' planning obligations and Community Infrastructure Levy (CIL) to mitigate adverse impact on air quality for the above described developments. The provisions may, in the future, be related to a realistic net increase in trips from the development site.		draft of this AQAP. Cost: Unknown[51] Utility: High		
Refusal of planning permission on air quality grounds	Recommendation for refusal of a planning application may be made if very high/overriding air quality impacts from a development remain, even after all reasonable means to mitigate the impacts on air quality have been exhausted or, if the development is inconsistent with the Air Quality Action Plan.		Delivery: From publishing of the completed draft of this AQAP. Cost: Low Utility: High	High	GREEN
Inclusion of air quality and climate change policies in development plan documents.	▪ Air quality & climate change policies within development plan documents. Possible policies: - Promote reductions in traffic on congested streets, in town centers and areas within or adjacent to AQMAs. - Ensure developments within or adjacent to AQMAs provide measures to meet AQ objectives. - Determine the levels of contributions sought to fund AQAP measures. - Set sustainable design targets for new and/or existing development regarding renewable sources of energy, energy efficiency and carbon reductions.	▪ Inclusion of an air quality policy will ensure that land use allocations have regard to their potential air quality impacts and that the measures of the AQAP are implemented.	Delivery: RBC Cost: Unknown Utility: High	Medium Implementation depends on the support of the Planning Department and on whether the AQAP is adopted by the Council.	YELLOW

[51] A feasibility study would need to be carried out to test the ability of a range of development types proposed in the emerging Local Plan to make contributions to measures identified in the AQAP.

Air Quality and Climate Change Supplementary Planning Document(s).	▪ Specific guidance to supplement policies in the development plan documents. Possible content: - AQ assessments – when required, content, scope, methodology, significance of impacts & CEA effects. - Support sought for AQAP measures. - Justification & evidence for sustainable design targets for new and/or existing development.	▪ Clear guidance on how to assess the air quality and climate change impacts of a development.	Delivery: RBC Cost: Unknown Utility: High	Medium Implementation depends on the support of the Planning Department and on whether the AQAP is adopted by the Council.	YELLOW

Table 6.2 Measures to mitigate against air quality impacts of developments [adapted from *Development Control: Planning For Air Quality (2010 Update)* and local authority planning guidance documents][52]

Redesign measures (design, layout, orientation and construction) - to be secured by planning conditions.	• Set back any occupied buildings from busy congested roads. • Sensitive uses should be placed in the least polluted parts of the site e.g. habitable rooms away from façade fronting pollution source. In flats put corridors, stairwells, bathrooms etc. in these locations. Children's play space should be located away from roads with high levels of air pollution. Residential use can be placed on higher storeys away from sources of air pollution (and noise) at ground level allowing for balconies and openable windows, while lower floors can accommodate commercial uses where mechanical ventilation and windows that cannot be opened are more acceptable. • Remove or relocate balconies - may be best avoided in locations of poor air quality, especially at ground and first floors. • Avoid canyon streets or creating canyons. Creating gaps in building facades can help ensure free flow of air in the street. • Consider ventilation. • Using zero-emission heating technologies that reduce both carbon and air pollutant emissions (e.g. solar hot water or heat pumps). • Using only ultra-low NO_x boilers. • Improved building insulation (above current regulations). • Requiring further (above current regulations) reductions in air pollutant emissions from buildings, e.g. Level 4 of the Code for Sustainable Homes. • Reduced car parking provision, limit maximum number of spaces. • Design in walking and cycling routes/facilities and/or upgrade existing Infrastructure. • Provision of facilities for public transport, such as bus stops and lay-bys. • Develop communal combined heat and power where it shows to achieve both carbon and air pollutant reductions. • Ensuring that the impact of transport infrastructure on ecological receptors, wildlife, landscape and amenity is minimised.

[52] EPUK (2010) *Development Control: Planning For Air Quality (2010 Update)*
Cambridge City Council (2008) *Air Quality in Cambridge. Developers Guide*
Mid Devon District Council (2012) Sustainable Development Study: Air Quality

Mitigation measures (other than design) – to be secured by planning conditions, Section 106 of the Town and Country Planning Act 1990 or CIL.	• Provision of information e.g. Welcome Pack with information of public transport, routes/times etc, walking and cycling routes. • Travel Plans. • Provide or contribute to a car club or car share scheme. • The management and use of parking spaces including size and number, priority/preference is given to certain categories of people, e.g. low emission / car club vehicles / cars with more than one occupant. Graduated parking charges based on emissions. • Provision of alternative fuels - electric charging points or biogas facilities. • Public transport fleet improvements e.g. provision of low emission buses. • Service vehicles - agreement to achieve specified emissions standards. • Contribution to specific traffic management or road schemes e.g. new or improved junction and road layouts. • Arrangements for deliveries to the site and removals from the site, covering specification of types of vehicles and hours of operation, design of delivery areas and specifications for lorry parking and turning spaces. • Freight / lorry routing
Compensation /Offsetting measures - to be secured through CIL.	• Contribution to specific traffic management or road schemes. • Contribution to action plan and monitoring programme. • Contribution towards improvements in public transport (this could include increased frequency of service/extended hours/low emission vehicles, etc). • Financial incentives for increased public transport use – e.g. discounted fares. • Contribution towards improvements in walking and cycling facilities. • Contribution to research schemes aimed at innovative air quality improvement methods, for instance possible uses of materials or chemicals such as photocatalytic paint and titanium coated fabrics to reduce NO_2 concentrations.

Table 6.3 Mitigation measures for developments of varying scale

Development size	**Expected number of cars**	**Predicted Impact on air quality**	**Existing concentrations well below objectives.**	**Existing concentrations close to objectives.**	**Existing concentrations above objectives.**
1-10 units	Up to 15	Imperceptible	Redesign measures	Redesign measures and Mitigation Measures	Redesign measures and Mitigation measures
11-50 units	Up to 75	Low	Redesign measures And Mitigation measures and Contribution to Offsetting measures	Redesign measures And Mitigation measures and Contribution to Offsetting measures	Redesign measures And Mitigation measures and Contribution to Offsetting measures
50-200 units	76-300	Medium-High	Redesign measures And Mitigation measures and Contribution to Offsetting measures	Redesign measures And Mitigation measures and Contribution to Offsetting measures	Redesign measures And Mitigation measures and Contribution to Offsetting measures
Above 200 units	Above 300	High	Redesign measures And Mitigation measures and Contribution to Offsetting measures	Redesign measures And Mitigation measures and Contribution to Offsetting measures	Redesign measures And Mitigation measures and Contribution to Offsetting measures

6.2 Monitoring

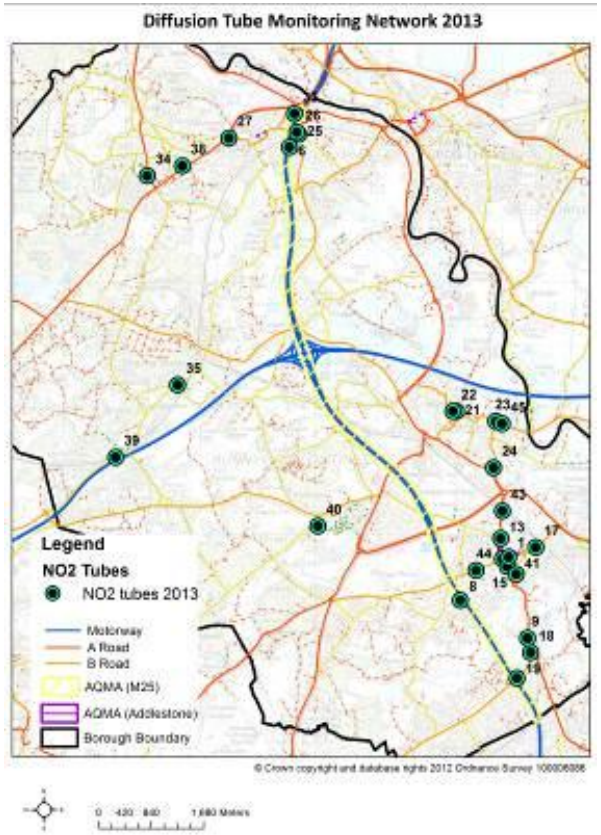
12 The Air quality monitoring ensures that the Council is aware of the areas where exceedences of air quality objectives are occurring. Monitoring is also important for the analysis of trends and as means to assess the effectiveness of the air quality measures.

13 Currently (March 2013) Runnymede has twenty six diffusion tube monitoring sites for nitrogen dioxide, mostly at roadside locations, as shown in **Figure 6.1.**

14 Monitoring within the AQMAs includes the following sites:

	Site	Comment / Recommendation
Addlestone AQMA	RY1 RY14 RY15	The 2010-2012 results from sites RY1, RY14 and RY15 confirmed that the original designation of the AQMA was still valid.
Areas adjacent to Addlestone AQMA	RY13 RY17 RY43 RY44	The sites RY13 and RY15 were moved to locations further along the roads from January 2011 to verify the AQMA boundaries. The 2011 results from site RY13 showed that the AQMA could be extended at its northern boundary. Subsequently, diffusion tube monitoring started at site RY43 in March 2013. Site RY44 was added in March 2013 as a result of a proposal to redevelop Addlestone town centre.
M25 AQMA	RY6 RY8 RY19 RY33	The 2010-2012 results from sites RY6, RY19 and RY33 confirmed that the original designation of the AQMA was still valid.

Figure 6-1 Runnymede's diffusion tube network (2013)



15 Runnymede Council does not operate any long-term automatic monitoring stations for any of the specified pollutants. However, funding from the air quality grant 2010-11 was used to install a short-term monitoring station at the railway level crossing in Vicarage Road in Egham between February and July 2011.

16 It is proposed to continue diffusion tube monitoring at sites with relevant receptors where the annual mean NO_2 concentrations are close to (approximately 10% below) or have exceeded the objectives. In light of the current proposal to 'regenerate' Addlestone, it is also considered beneficial to install a continuous monitoring station for nitrogen dioxide and fine particulates (PM_{10} and $PM_{2.5}$) at Addlestone town centre.

17 Details of the proposed monitoring projects are set out in **Table 6.4**.

Table 6.4 Proposed air quality monitoring projects

MONITORING PROJECT	LOCATION	PROPOSAL	AIM/BENEFITS	DELIVERY /DURATION COST UTILITY	FEASIBILITY
Diffusion tube monitoring for nitrogen dioxide	Locations of the existing sites are shown in **Figure 6.1.**	It is perceived that the current diffusion tube monitoring network provides good spatial coverage. Therefore, it is recommended to continue monitoring at existing sites until they are no longer of concern, and then potentially relocate tubes to other areas where monitoring is required.	▪ The purpose of further monitoring is to ensure that the Council and the public are aware of the existing nitrogen dioxide levels in the Borough and of the areas where exceedences of air quality objectives are occurring. ▪ Monitoring data from the existing sites are used for LAQM reporting and screening of planning applications. ▪ The analysis of long term monitoring data allows to identify long-term trends in air quality and to confirm that the pollutant concentrations decrease with time as predicted.	Delivery: Ongoing Cost: Low Utility: High	High
Automatic monitoring station at Addlestone town centre	Addlestone town centre		▪ The annual NO_2 means for the existing sites in the AQMA have shown concentrations exceeding the objectives. It is therefore clear that NO_2 concentrations are still exceeded within the current boundaries of the AQMA. ▪ The purpose of moving RY13 and RY15 further down the road is to check the NO_2 levels at the borders of	Delivery: 2014-2020 Cost: High Utility: High	Medium - Outcome depending on whether funding can be secured through air quality grant and developer's

			the AQMA and confirm that the extent of the AQMA has been defined correctly. ▪ The site RY14 is a worst-case location in the AQMA.		contributions

6.3 Infrastructural Changes to Tackle Congestion

18 Surrey County Council implements infrastructure projects under the objectives of the Local Transport Plan. A list of projects that have the potential to reduce congestion and benefit air quality is provided in **Table 6.5**.

Table 6.5 Proposed and current infrastructure projects

PROPOSAL	LOCATION	DESCRIPTION AND COMMENTS	BENEFITS	PROPOSED BY OTHER PLANS/ STRATEGIES?	DELIVERY /DURATION COST UTILITY	FEASIBILITY
Runnymede Roundabout project	Runnymede Roundabout, Egham (the junction of the A30, Egham Bypass and A308, The Causeway).	The proposed improvements include new layout and traffic signal control, and pedestrian and cycle crossings: • Convert the roundabout to signal control; • Widen the circulatory carriageway and approach lanes; • Provide enhanced pedestrian & off-road cycle facilities; • Provide more direct routes, and improve access to Egham High Street.	▪ Reduced congestion and waiting times at peak periods. ▪ The project will also significantly improve accessibility for pedestrians and cyclists to the neighbouring areas and River Thames.	The scheme was prioritised by the Local Transport Body for Enterprise M3 in July 2013.	Business case for the scheme will be submitted by the SCC in spring 2014. Funding, if approved, will be available from 2015. Cost: £4.8m Delivery: 2015 Utility: High	High
Egham Sustainable Transport Package		The project includes area wide walking, cycling and bus improvements: creating off road cycle routes along widened footways of the A308 The Causeway, and improved	▪ Reduction in traffic and congestion.	Local Transport Body/SCC	The scheme was not prioritised, but has entered a	Medium

		connectivity between the railway station and businesses and the town centre. The cycling and walking proposals include: • New Toucan crossings; • Conversion of a number of footways to shared use • Cycle route signing throughout Egham, and • Brompton Dock style cycle hire scheme near Egham Station. The bus infrastructure improvements along corridor to bus routes 51,71 and 441, including: • Real Time Passenger Information upgrades; • Intelligent bus priority at traffic signal controlled junctions; • Road alignment changes to reduce bus delays; • Better enforcement of waiting restrictions; • Carriageway relining to allow buses easier movement through junctions.			preparation pool of schemes, which means it could still go ahead if it shows a good business case & another prioritised scheme does not. Cost: £3.7m Delivery: 2016 Utility: Medium Approved by Local Committee but still subject to funding and business case.	
• MOVA or SCOOT signal control. • Optimisation and synchronization of traffic lights and puffin crossings.	• Station Road & High Street junction, Addlestone • Station Road and Church Road crossings, Addlestone	MOVA currently in place at the Station Road/High Street/Brighton Road/Church Road junction and the Brighton Road/Liberty Lane/Crockford Park Road junction SCOOT signal control react to real time traffic demands and by reducing delays reduce the overall levels of emission. Emissions can be managed by relocating queues in less sensitive areas. Potential to link signalised junctions, but may result in longer pedestrian wait times. Potential to amend the positions of the	▪ Increased capacity and thus reduced congestion at the junction of Station Road & High Street. ▪ Smoother traffic flows in Station Road and High Street.	No	No plans for SCC to introduce. Cost: High Utility: High	Medium – depending on funding opportunities.

		detection loops to better detect vehicles waiting to turn right.				
Traffic gyratory system	Addlestone town centre.	During the Addlestone Redevelopment scheme, potential for ne way traffic moving from the Green Lane/High Street junction to The Station Road/Garfield Road roundabout and returning via Station Road and the Station Road/High Street junction. SCC Highways, signals and Transport Development Planning teams are not aware of this proposal.	The aim of the scheme would be to improve traffic movements and reduce congestion at Addlestone town centre: ▪ Smooth traffic flows. ▪ Increased capacity and thus reduced congestion in the High Street and Station Road.	No	SCC to assess feasibility of the scheme. Cost: High Utility: High	Medium - Low
Pedestrian / cycle overpaths	• Station Road & High Street junction, Addlestone • Station Road and Church Road puffin crossings in Addlestone • Level crossings in Addlestone and Egham.	Pedestrians and cyclist could use the overpaths to avoid waiting at the crossings. Not popular with less abled, would require significant length ramps Visually intrusive in a residential area	▪ Reduced congestion in Station Road and High Street.	No	No plans for SCC to introduce. Cost: High Utility: Low	Low
▪ Right hand filter lane from High Street to Church Road.	Station Road &	Widening of the junction of High Street and	▪ Increased capacity and thus reduced	No	No plans for	Low

▪ Right hand filter lane from Station Road to High Street. ▪ Widening of Station Road & High Street junction.	High Street junction, Addlestone.	Station Road would make space for right hand filter lanes to be added in High Street and Station Road. No allocated funding, not part of any proposed programme. Would require acquisition of land, re-siting of services.	congestion at the junction of Station Road & High Street. ▪ Smoother traffic flows in Station Road and High Street.		SCC introduce. Cost: High Utility: High	

6.4 Traffic Emissions Control

19 Measures to tackle traffic emissions are also be directly managed under the Local Transport Plan. A list of projects that have the potential to reduce congestion and benefit air quality is provided in **Table 6.6**.

Table 6.6 Proposed emissions control measures

PROPOSAL	LOCATION	DESCRIPTION AND COMMENTS	BENEFITS	PROPOSED BY OTHER PLANS/ STRATEGIES?	DELIVERY /DURATION COST UTILITY	FEASIBILITY
Installation of electric vehicle charge points.	Town centres.	A network of publicly-accessible electric vehicle charge points. Electric charging points have been secured at British Gas, The Causeway and Bourne Business Park, Addlestone. Potential for A30 point.	▪ Support for drivers of electric vehicles in the Borough.	Yes – LTP3	RBC/SCC to assess feasibility of the scheme. Cost: High Utility: High	Medium

Provision of renewable refuelling infrastructure.	Town centres.	A network of hydrogen, compressed natural gas and bio-methane-filling points.	▪ Support for drivers of alternative fuel vehicles in the Borough.	Yes – Surrey's Climate Change Strategy	RBC/SCC to assess feasibility of the scheme. Cost: High Utility: High	Medium
Parking and loading restrictions - HGVs	Town centres.	Peak-time parking / loading restrictions on HGV deliveries.	▪ Traffic emissions are highest at peak hours and HGVs significantly contribute to total traffic emissions.	Yes – LTP3	Delivery: RBC Duration: 2013 Cost: Medium Utility: Low	Medium Loading time restrictions are already in place but are not effective due to poor enforcement. However, even successful implementation of loading restrictions will not reduce the total emissions from HGVs.
Improvements to the standard of Runnymede Council's fleet.	Borough wide.	▪ Check the specifications for RBC's fleet and encourage the upgrade to hybrid or low emission (Euro 4 and Euro 5). ▪ Encourage retrofitting of diesel vehicles. ▪ Encourage introducing alternative fuelled vehicles into the fleet. The scheme would apply to the following vehicles: - Refuse lorries; - Recycling lorries; - General cleaning vehicles (e.g. road - sweepers);	▪ The current standard of the vehicles needs to be determined to assess the benefits of the scheme.	No	Runnymede Depot and Procurement to assess the current standard of vehicles and feasibility of the scheme. Cost: High Utility: Low-Medium	Medium

		- Yellow Buses; - Community Transport vehicles.				
Investments to improve the standard of Runnymede's bus fleet.	Borough wide.	▪ Encourage the upgrade of Runnymede's bus fleet to hybrid or low emission (Euro 5 and Euro 6). ▪ Encourage introducing alternative fuelled vehicles into the fleet.	▪ Assuming there were 5% of HGVs in the traffic flow in 2008, this category of vehicles was found through dispersion to be contributing over 47% of traffic related NOx in 2008. Tackling bus emissions can be therefore anticipated to deliver considerable improvements to air quality.	No	Delivery: RBC, SCC, Quality Bus Partnership, Bus Companies: Abelio & Arriva SCC are investing into the bus fleet, to allow only low emission buses. Cost: High Utility: Medium-High	Medium
Low Emission Zone - Buses	Addlestone town centre (AQMA).	▪ Only low emission buses to be permitted to pass through the centre of Addlestone (AQMA).	▪ Assuming there were 5% of HGVs in the traffic flow in 2008, this category of vehicles was found through dispersion to be contributing over 47% of traffic related NOx in 2008. Tackling bus emissions can be therefore anticipated to deliver considerable improvements to air quality.	No	Delivery: RBC, SCC, Quality Bus Partnership, Bus Companies: Abelio & Arriva Cost: High Utility: Low-Medium	Medium
Idling vehicles enforcement – HGV drivers.	Bus stops. Level crossings.	The scheme can target the public and public sector HGV drivers who would be issued Fixed Penalty Notices if they refuse to co-operate.	▪ Raising awareness of pollution caused by idling.	No	Delivery: RBC Duration: 2013 Cost:	Medium – as enforcement opportunities legally limited to bus stops,

	Car parks next to schools.				Low/Medium Utility: Low	public car parks and level crossings, and even then fraught with political difficulty - therefore not considered an effective method to reduce air pollution. Low fines at £20 – cannot provide significant contribution to air quality projects.
Roadside emission testing in the AQMA.	Addlestone AQMA.	Authorised personnel to carry out a roadside test and, if emissions exceed the permitted level, issue a Fixed Penalty Notice or ask the driver to produce a certificate demonstrating that the vehicle has been fixed.	▪ No direct improvement in terms of air quality but a good way to raise awareness of air quality issues.	No	RBC / SCC to assess feasibility of the scheme. Cost: High Utility: Low	Low
'Low emission zone' – restriction on deliveries.	Town centres.	Restriction on HGV deliveries – high polluting HGVs charged or prevented from entering town centres.	▪ Traffic emissions are highest at peak hours and HGVs significantly contribute to total traffic emissions.	No	RBC/SCC to assess feasibility of the scheme. Cost: High Utility: High	Low due to high cost of implementation and enforcement.
Emissions based car parking charges.	Borough wide.	▪ Lower cost or free parking within the Borough for low emissions vehicles.	▪ An incentive to encourage residents to consider emission rates while purchasing a vehicle.	Yes – LTP3	RBC/SCC to assess feasibility of the scheme. Cost: High Utility: Low	Low
Increase in car parking charges.	Borough wide.	▪ Higher cost parking across the Borough.	▪ An incentive to use alternative form of transport. ▪ Funds raised could be used to support air quality schemes.			Medium

6.5 Public Transport, Walking and Cycling

20 Measures to encourage walking, cycling and the use of public transport, for example through company travel plans or provision of improved facilities, have been under implementation for a number of years as part of Local Transport Plan and local strategic Partnerships' initiatives.

21 Company travel plans and measures encouraging staff to cycle (incentives, improved facilities) are the measures included in Surrey's Climate Change Strategy. Walking and cycling measures have also been promoted through the Runnymede Business Partnership (1000 shelters provided at local schools and colleges in 2000) and the Transport Task Group (several new improvements and/or extensions to cycle routes completed in liaison with schools and businesses. The Group undertook the task to promote travel plans to local businesses and public transport to residents. As part of the latter, it is aimed to encourage better co-operation among public transport operators (e.g. bus and train service) and integrated services between Quality Bus Partnership, which would help to develop and expand alternative modes of transport.

22 New cycle stands and cycling routes have been implemented as part of Local Transport Plans. In 2007/2008 Surrey County Council completed several off-road cycling routes - among them: to Byfleet and New Haw railway station and alongside Christchurch Road in Virginia Water, however the cycling strategies of LTP2 prioritised Woking and Reigate & Banstead for cycle route development. South West Trains have upgraded the cycle parking on the north side (High Street side) of Egham Station following a SCC recommendation.

23 A list of measures supporting alternative modes of transport is included in **Table 6.7**.

Table 6.7 Sustainable transport measures

PROPOSAL	LOCATION	DESCRIPTION	BENEFITS	PROPOSED BY OTHER PLANS/STRATEGIES?	DELIVERY /DURATION COST UTILITY	FEASIBILITY
Travel planning	Borough wide.	Website promoting public transport, walking and cycling through provision of travel information/advice, journey planning, and organizing green travel events/campaigns. Example: http://www.smartertravelsutton.org/ or www.travelsmartsurrey.into/news/travel-smart-website	▪ Residents better informed of travel options and issues related to travel such as ticket costs, congestion and travel news.	Yes- LTP3, Surrey's Climate Change Strategy, Action for Runnymede Business Partnership (Transport Group)	RBC to assess feasibility of the scheme. Cost: Low-Medium Utility: Low-Medium	Medium
Maps of bus routes	Major bus stops.	▪ Bus route maps showing all stops on particular route. ▪ Maps of bus connections from particular location e.g. Addlestone town centre. ▪ Improvements to publicity/maps through the Quality Bus Partnership	▪ Residents would be able to see all bus connections from a particular bus stop. They would be also able to see all stops along a route.	Yes – LTP3 Passenger Transport Strategy: Part 2 - Information	Delivery: RBC Cost: Low Utility: Low-Medium	Medium

Discount schemes for public transport	Borough wide.	Financial support towards bus/rail fares.	▪ Residents encouraged to use public transport.	No	RBC/SCC to assess feasibility of the scheme. Cost: High Utility: Low-Medium	Medium
Provision of a 'Tesco' bus route	Tesco's in Station Road, Addlestone	A free bus route covering the Runnymede area with a terminus at Tesco's in Addlestone.	▪ Many car journeys to Addlestone have Tesco's as destination. Provision of a free bus could reduce the number of journeys by individual cars.	No	RBC/SCC/Tesco's to assess feasibility of the scheme. Cost: High Utility: Medium	Low – as the public would use it as a free bus.
Countdown timer	Level crossings.	▪ Installation of countdown timers at railway level crossings which would count down how long drivers have to wait after the barrier has come down and before the barrier opens.	▪ If drivers see they have to wait e.g. 6 min before the barrier opens, they will be more likely to switch their engine off.	No	Delivery: RBC/Network Rail Cost: High Utility: Low-Medium.	Low - as no known cases of such devices having been installed at railway crossings. Obtaining product approval to install a Pedestrian Countdown Timer at a Railway Crossing would be far more rigorous than obtaining Highways approval. It is therefore less expensive and more feasible to use (variable message?) signs showing approximate waiting time.

6.6 Promotion

24 **Table 6.8** lists measures aimed to convey information/advice, raise awareness of pollution and emission sources and promote clean air. Air quality promotion measures have been under implementation for a number of years as part of Local Transport Plan and are also included in Surrey's Climate Change Strategy.

25

Table 6.8 Air quality promotion measures

PROPOSAL	LOCATION	DESCRIPTION	BENEFITS	PROPOSED BY OTHER PLANS/STRATEGIES?	DELIVERY /DURATION COST UTILITY	FEASIBILITY
School art project	Primary/secondary schools and colleges in Runnymede.	▪ A competition where students produce an air quality poster and the projects which receive best rating are later displayed at Council-run facilities and events.	▪ Raising awareness among young people, their families and residents.	Yes – Surrey's Climate Change Strategy	Delivery: RBC Cost: Low Utility: Low	High
School air quality monitoring project (PI)	Secondary schools and colleges in Runnymede.	▪ Students assemble their own air quality/weather station using a Raspberry Pi computer and weather/gas sensors.	▪ Raising awareness among young people, their families and residents.	No	Delivery: RBC Cost: Low Utility: Low-Medium	High
'Switch off engine' signage	Public and private business car parks; school parking.	▪ 'Switch off engine' signs have already been installed at railway level crossings. This scheme could be extended to cover public and private	▪ Raising awareness of traffic emissions among the public.	No	Delivery: RBC, completed Cost: Low Utility: Low	High

		business (e.g. Thorpe Park, Tesco's) car parks and school parking. ▪ Signs could be periodically changed to increase the chance of them being noticed. ▪ Signs could use humour to convey their message.			No proposals for extended use.	
Reporting polluting vehicles.	Borough wide.	Online/telephone system e.g. an online form for reporting polluting vehicles.	▪ Facilitates the way information about smoky vehicles is passed to VOSA. Residents will perhaps be more likely to use Runnymede's form than contacting VOSA themselves.	No	Delivery: RBC Cost: Low Utility: Low	High
Comprehensive website as single point of reference for air quality issues within the borough.	Website.	▪ Comprehensive website providing information on air quality issues within the borough including: - Sources of emissions in Runnymede; - Maps of walking/cycling routes; - Eco-driving promotion (tips; promotion of Surrey's DriveSmart campaign video) - Smarter choices and car-share promotion (ppromotion of Runnymede's car-share; promotion of www.surreycarshare.com) - Electric	▪ A way to convey information/advice, raise awareness of pollution and emission sources and promote clean air.	Yes-LTP	Delivery: RBC Cost: Low-High Utility: Low	Medium

		vehicle/alternative fuel vehicle promotion; - LAPPC regime for industrial sources; - Smoke – Clean Air Act – smoke control areas – chimneys and unauthorized fuels; - Air quality feedback form.				
Displax™ interactive window	RBC Civic Centre.	- Displax™ interactive window aimed to highlight the issue of air pollution.	▪ A way to convey information/advice, raise awareness of pollution and emission sources and promote clean air.	No	Delivery: RBC Cost: High Utility: Low	Medium
Climate Change Strategy / Action Plan	N/A	A strategy proposing measures to reduce carbon emissions and adapt to climate change.	▪ Reducing emissions from domestic and commercial energy use.	Yes – Surrey's Climate Change Strategy	Delivery: RBC Cost: Low Utility: Medium	Medium
Energy Efficiency advice	Over the phone and website.	▪ Work with Energy Saving Trust local centre and energy supply companies to provide energy efficiency advice to residents and businesses.	▪ Reducing emissions from domestic and commercial energy use.	Yes – Surrey's Climate Change Strategy	Delivery: RBC Cost: Low Utility: Low	Medium
Energy efficiency schemes	Over the phone and website.	▪ Providing information on national and local energy efficiency schemes.	▪ Reducing emissions from domestic and commercial energy use.	Yes – Surrey's Climate Change Strategy	Delivery: RBC Cost: Low Utility: Low	Medium

7 IMPLEMENTATION AND MONITORING

1 All local stakeholders need to be involved to secure the implementation of the proposed air quality measures.

2 The preferred options (prioritised measures) of this plan will have to undergo a feasibility and emission reduction study in order to quantify the costs and benefits of their implementation.

3 The implementation and effectiveness of the Action Plan will be assessed through monitoring of nitrogen dioxide at relevant receptor locations within the AQMA. In addition, traffic flow changes on the key roads will also be assessed through the review and assessment process, and the uptake of local measures such as Travel Plans will be monitored.

4 Targets and indicators to monitor progress annually have been established through the recently issued Sustainability Appraisal Report (SAR) of the emerging Local Plan (**Table 7.1**) and the Surrey Third Local Transport Plan (**Table 7.2**).

5 There will be regular review and assessment of the action plan proposals to evaluate progress and this will be reported annually.

6 It must be stated that the Council's influence over air quality in the AQMAs is limited due to road traffic remaining the main source of emissions. The road network in Runnymede is managed by the Surrey County Council except for the motorways, which are managed by the Highways Agency.

7 Substantial reductions in transport emissions could be achieved by implementing large-scale transport and infrastructure projects, such as schemes restricting high polluting vehicles from entering specific areas, variable car parking charges, or road tunnels under railway level crossings.

8 The main constraint that can be anticipated is the lack of funding. Due to financial constraints, the LTP2 prioritised Surrey's transport hubs (Guildford, Woking, Reigate/Redhill) for the delivery of its strategies and transport measures. The Air Quality Strategy in LPT3 provides a toolkit of measures, most of which are low cost, which could be implemented to improve local air quality. It is hoped that in the future Runnymede AQAP can be integrated with the Local Transport Plan.

9 Sources of air quality funding available to district/borough councils mainly include revenue funding, Environmental Department's budget and developer contributions. Currently, the departmental budget is sufficient to cover the cost of the nitrogen dioxide diffusion tube network.

10 Specific projects may be successful to receive funding through Defra's annual Air Quality Grants programme.

11 It has been proposed in the Draft Sustainability Appraisal Report (SAR) of the emerging Local Plan (currently under consultation) that every new development meeting the CIL's definition of a dwelling is required to contribute towards the cost of tackling poor air quality. These financial contributions secured through Community Infrastructure Levy (CIL) would

be then spent on relevant mitigation/offsetting measures (as listed in Appendix 15 of the SAR). The main constrain is that currently, the Council does not have policies specifically addressing air pollution or greenhouse gas emissions ('Renewable Energy' Interim Advice Note (2010) includes the requirement for 10% of energy for all new developments to come from renewable sources, however the Note has not been the subject of public consultation) and proposals for new development do not volunteer to implement any air quality or energy efficiency measures unless such improvements are required by legislation.

Table 7.1 Suggested Monitoring of Impacts and Effects of the Local Plan (also to be used to monitor AQAP progress)

Indicator to be monitored	Frequency of data collection	When should remedial action be taken?	What remedial action should be taken?
Levels of NO_2 / PM_{10} in AQMAs and at worst-case sites with relevant exposure.	Annual	When levels of these two pollutants exceed the objectives.	If the objectives are not being met an AQMA will be declared and a Local Air Quality Action Plan will be produced to improve air quality within that area.
Days when air pollution is moderate or high (LSF Indicator).	Continuous	When the number of days when 1-hour mean for NO_2 and 24-hour mean for PM_{10} exceed the objectives is higher than permitted.	If the objectives are not being met an AQMA will be declared and a Local Air Quality Action Plan will be produced to improve the air quality.
Levels of NO_2 / PM_{10} at or near sites planned for future development.	Annual	At the stage of air quality assessment if levels of these two pollutants exceed the objectives.	Greater weight must be given to the consideration of air quality impacts and their mitigation. This should address not only the impacts in the immediate vicinity of the development but also the wider impacts on air quality within the AQMA.
Change in number and extent of designated AQMAs	Annual	At the stage of air quality assessment if levels of NO_2/ PM_{10} have continuously exceeded the objectives.	If the objectives are not being met an AQMA will be declared and a Local Air Quality Action Plan will be produced to improve the air quality within that area.
Total NO_x and PM_{10} emissions	Annual	When levels of these two pollutants show no reductions over the years of the Plan's implementation.	If levels of NO_2 and/or PM_{10} emissions - show no reductions it will be necessary to identify the cause and undertake an appropriate remedial action.

Table 7.2 Indicators and targets for Air Quality Strategy

Indicator name	Description	Target & Baseline	Rationale
AQ1 – Revocation of AQMAs located on the county road network	Number of AQMAs located on the county road network which are revoked	Target is: The revocation of 2 AQMAs located on the county road network during 2011-2015. Will report annually to Surrey Air Quality Group, and in any published Progress Report.	Specific – Clear target set Measurable – Based on revocations of AQMAs by borough/district councils Achievable – This will depend on a combination of factors, including patterns of traffic growth, changes in the petrol: diesel mix of vehicles, realistic solutions and investment in the implementation of such solutions Relevant – This relates to experienced air quality on the county road network Time-based – Yes

Appendix A: AQMAs within Runnymede

Figure A 1 Boundaries of the M25 AQMA (declared in November 2001)

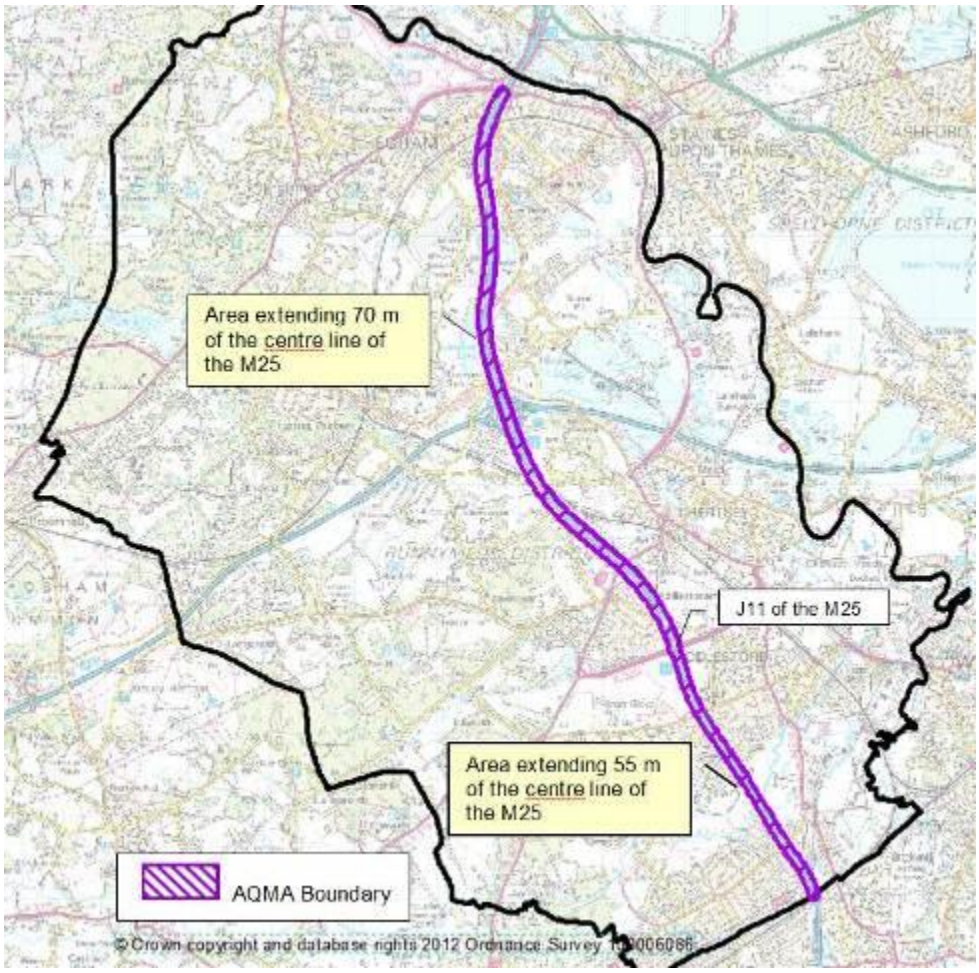


Figure A 2 M25 traffic between junctions 10 and 11 at mid-day

Figure A 3 Boundaries of Addlestone AQMA (declared in July 2008)

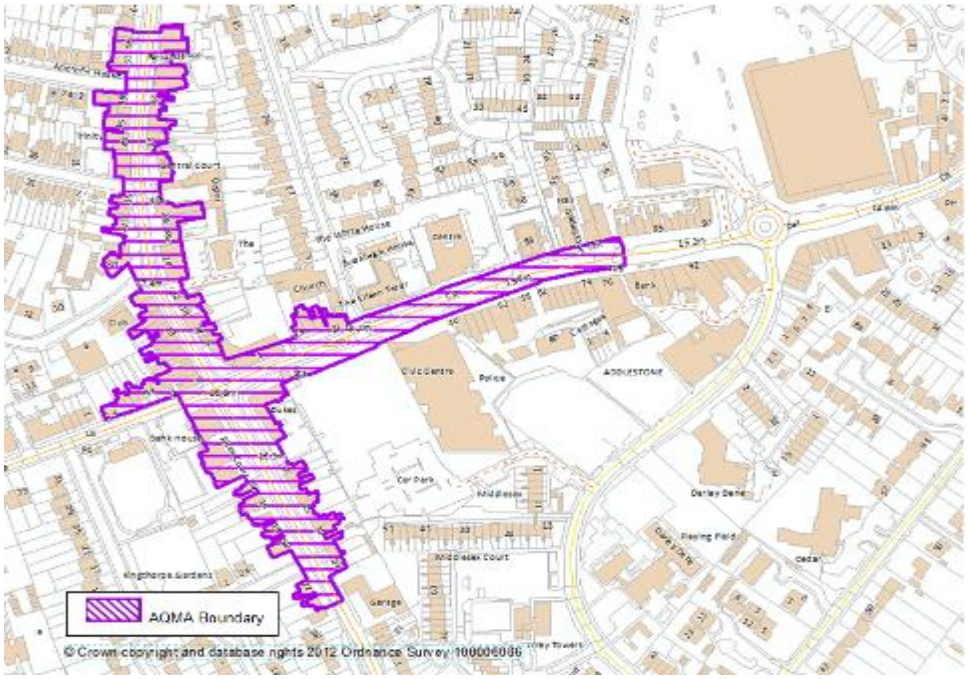


Figure A 4 Photos of Addlestone AQMA (Station Road)

Appendix B: PPC Installations within Runnymede

Permitted Facilities in the Runnymede Borough Council Area
Under the Pollution Prevention Control Act 1999

Part B Facilities

Permit Number	Type of Activity	Operators Name and Site Contact	Permitted Address
PPC4(2)	Sec 3.1 Cement Mortar Batching	Lafarge Aggregates Limited. Mr G Sturgess 07972 533643	Longside, Thorpe Lea Road, Egham, Surrey, TW20 8RH
PPC7(2) EP	Sec 6.4 Respraying Road Vehicles	Medcalf & Company (Coachbuilders) Limited. Mr Angelo Scandone 01932 563026	Medcalf & Company (Coachbuilders) Limited, Fordwater Trading Estate, Fordwater Road, Chertsey, Surrey, KT16 8HG
PPC8(2) EP	Sec 6.4 Respraying Road Vehicles	LA Coachworks (Weybridge) Limited. Mr Paul Mullen 01932 858879	LA Coachworks (Weybridge) Limited, Byron Road, Addlestone, Surrey, KT15 2SY
PPC10(1)	Sec 3.5 Mobile Crusher	Capital Demolition Limited. Mr Dennis Read 01932 346222	Capital Demolition Limited, Capital House, Woodham Park Road, Woodham, Addlestone, Surrey, KT15 3TG
PPC15(2) EP	Sec 6.4 Respraying Road Vehicles	Mr David Hutchens, trading as Panel-wise. Mr David Hutchens 01932 856460	Mr David Hutchens, trading as Panel-wise, Hamm Moor Lane, Weybridge Trading Estate, Weybridge, Surrey, KT15 2SD
PPC18(4) EP10	Sec 1.2 Petrol Storage	Wheatsheaf Service Station. Service Station 01344 846130	Wheatsheaf Service Station, London Road, Virginia Water, Surrey, GU25 4QE
PPC19(3) EP10	Sec 1.2 Petrol Storage	Shell Thorpe Lea Road. Service Station 01784 455970	Shell Thorpe Lea Road, 171 Thorpe Lea Road, Egham, Surrey, TW20 8HP
PPC20(3) EP	Sec 1.2 Petrol Storage	Shell Ottershaw. Service Station 01932 879930	Shell Ottershaw, Guildford Road, Ottershaw, Chertsey Surrey, KT16 PG

Permit Number	Type of Activity	Operators Name and Site Contact	Permitted Address
PPC21(3) EP	Sec 1.2 Petrol Storage	Trident Garages Limited. Service Station 01932 874411	Trident Garages Limited, Guildford Road, Ottershaw, Chertsey, KT16 0NZ
PPC22(2)	Sec 1.2 Petrol Storage	Staines Service Station. Service Station 01784 463572	Staines Service Station, Chertsey Lane, Staines, Middlesex, TW18 3LS
PPC23(4) EP10	Sec 1.2 Petrol Storage	Shell Addlestone. Service Station 01932 839960	Shell Addlestone, Chertsey Road, Addlestone, Surrey, KT15 2ED
PPC24(3) EP	Sec 1.2 Petrol Storage	Shell Egham. Service Station 01784 430930	Shell Egham, 186/7 High Street, Egham, Surrey, TW20 9DX
PPC25(2)	Sec 1.2 Petrol Storage	Chertsey Service Station. Service Station 01932 562702	Chertsey Service Station, 102 Bridge Road, Chertsey, Surrey, KT16 7LR
PPC26(3)	Sec 1.2 Petrol Storage	Runnymede Service Station. Service Station 01784 485982	Runnymede Service Station, 38-45 The Avenue, Egham, Surrey, TW20 9AD
PPC28(3) EP	Sec 1.2 Petrol Storage	Egham Hill SF Connect. Service Station 01784 497589	Egham Hill SF Connect, 1 Egham Hill, Egham, Surrey, TW20 0ET
PPC30(2) EP	Sec 1.2 Petrol Storage	Sainsbury Supermarkets Limited. Service Station 01784 456644	Sainsbury Supermarkets Ltd, The causeway, Staines, Middlesex, TW18 3AG
PPC33(2) EP	Sec 1.2 Petrol Storage	Sainsbury Supermarkets Limited. Service Station 01932 566503	1 The Sainsbury Centre Heriot Road Chertsey Surrey KT16 9AQ
PPC36(2) EP	Sec 1.2 Petrol Storage	Tesco Filling Station. Service Station 01932 741407 if you have problems, contact Andy Berry at Tesco Andy.Berry@uk.tesco.com	Tesco Filling Station, 117 Station Road, Addlestone, Surrey, KT15 2AS
PPC37(1)	Sec 3.5 Mobile	Capital Demolition Limited. Mr Dennis Read	Capital Demolition Limited, Capital House, Woodham Park Road,

	Crusher	01932 346222	Woodham, Addlestone, Surrey, KT15 3TG
PPC40(1)	Sec 7 Dry Cleaners	Zekmur Bros Limited. Mr Kusdil 01932 847411	Zeki Dry Cleaner & Laundry, 83 Station Road, Addlestone, surrey, KT15 2AR
PPC41(3) EP	Sec 6.4 Respraying Road Vehicles	Chertsey Car Care Ltd. Mr Martin Morgan 01932 560690	Chertsey Car Care Ltd. Crystal Haven House, Hanworth Lane Trading Estate, Chertsey, Surrey, KT16 9JX
PPC44	Sec 7 Dry Cleaning	Lampton Cleaners Ltd T/A Harringtons. Michael Corby 1784 433439	9 Station Approach Virginia Water Surrey GU25 4DW
PPC46	Sec 7 Dry Cleaning	Saphire Dry Cleaners Mrs S Waters 01932 353735	15 The Broadway New Haw Addlestone Surrey KT15 3EU
PPC47	Sec 7 Dry Cleaning	Softly Clean Dry Cleaners T/A Softly Clean Mr A Cachra 01932 851900	1 High Street Addlestone Surrey KT15 1TL
PPC50	Sec 7 Dry Cleaning	Egham Dry Cleaners Mr B Tamraz 01784 477300	44 High Street Egham Surrey TW20 9DP
PPC51	Sec 7 Dry Cleaning	Johnson Dry Cleaners Mr Darryl Neville 02073521763 07949050662	Sainsbury's The Causeway, Staines, TW18 3AP
PPC52 EP	Sec 7 Dry Cleaning	Direct Dry Cleaning Mr Paul MaGill 01737 361666 07947 780807	Direct Dry Cleaning, Unit 2 Fordwater, Trading Estate, Ford Road, Chertsey, Surrey, KT16 8HG
PPC53 EP	Sec 3.5 Mobile Crusher	Cemex UK Materials Limited	Cemex UK Materials Limited, Cemex House, Coldharbour Lane, Thorpe, Egham, Surrey, TW20 8TD
PPC54 EP	Sec 3.5 Mobile Crusher	Cemex UK Materials Limited	Cemex UK Materials Limited, Cemex House, Coldharbour Lane, Thorpe, Egham, Surrey, TW20 8TD
PPC55 EP	Sec 3.5 Mobile Roadstone Coating	Cemex UK Materials Limited	Cemex UK Materials Limited, Cemex House, Coldharbour Lane, Thorpe, Egham, Surrey, TW20 8TD
PPC 56 EP	Sec 7 Dry Cleaning	Riva Dry Cleaners Mr Fiaz Ahmad (Manager) 01932 560555	3 Burwood Parade, Guildford Street, Chertsey, KT16 9AE
PPC57 EP	Sec 3.5 Mobile Batching Plant	Cemex UK Materials Limited	Cemex UK Materials Limited, Cemex House, Coldharbour Lane, Thorpe, Egham, Surrey, TW20 8TD
PPC58	Sec 3.5 Mobile Batching Plant	Cemex UK Materials Limited	Cemex UK Materials Limited, Cemex House, Coldharbour Lane, Thorpe, Egham, Surrey, TW20

EP			8TD
PPC59 EP10	Sec 3.5 Mobile Crusher	Cemex UK Materials Limited	Cemex UK Materials Limited, Cemex House, Coldharbour Lane, Thorpe, Egham, Surrey, TW20 8TD
PPC60 EP10	Sec 3.5 Mobile Crusher	Cemex UK Materials Limited	Cemex UK Materials Limited, Cemex House, Coldharbour Lane, Thorpe, Egham, Surrey, TW20 8TD

Part A2 Facilities

None

Part A1 Facilities– Permitted and Regulated by the Environment Agency

Permit Number	Type of Activity	Operators Name	Permitted Address
AP3039SD	Sec 5.1 A(1)(a) And 5.1 A(1)(d) Incineration	The Veterinary Laboratories Agency.	The Weybridge Incineration Plant, Veterinary Laboratories Agency, Woodham Lane, New Haw, Addlestone, KT15 3NB
WP3635SJ	Sec 5.2A(1)(b) Disposal of waste in landfil	Cemex UK Materials Limited.	Cemex UK Materials Limited, Addlestone Quarry, Byfleet Road, Addlestone, Weybridge, Surrey, KT15 3LA
CP3334LF	Sec 5.2A(1)(b) Disposal of waste in landfil	Cemex UK Materials Limited	Cemex UK Materials Limited, Norlands Lane, Thorpe, Egham, Surrey, TW20 8SS
EPR/DP3090SF	Sec 5.3 Disposal of waste other than by incineration or landfill. (Sewage Sludge Treatment, less than 250,000tpa)	Thames Water Utilities Ltd, Chertsey Sewage Treatment Works	Thames Water Utilities Ltd, Chertsey Sewage Treatment Works, Lyne Lane, Lyne, Chertsey, KT16 0AR
EA/EPR/DP3691EF/A001 (EAWML 101006)	Permit application for the composting of green waste	Collier Environmental services Ltd, Trumps Farm, Kitsmead Lane, Longcross, Chertsey, Surrey, KT16 0EF	Collier Environmental services Ltd, Trumps Farm, Kitsmead Lane, Longcross, Chertsey, Surrey, KT16 0EF
EA/EPR/HP3132TV/A001 At application stage Oct 2010	CHP Sec 1.1, Part A(1) (b) (iii)	Thames Water Utilities Ltd, Chertsey Sewage Treatment Works	Thames Water Utilities Ltd, Chertsey Sewage Treatment Works, Lyne Lane, Lyne, Chertsey, KT16 0AR
EA/EPR/FP3293ET/V004 (EAWML 83061)	Permit for the Civic Amenity Site	Sita Surrey Ltd,	Sita Surrey Ltd, Lyne Lane CAS, Lyne Lane, Thorpe, KT16 0AP

EPR/HB3733RP/A001	Standard rules environmental Permit 2010 No.12 (waste activity soil/aggregate)	Dennis Read, Capital House	Capital Demolition Limited, Capital House, Woodham Park Road, Woodham, Addlestone, Surrey, KT15 3TG
EPR/PP3599EZ/S003 Received 28 Nov 2012	Application for an Environmental Permit	Thorpe Park Operations Ltd	Thorpe Park, Staines Road, Chertsey, Surrey, KT16 8PN

Note: EP = Documentation updated to the Environmental Permitting Regulations.

Updated November 2012

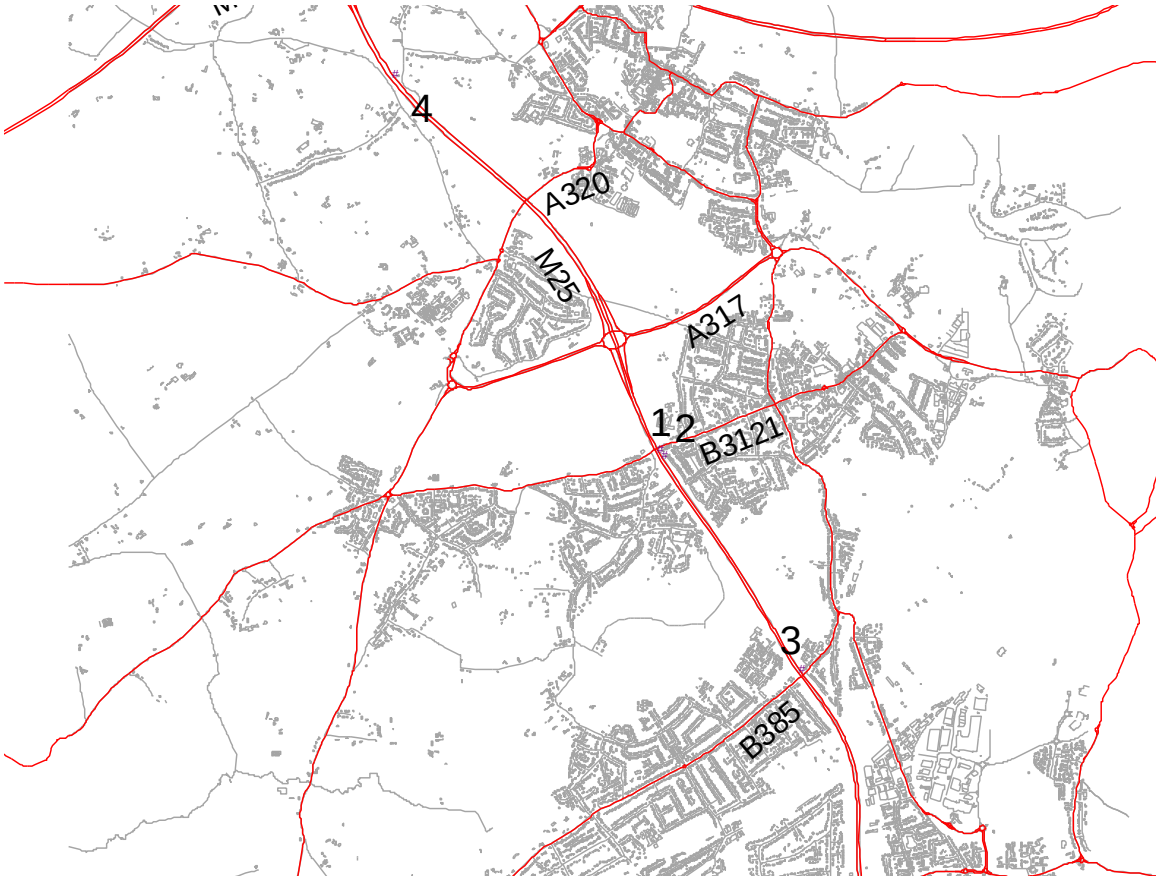
Appendix C: Source Apportionment Sites in Runnymede BC

Table C 1 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 C 1 The location of facades identified near to the AQMAs



(Note – locations 1 and 2 are close together)

Appendix D: Consultee List

The Secretary of State	DEFRA	Ms Tutu Aluko AQ Division Ergon House Horseferry Road London SW1P 2AL tutu.aluko@DEFRA.GSI.GOV.UK
The Environment Agency	▪ enquiries@environment-agency.gov.uk ▪ Mr John Woodhouse Planning Liaison Officer john.woodhouse@environment-agency.gov.uk ▪ Mrs Marie Martin Sustainable Places - Major Projects Officer (Planning) marie.martin@environment-agency.gov.uk	
The highways authority	▪ Surrey County Council	Surrey County Council Transport DC Transport Development Planning Principal Transport Development Planning Officer Ms Kerry James kerry.james@surreycc.gov.uk Mr Jason Gosden Senior Engineer, North West Area Team jason.gosden@surreycc.gov.uk Mr Andrew Merritt Transport Planner andrew.merritt@surreycc.gov.uk
	▪ Connect Plus Services – Highways Agency	Mr Graeme Worsley Environment Manager Connect Plus Services, Leatherhead Motorway Compound, Bypass Road, Leatherhead, Surrey KT22 7GZ Highways Agency South East Graeme.Worsley@connectplusm25.co.uk
Neighbouring local authorities	▪ **Windsor & Maidenhead** Mr Feliciano Cirimele Environmental Protection Officer feliciano.cirimele@rbwm.gov.uk ▪ **Spelthorne BC** Mrs Tracey Willmott-French Senior Environmental Health Manager T.Willmott-French@spelthorne.gov.uk ▪ **Elmbridge BC** envhealth@elmbridge.gov.uk ▪ **Woking** Mr Joseph Dutfield Environment Officer Joseph.Dutfield@woking.gov.uk environmentalhealth@woking.gov.uk ▪ **Surrey Heath** Mr James Robinson Senior Environmental Heath Practitioner James.Robinson@surreyheath.gov.uk environmental.health@surreyheath.gov.uk	
Natural England	▪ consultations@naturalengland.org.uk ▪ Ms Heather Twizell Lead Adviser Land Use Operations	

	Natural England Heather.Twizell@naturalengland.org.uk Ms Julia Coneybeer Lead advisor, Land Use Operations – Ashford Julia.coneybeer@naturalengland.gov.uk	
National Health Service	North West Surrey Clinical Commissioning Group Contactus2@nwsurreyccg.nhs.uk	
Bodies representing local business interests and other organisations as appropriate; community groups and forums	▪ Addlestone Bournside and Addlestone North Task Group	▪ Suzanne.Harrison@runnymede.gov.uk
	▪ Transport for Surrey Partnership and Surrey Strategic Partnership	▪ tfspartnership@surreycc.gov.uk
	▪ Network Rail	▪ Mr Sam Pead Operations Risk Advisor Sam.PEAD@networkrail.co.uk
	▪ Enterprise M3	▪ info@enterprisem3.org.uk