EPSOM & EWELL BOROUGH COUNCIL

Part IV of the Environment Act 1995: Local Air Quality Management

Air Quality Action Plan and Further Assessment of Air Quality for Ewell High Street

2010

Executive Summary

This report comprises the Stage IV further assessment and action plan components of the local authority review and assessment process and fulfils this local authority's statutory requirement under Part IV of the Environment Act 1995 and relevant regulations made under that part to work towards the air quality objectives.

Previous rounds of review and assessment have identified areas in the centre of Ewell where the annual mean nitrogen dioxide concentrations exceed air quality objectives where there is relevant public exposure; this area has been declared an Air Quality Management Area.

The aim of the Stage IV further assessment component of this report was to confirm the exceedence of the annual mean air quality objective for nitrogen dioxide within the AQMA and the delineation of the AQMA boundary; quantify the improvement in air quality and reduction in emissions required to meet the objective and identify the relevant sources of emissions. Modelling confirmed that the annual mean nitrogen dioxide objective of 40µg.m^{-3} is exceeded in the Ewell AQMA but over a slightly greater area than previously identified; the AQMA boundary will need to be amended to incorporate areas exceeding the annual mean nitrogen dioxide level where there is relevant exposure.

Road traffic sources were identified as the most significant source of pollution, contributing to 65% of nitrous oxides (background concentration of nitrous oxides represented 35%). The car category (including all cars, taxis and motorcycles) was responsible for the largest individual contribution at 28%, compared to 8-10% for LGVs, 10-15% for buses and 1% for HGVs. This indicated that measures in the action plan should be targeted specifically at reducing emissions in the car category. Further modelling work indicated that measures to slightly reduce and alter traffic flow would be insufficient to achieve the annual mean objective.

The second component of the report considers all available measures to address the identified sources and reduce nitrogen dioxide concentrations to below the annual mean objective within the AQMA together with a simple appraisal of costs, benefits and feasibility for each proposal.

The proposals detailed in this action plan have been subject to public consultation and the preferred measures selected after further investigation of their feasibility. Modelling of effect on traffic flow/air quality and detailed cost benefit analysis of each proposal has not been possible at this stage of the process due to time and resource constraints but will be carried out as a part of a more in depth feasibility study of preferred options should they be taken further.

Proposals range from large scale traffic management schemes to smaller scale traffic management proposals and parking and stopping restrictions to be considered in the medium to short term. It is anticipated that the air quality action plan will form part of a wider strategic plan for Ewell Village.

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Glossary of Terms

ANPR – Automatic number plate recognition
AQMA – Air Quality Management Area
DEFRA – Department of Environment Transport and Rural Affairs
EEBC – Epsom & Ewell Borough Council
HGV – Heavy Goods Vehicles
LGV – Light Goods Vehicles
LTP – Local Transport Plan
MOVA – Microprocessor Optimised Vehicle Actuation
NO_2 – Nitrogen Dioxide
NO_x – Oxides of Nitrogen
PM_{10} – Particles of size less than 10 microns in diameter
SCC – Surrey County Council
VOSA – Vehicle and Operator Services Agency

µg m^{-3} – Microgrammes per metre cubed

1.0 Introduction and Aims

1.1 Overview

This report comprises the Stage IV further assessment and action plan components of the local authority review and assessment process and fulfils this local authority's statutory requirement under Part IV of the Environment Act 1995 and relevant regulations made under that part to work towards the air quality objectives.

1.2 Epsom & Ewell Borough Council area

The area served by the Epsom & Ewell Borough Council (EEBC) is a relatively small and predominantly urban area located within the M25 motorway to the south west of London. It has a population of approximately 72,400 (2008 estimate) and is the most densely populated Council area in Surrey. The total area covered by the Council is just over 34km^2. The main employment in the area is service related, with the town of Epsom being the main centre for employment.

The area is well served by transport links to London and the rest of the country via road. A network of subsidiary routes connects with other towns and centres of population to southwest London and the rest of Surrey. The roads in the area and high proportion of car availability means that traffic congestion and high traffic flows are a feature of the area.

There are a few minor industrial processes that are regulated by the Council and no larger industrial processes regulated by the Environment Agency (including waste water treatment works) in or near the Council's area.

1.3 Background

Under the Environment Act 1995, Epsom & Ewell Borough Council is required to review and assess air quality against the objectives in the Air Quality Regulations 2000 and the amendment regulations as part of a rolling three-year cycle ending in 2017. The air quality objectives to be assessed are for the following seven pollutants: carbon monoxide, benzene, 1,3-butadiene, lead, nitrogen dioxide (NO_2), sulphur dioxide and particles (PM_{10}).

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) were included for some pollutants.

The role of the local authority Review and Assessment process is to identify any relevant areas where it is considered that the government's air quality objectives for the above air pollutants will be exceeded. Earlier rounds of review and assessment carried out by the local authority identified an exceedence of the annual mean objective for nitrogen dioxide (NO_2) in an area of relevant public exposure on a section of Ewell High Street. EEBC declared an air quality management area (AQMA) on this section of Ewell High Street and surrounding streets in July 2007; Figure 1 delineates the AQMA boundary.

A 12-month period of automatic monitoring of NO_2 commenced in September 2008. The Council is has been required to produce a further assessment based on this data to confirm the exceedence of the annual mean NO_2 objective, define the improvement in air quality and reduction in emissions required to attain the objective and assess the contribution of different sources of NO_2 within the AQMA. The findings of this further assessment will enable the local authority to target the most important sources and focus the principle measures within the action plan. This further assessment appears as appendix one to this report and forms the technical appendix.

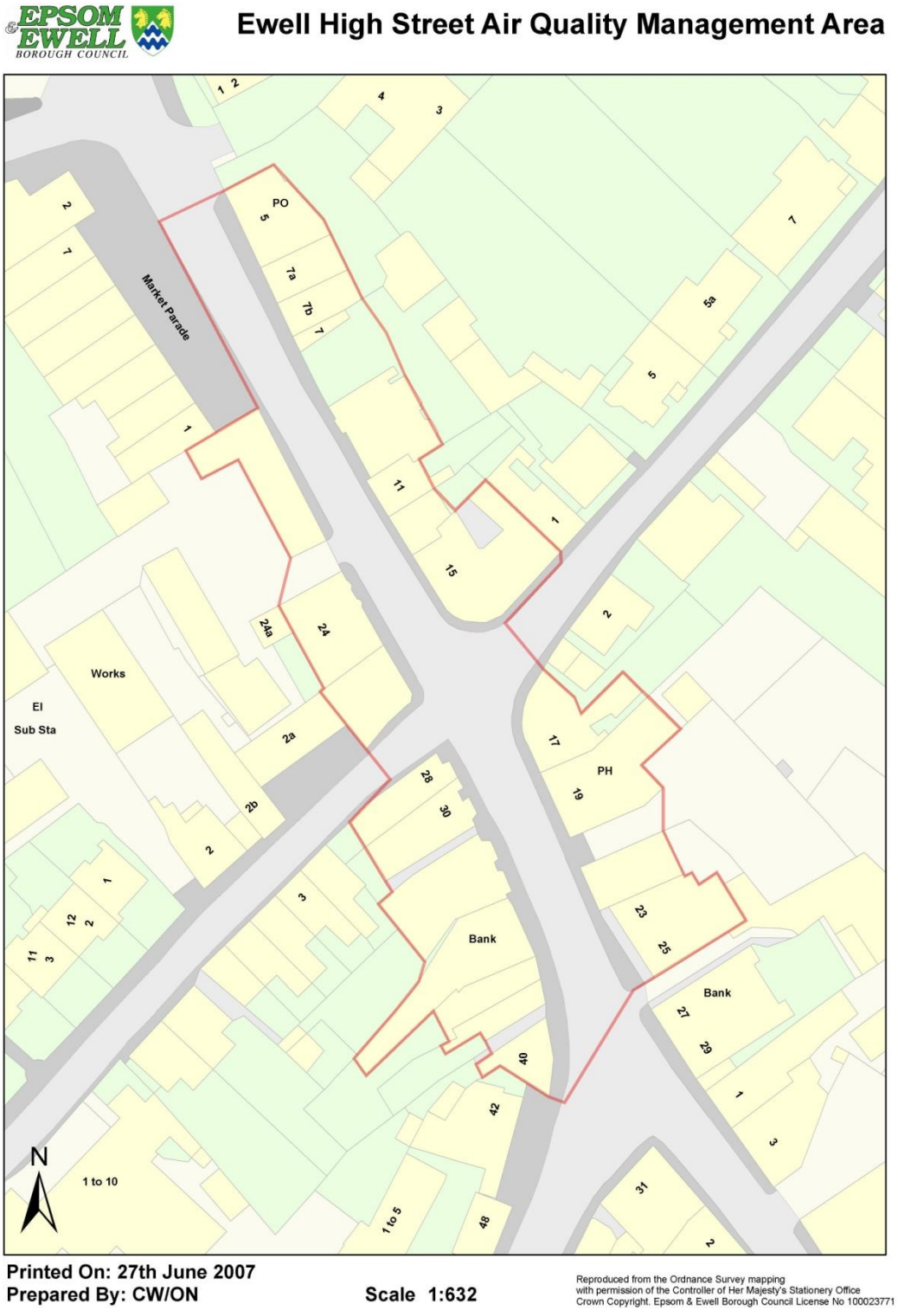

Figure 1 AQMA Boundary

1.4 Aims

The aim of this report is to:

- Confirm the exceedence of the annual mean air quality objective for NO_2 in an area of relevant public exposure within the AQMA.
- Confirm delineation of the AQMA boundary
- Quantify the improvement in air quality and reduction in emissions required to meet the mean annual NO_2 objective.
- Carry out source apportionment to identify where initiatives should be targeted in the action plan.
- Consider the impact of any new developments within the AQMA
- Consider all available measures to address the identified sources and reduce NO_2 concentrations to below the annual mean objective within the AQMA.
- Provide a simple appraisal of costs, benefits and feasibility for each proposal.

The proposals detailed have been the subject of a consultation and the preferred measures have been selected for further investigation of their feasibility. In many cases this will include modeling of the impact on emissions and for traffic management measures, modeling of the impact elsewhere on the transport network. Please note that this document does not provide an exclusive list of measures and is it anticipated that further options may be highlighted and existing options will evolve.

2.0 Summary of findings of Further Assessment

The Further Assessment component of this report was carried out by ERG, Kings College London on behalf of the local authority. The full version of this document is located in appendix 1; this section of the report comprises a summary of the findings.

The further assessment is a requirement of Section 84(1) of the Environment Act 1995 following designation of an air quality management area. The main aims of the further assessment are to confirm the original assessment of air quality against the prescribed objectives, to confirm delineation of the AQMA boundary and to calculate more accurately the improvement in air quality required to deliver the air quality objectives within the AQMA.

Revised modelling predictions of the annual mean NO_2 concentration at the four monitoring sites within the AQMA for the 2008 base case confirmed that the air quality objective is exceeded in the AQMA and in other nearby areas close to the centre of roads and close to junctions; the AQMA will be amended to incorporate this area if it is found to be an area of relevant public exposure. Figure 2 below highlights this increased area of exceedence of the objective which includes the façade of properties in Market Parade and properties at the southern end of the High Street.

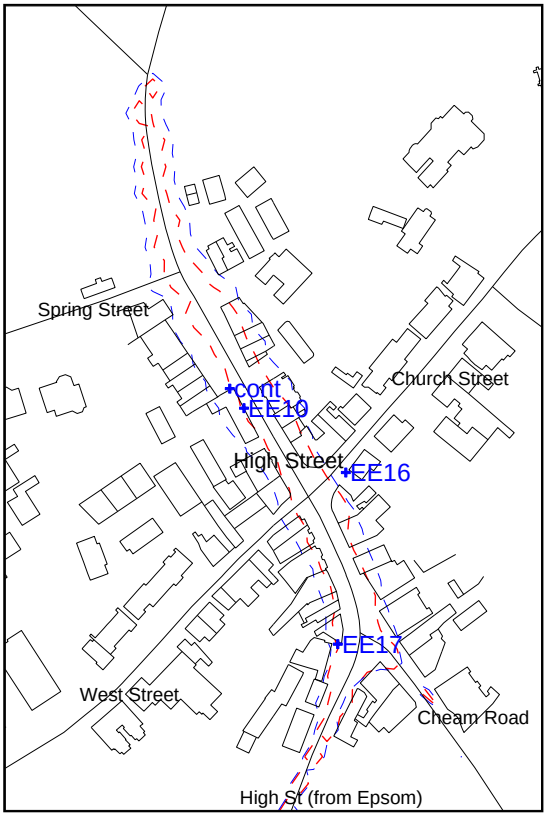

Figure 2 Comparison of areas predicted to exceed the objective
(red - Detailed Assessment; blue - Further Assessment)

Table 1 compares the monitored and modeled 2008 annual mean NO_2 concentrations at each monitoring location and gives an indication of the reduction in NO_2 required in order to meet the annual mean NO_2 objective of 40 µg m^{-3}.

Site	Modelled	Monitored
Continuous	48.9	48.8
EE10	52.9	63.1
EE16	37.3	36.9
EE17	44.3	42.6

Table 1 Monitored and modelled 2008 annual mean NO_2 concentrations (µg m^{-3})
(Note – table features verified modelled results and bias adjusted monitored results. Continuous refers to continuous automatic NOx analyser)

To better understand the improvement required to meet the annual mean NO_2 objective, the individual source emissions that contribute to the overall predicted pollution concentration were determined for individual categories of the vehicle fleet, given that the major influence for this AQMA is road transport. Figure 3 shows source contribution (excluding background concentration) at each of the four monitoring sites within the AQMA and mean contribution across all four sites. For NO_2, the contribution that different sources make to the predicted concentration is understood by examining the contribution of nitrous oxides (NOx) sources as the primary emissions.

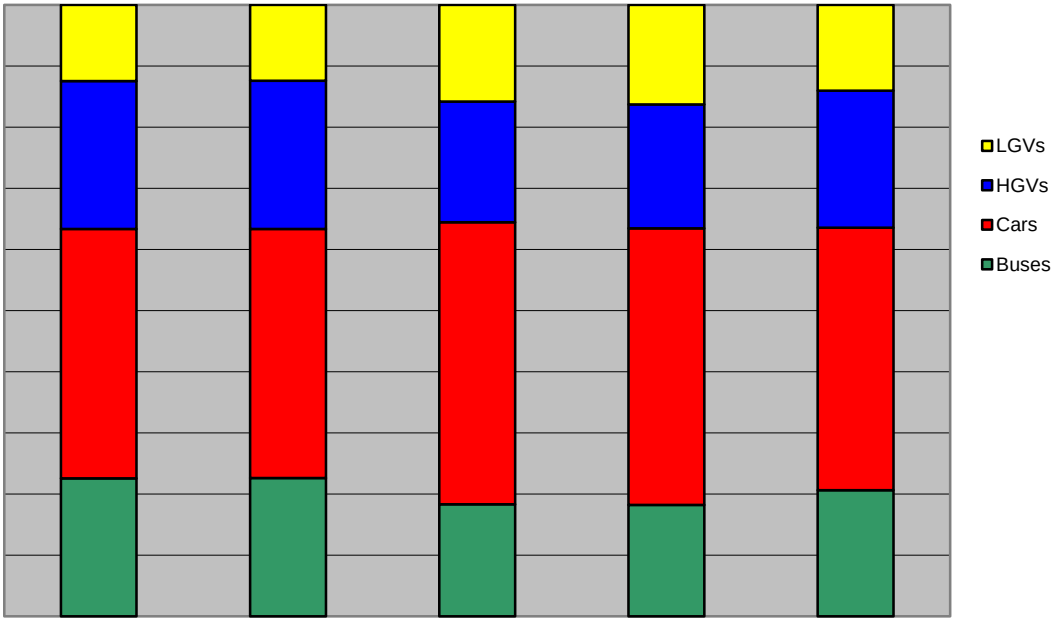

Figure 3 Source contribution (excluding background)

The car category (all cars, taxis and motorcycles) made the largest individual contribution at the four monitoring locations examined; mean 28%, exceeding the contribution of both buses and Light Goods Vehicles (LGVs) combined for all locations. For each of the sites the smallest individual contribution relates to LGVs (petrol & diesel) which total 8-10% of total contribution of NOx at each site. The contribution from buses is slightly less than that for HGVs at all sites, and is around 10 to 15%, with HGVs about 1% more at each location.

Two scenarios were modelled to indicate the level of intervention required in order for the Council to work towards achieving the statutory annual mean air quality objective for NO_2 within the AQMA. These scenarios were:

1. The 2008 verified base case with a 10% reduction in vehicles (non-HGVs only). The change is assumed to be equal across all non-HGV vehicle categories.

2. The 2008 verified base case with a 10% reduction in HGVs only, all other vehicle categories were unchanged.

Table 2 summarises the results of this modelling. It was found that at all locations, for both scenarios tested there was only a slight reduction in NO_2 concentrations from the 2008 base case due to reduced vehicle flows. The reduction is not large enough for any site to meet the 2005 annual mean air quality objective for NO_2. The 2008 with reduced HGVs scenario results in higher predicted concentrations than the 2008 reduced non-HGV scenario. The reduction from the base case is around 0.5 µg m^{-3}. Although there are inherent limitations to modelling, particularly on a narrow congested street such as Ewell High Street, these findings indicate that small scale measures to reduce traffic flow will be insufficient to achieve the annual mean objective.

Site	2008 (-10% non-HGVs)	2008 (-10% HGVs)	2008 (base case)
Continuous	47.8	48.4	48.9
EE10	51.5	52.3	52.9
EE16	36.7	37.1	37.3
EE17	43.3	43.9	44.3

Table 2 Predicted annual mean concentrations of NO_2 (µg m^{-3}) at monitored locations

Overall, the further assessment recommends retaining the existing AQMA and amending it to incorporate those areas fringing it that exceed the objective if relevant exposure is confirmed.

3.0 Policy context, existing strategies and consultation

A number of policies and plans at a local and regional level support the improvement of air quality within the borough:

3.1 Ewell Village Study

The air quality action plan will form part of a wider strategic plan for Ewell Village aimed at addressing issues related to the environment and village identity including accessibility for pedestrians, reducing non-village through traffic and examining the impacts of parking and deliveries; this will be developed in association with Transport for Surrey (Surrey County Council), local residents, businesses and members.

EEBC has worked closely with Transport for Surrey in the development of the air quality action plan with the aim of integrating the two strategies. Improvements in air quality will contribute to and be complemented by wider improvements in the local environment.

3.2 Local Transport Plan

Local road transport has been identified as a major source of local air pollution; DEFRA recommends the integration of air quality and local transport plans (LTP) where this is the case[1]. The next Surrey Local Transport Plan will be published in April 2011 therefore integration of the two at this stage is not possible due to conflicting time scales. However the action plan will be available for integration into the local transport plan. EEBC consider this to be appropriate because:

- Road transport is a significant contributor to air pollution within the AQMA and the borough as a whole;
- Integration into the LTP will raise the profile of air quality issues;
- It will encourage closer working between EEBC and the County Council on air quality matters and a more focused joined-up approach to addressing the issue;
- It will assist in funding of actions proposed in the air quality action plan;

[1] DEFRA 2009 Local Air Quality Management Policy Guidance: LAQM.PG(09)

3.3 Surrey County Council Climate Change Strategy 2009

This strategy sets out long-term vision and key objectives for addressing climate change within Surrey. The objectives will be delivered through a climate change action plan which sets out in greater detail the specific work to be undertaken. The strategy on climate change will be coordinated with related activities on sustainable development including measures to improve air quality[2].

[2] Surrey County Council. 2009. Surrey County Council Climate Change Strategy.

3.4 Epsom & Ewell Core Strategy

Epsom & Ewell Borough Council adopted the Core Strategy on the 24th July 2007. This is the first part of the new Local Development Framework which will eventually replace the district wide local plan. Ultimately the development plan for the Borough will comprise the Council's Local Development Framework and the Minerals and Waste Development Framework prepared by Surrey County Council. The Core Strategy provides a long-term planning vision for the Borough and the overall framework in which more detailed plans will be drawn up. The Core Strategy identifies the key issues and social, economic and environmental objectives for future development in the borough up until 2022. Sustainable development is at the core of the policies contained within the plan. Two objectives of the Core Strategy which will influence air quality in the borough include:

- Minimising the need to travel and encouraging opportunities for trips to be made by alternative modes of travel to the motor car.
- Encouraging highway safety and environmental improvement measures which decrease the detrimental impacts of high volumes of traffic.

The Core Strategy itself does not address detailed policy issues but does include policy principles on which sustainable development will be achieved. Those which will have a specific impact on air quality include:

CS 6 – Proposals for development should result in a sustainable environment and reduce, or have neutral impact upon pollution and climate change. The Council will expect proposals to demonstrate how sustainable construction and design can be incorporated to improve the energy efficiency of development – both new build and conversion. The Council will ensure that new development minimises the emission of pollutants into the wider environment.

CS16 – Encouragement will be given to development proposals and management policies which foster an improved and integrated transport network and facilitate a shift in emphasis to non-car modes as a means of access to services and facilities. In particular the Council will work with the County Council and other relevant agencies in Epsom town centre to reduce the impact of roads and traffic movement, to support the development of opportunities for the use of public transport and to enhance the pedestrian environment.

In addition to these principles there is also an overarching principle which will apply to all new developments:

CS1 - The Council will expect the development and use of the land to contribute positively to the social, economic and environmental improvements necessary to achieve sustainable development – both in Epsom & Ewell and more widely. Changes should protect and enhance the natural and built environments of the borough and should achieve high quality sustainable environments for the present and protect the quality of life of future generations.

Development proposals will be required to be consistent with, and contribute to, the implementation of the Surrey Local Transport Plan and should:

- Minimise the need for travel, through measures such as travel plans for the provision or enhancement of local services and facilities.

- Be appropriate for the highways network in terms of the volume and nature of traffic generated
- Avoid highway improvements which harm the environment and the character of the area
- Ensure that vehicular traffic generated does not create new, or exacerbate existing, on street parking problems, nor materially increase other traffic problems.
- All major developments should be well located for convenient access by non-car modes, including walking, cycling and high quality public transport.
- This policy has set a target that all major residential and commercial development should encourage the use of non-car modes of transport and all major developments should be within 30 minutes public transport time of health, education, retail and employment facilities. This will be achieved through negotiation over developer contributions and S106 agreements[3].

[3] Epsom & Ewell Borough Council. 2007. Core Strategy 2007.

4.0 Proposals

The following proposals can be broadly divided into:

1. Large scale traffic management proposals to be considered in the longer term;
2. Smaller scale traffic management proposals to be considered in short to medium term;
3. Parking and stopping restrictions in Ewell Village;
4. Supporting measures.

The boxed text for each proposal details specific objectives if it is determined following consultation that the measure is developed further.

For traffic management schemes detailed below a feasibility study will be carried out which would include modelling of the impact on vehicle emissions and the impact of the measure elsewhere on the transport network.

1. Traffic Management Proposals

a) Pedestrianise a section of Ewell High Street between the junction with Spring Street and mini-roundabout at the intersection with Cheam Road as part of the Kiln Lane Link major scheme

Pedestrianising the High Street would result in an obvious reduction in traffic volume and consequently, an improvement in air quality. This is a long term measure and given the costs involved and potential disruption to the road network within the borough, it is proposed that this option be considered as part of the Kiln Lane link scheme which has currently been postponed until after 2016. The Kiln Lane link and associated measures is a major scheme as defined in the local transport plan. It is a proposed road crossing underneath the Waterloo to Epsom railway line linking the A24 East Street with Longmead Road through Longmead and Nonsuch Business and Retail Parks to improve local accessibility by removing the barrier the railway causes to east-west movement. The construction of this link will be associated with additional measures to improve the transport network; it is proposed that one such measure is the pedestrianisation of Ewell High Street and alteration of the network to develop a prescribed route away from Ewell Village.

The Kiln Lane link scheme will provide an opportunity to examine and improve the infrastructure within the borough on a large scale. Pedestrianisation is proposed as part of this plan as it is believed that without the support of the major scheme, this proposal would not be considered.

Action if taken forward
Epsom & Ewell Borough Council will work in partnership with colleagues at Surrey County Council to discuss the feasibility of incorporating pedestrianisation of Ewell High Street and measures to reduce the volume of traffic through Ewell Village into the Kiln Lane link major scheme.

b) Pedestrianise a section of Ewell High Street between junction with Spring Street and mini-roundabout at intersection with Cheam Road without the Kiln Lane Link major scheme

The consultation responses indicated a preference to consider pedestrianisation only in conjunction with the Kiln Lane Link and ideally pedestrianisation would take place after a substantial reduction in traffic volume provided by this link. However the distant implementation date of this scheme makes it prudent to at least consider the options for pedestrianisation prior to the Link coming to fruition.

Action if taken forward
Epsom & Ewell Borough Council will work in partnership with colleagues at Surrey County Council to discuss the feasibility of incorporating pedestrianisation of Ewell High Street and measures to reduce the volume of traffic through Ewell Village prior to the Kiln Lane Link major scheme.

c) Implement a one way system on High Street

The Council propose to make the section of the High Street within the AQMA one way in a northerly direction (See Figure 4 for current road layout); all vehicles except buses and cyclists would be prevented from entering the High Street at Spring Street and instead would be routed along London Road to the bypass.

It is anticipated that this would reduce the overall volume of traffic and also increase the traffic flow within the AQMA.

It is proposed that a one way system be considered as an alternative to pedestrianisation under the Kiln Lane link scheme discussed in proposal 1a and 1b.

Several variations and ideas were put forward in the consultation responses about how a one way system might work, what roads might be closed and to what class of vehicle. These will be taken into account during the process of designing the scheme.

Action if taken forward
Epsom & Ewell Borough Council will work in partnership with colleagues at Surrey County Council to discuss the feasibility of incorporating a one way system on Ewell High Street into the Kiln Lane link major scheme.

The Council propose to trial the one-way system for 6 months and consult with local residents and businesses that may be affected.

The Council would commission traffic surveys during the trial period to determine the impact on traffic flow of this measure and studies into the impact on vehicle emissions and local air quality.

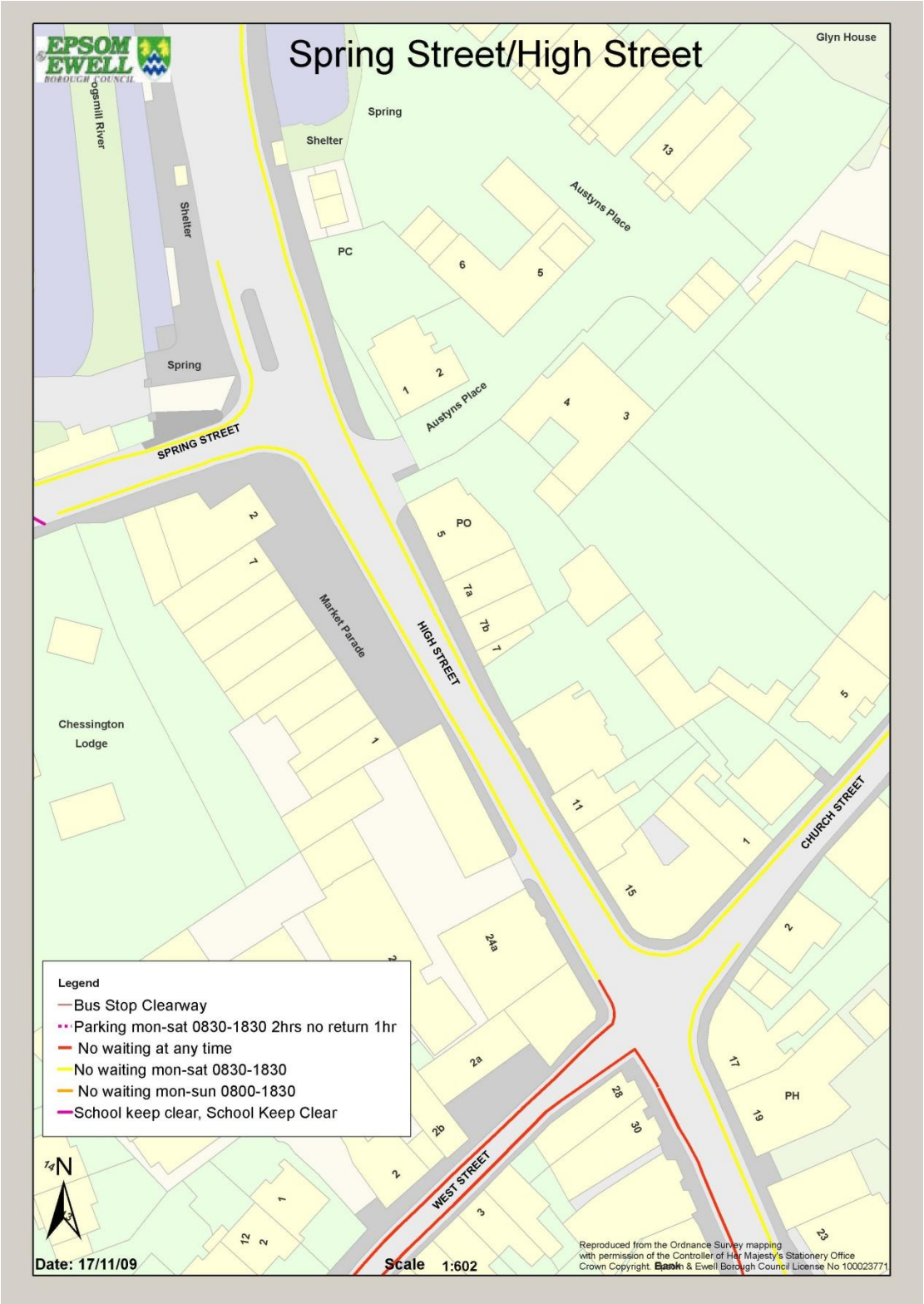

Figure 4 Spring Street/High Street Junction

2. Additional traffic management proposals

a) Remove the traffic lights at the junction between Spring Street and High Street

Please refer to the map shown in Figure 4 which details road layout. The traffic lights were installed in 2005; prior to this there were no traffic signals at this junction. Vehicles waiting at these lights back up the High Street towards the mini roundabout at the intersection with Cheam Road. The consultation responses favoured upgrading these lights rather than their removal as it was felt that they contribute to pedestrian safety. Therefore the Council propose to work towards upgrading these lights and if that is not possible to remove them to reduce congestion and increase traffic flow. Traffic modelling work would be required to determine the impact this action would have elsewhere on the transport network and whether there would in fact be an improvement in traffic flow.

Should an upgrade be possible, a potential improvement could be to install a MOVA (Microprocessor Optimised Vehicle Actuation) system which uses sensors to monitor traffic flow and adjust signal timings to reduce delay and improve traffic flow; it can also lead to a reduction in emissions from standing traffic[4].

Action if taken forward

The Council propose to model vehicle emissions associated with upgrading or removal of the traffic lights to quantify the air quality benefit.

The Council propose to commission traffic modelling to determine the impact of removal of these signals elsewhere on the transport network.

The Council will consult with colleagues at Surrey County Council on the safety implications of removal of these traffic lights if an upgrade is not possible

[4] DEFRA 2009 Local Air Quality Management PG(09)

b) Replace the pelican crossing outside market parade

Please refer to the map shown in Figure 4 which details road layout. This traffic light controlled pelican crossing is located 25m from the Spring Street/High Street traffic lights, exacerbating the congestion on this section of the High Street. If it is decided that the Spring Street/High Street traffic lights should remain, it is proposed that this pedestrian crossing is replaced with a zebra crossing point as it is considered that this will improve traffic flow by preventing unnecessary stopping of vehicles. While it is recognised that changing from pelican to zebra crossing may be considered a backwards step in terms of road safety, it is believed that the air quality benefits will offset this. Further consultations with local businesses and residents would need to be carried out before advancing with this proposal.

Consideration was given to complete removal of this crossing point, however it links two of the main shopping areas in Ewell Village and there are possible safety implications if there were no pedestrian crossing at this point.

Action if taken forward
The Council will investigate the safety implications of this measure through discussion with colleagues at Surrey County Council.

c) Implement a one way system on Church Street/West Street

Please refer to the map shown in Figure 4 which details road layout. Currently, vehicles waiting to turn into Church Street and West Street contribute to congestion by restricting the flow of traffic within the AQMA.

It is proposed that one of these streets be made one way to prevent vehicles turning into the road and delaying vehicles on the High Street.

Action if taken forward
The Council will commission traffic and emissions modelling to determine whether making either West Street or Church Street one way will improve the flow of traffic on Ewell High Street and reduce vehicle emissions.

3. Parking and stopping restrictions in Ewell Village

There are a number of possible measures to improve traffic flow associated with parking and stopping restrictions within Ewell Village, however isolated measures alone will have limited benefit and need to be part of an integrated approach; consideration must be given to the views and requirements of local businesses and residents when making alterations of this nature. As part of the overall strategy for Ewell Village, Surrey County Council intend to carry out a parking study to improve understanding of parking issues and identify potential areas for improvement within an overall parking strategy. Epsom & Ewell Borough Council propose that the following measures be included as part of this strategy:

a) Remove the formally marked parking bays from 53 to 67 High Street

Please refer to Figure 5 which highlights these parking bays adjacent to The Green Man Public House. The existing parking on this section of the High Street and associated illegal parking next to these bays reduces the effective road width to one lane and causes traffic to queue within the AQMA. The Council propose to remove this car parking which would widen the road to allow two way flow of traffic and therefore remove the bottleneck which contributes to slow moving traffic within the AQMA.

While it is recognised that this may have an impact on the businesses on this section of the High Street, there is parking provision at the rear of these premises and at other sites within Ewell Village.

Action if taken forward
The Council propose to implement this measure as a 6 week trial, followed by consultation with local residents and businesses.

The Council will commission traffic surveys to be carried out during this trial to determine the impact of this measure on overall traffic flow.

The Council will improve enforcement of parking restrictions throughout Ewell Village to prevent parking in unauthorised areas. The Council will investigate how enforcement can be improved and consider the introduction of Automatic Number Plate Recognition (ANPR) cameras in collaboration with Surrey County Council.

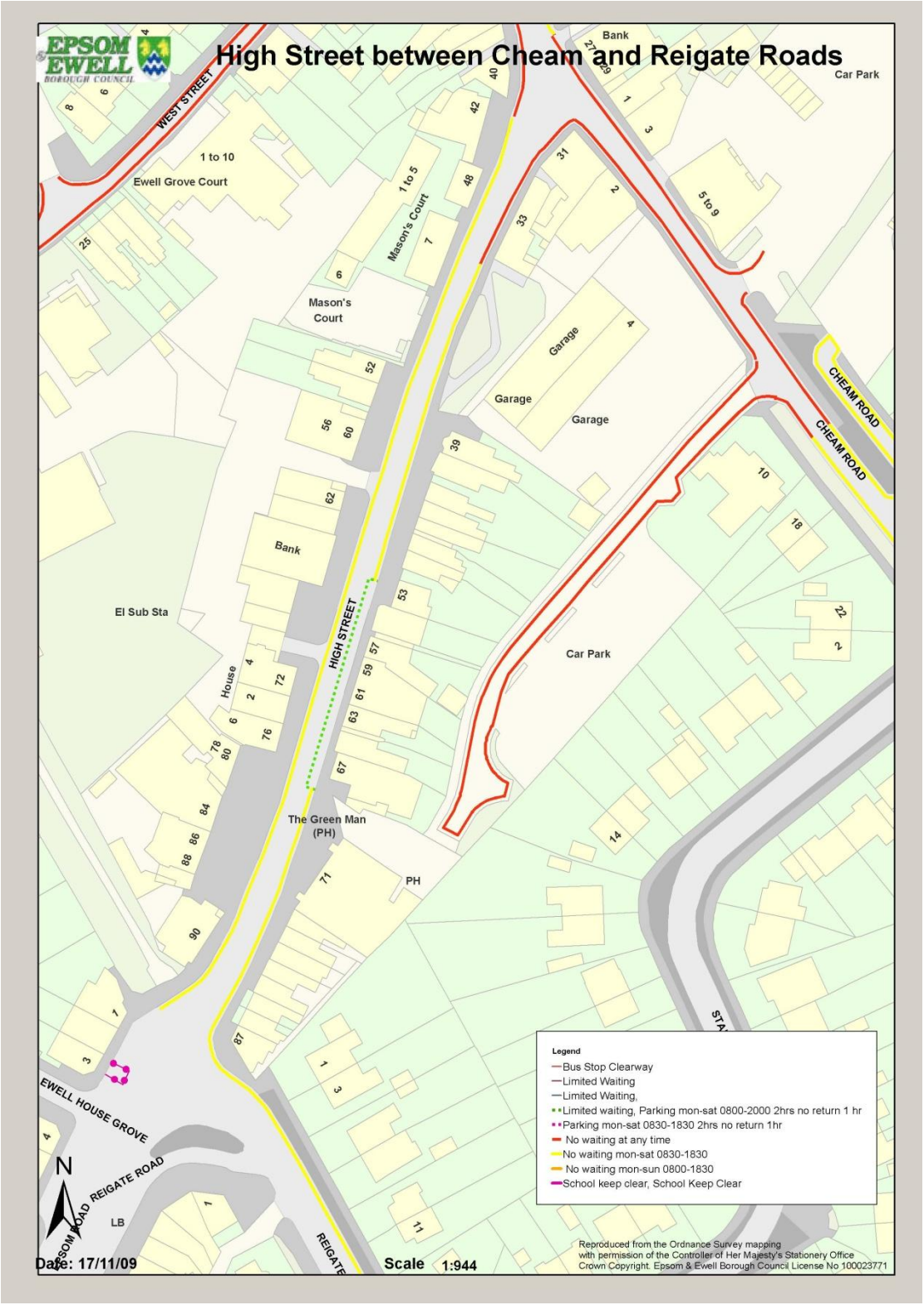

Figure 5 Parking bays on High Street (outside AQMA)

b) Widen the road at 76 to 62 Ewell High Street

As an alternative to removing the parking outside 53 to 67 High Street in the southern direction (item 3a above), the Council will explore the possibilities of widening the road on the northern bound lane outside Barclays Bank and move the parking into this widened section. The objective of this would be to restore two lanes of free flowing traffic so as to remove the problem of queuing traffic into the mini roundabout and into the AQMA as at present.

Action if taken forward
The Council will request Surrey County Council examine the possibilities of this measure as an alternative to the removal of parking and to do it whilst preserving pedestrian safety and access to properties.

c) Remove on-street car parking on Church Street near the junction with High Street

Currently vehicles turning into Church Street from the High Street restrict traffic flow on Ewell High Street. A contributory factor is parking at the end of Church Street reduces this road to one lane which often prevents vehicles turning into Church Street when another vehicle is waiting to turn out onto the High Street (see Figure 6).

It is proposed that this parking provision is removed to allow the two way flow of traffic on this section of Church Street.

Action if taken forward
The Council propose to trial the removal of car parking at the High Street end of Church Street for 6 weeks.

The Council will commission traffic surveys over this trial period to determine the impact of this proposal on traffic flow within the AQMA.

d) Reapply for/ensure that the existing traffic regulation order on High Street is enforced

Historically there has been a traffic regulation order in place restricting vehicles exceeding 7.5 tonnes from entering the High Street. However the details of this order are unclear making enforcement difficult. It is important that this order is enforced as HGVs are responsible for emitting higher concentrations of NO_x[5] (which is then converted to NO_2 by chemical reactions in the atmosphere) and also disrupting traffic flow on narrow streets such as Ewell High Street further contributing to congestion.

[5] National Atmospheric Emissions Inventory. 2007. Vehicle Emissions Factors in grammes per kilogram.

The Council propose to reapply for the traffic regulation order restricting vehicles exceeding 7.5 tonnes from entering the High Street and to ensure that this order is enforced.

Action if taken forward
The Council will reapply for the traffic regulation order in relation to the 7.5 tonne weight restriction for vehicles entering Ewell High Street.

The Council will strictly enforce this order to prevent HGVs over 7.5 tonnes from contributing to congestion and NO_2 concentrations on Ewell High Street.

Figure 6 Church Street car parking bays

e) Place restrictions on delivery times and stopping on High Street between Cheam Road and Spring Street junctions.

Delivery vehicles serving local businesses stopping within the AQMA restrict the High Street to one lane resulting in significant congestion during busy periods. The Council propose to prohibit loading and unloading between 7.30am and 9.30am and 4pm and 6.30pm.

In addition, it is proposed that designated loading bays are provided to accommodate business requirements given that there is no rear access to the majority of premises on the High Street for deliveries.

Action if taken forward
The Council propose to apply for a traffic regulation order for Ewell High Street within the AQMA to prohibit loading and unloading between 7.30am and 9.30am and 4pm and 6.30pm Monday to Friday.

The Council will liaise with colleagues at Surrey County Council with regards to the Ewell Village parking study and identifying suitable locations on the High Street for designated loading and unloading.

Prior to the adoption of any traffic regulation order, the Council will carry out a period of public consultation.

f) Paint 'Keep Clear' lines at entrance to junctions of High Street with Church Street and West Street.

Please refer to the map shown in Figure 4 which details road layout. Vehicles blocking access to Church Street and West Street cause traffic to back up along the High Street in both directions; advising drivers to keep clear of these areas is likely to reduce congestion.

Action if taken forward
The Council propose to put 'keep clear' road markings on the High Street at the junctions with Church Street and West Street. The Council will consult with colleagues at Surrey County Council on this measure.

g) Improve enforcement of all traffic regulation orders and parking restrictions within Ewell Village

The success of the aforementioned traffic regulation orders and parking restrictions will be undermined if they are not supported by a robust system for enforcement. Currently there is a disjointed approach with the County Council being responsible for the legislative aspect and the local council being responsible for enforcement. The Council propose to take a more joined up approach to enforcement in this area and to consider investment in additional enforcement officers and ANPR (Automatic Number Plate Recognition) cameras to ensure these restrictions are enforced.

Action if taken forward
The Council will investigate how enforcement can be improved and consider the introduction of ANPR cameras in collaboration with Surrey County Council. A traffic survey will be carried out to determine the cost effectiveness of this measure.

4. Supporting measures

a) Work with local schools to develop travel plans

Ewell Castle School and Ewell Grove School are close to the AQMA boundary; school traffic contributes to the congestion on Ewell High Street. Both schools already have existing school travel plans in place. The Council propose to work with these schools and Surrey County Council Community Travel Team to review these plans and identify whether there are any further initiatives which could be introduced aimed at reducing car usage and therefore congestion associated with school run traffic.

Action if taken forward
The Council propose to work with local schools and Surrey County Council to identify whether any further initiatives can be introduced to reduce car usage on the school run.

b) Education and awareness raising

The proposals set out in this document are unlikely to be accepted by the local community without improving understanding of why action must be taken to improve air quality. In addition, raising awareness of the issue and what the general public can do may help to reduce car usage and improve vehicle emissions standards to improve air quality in the borough as a whole. The Council propose an education and awareness campaign to support any action taken to include the following aspects:

i. Involve the local community in air quality monitoring; for example, encourage local schools and community groups to assist with the diffusion tube monitoring network to increase monitoring sites within the village.

ii. Expand the air quality section of the Council website to include updates on progress with improvements in Ewell Village, access to monitoring data and practical advice for improving air quality such as eco-driving tips.

iii. Work with schools to publicise events such as national walk to school week, international walk to school month etc.

iv. Provide information in public areas within Ewell Village such as Bourne Hall on the progress of the air quality action plan, information on action the public can take to improve air quality such as eco-driving, vehicle emissions standards etc.

v. Develop a programme of roadside vehicle emissions testing – Regulation 61 of the Road Vehicles (Construction and Use) Regulations 1986, lays down maximum permitted emission levels of regulated pollutants from vehicles. New powers are available to local authorities with AQMAs to carry out roadside vehicle emissions testing and issue fixed penalty notices where standards are not met. However, since the introduction of these powers to local authorities, research by the National Society for Clean Air[6] identified that there was unlikely to be a measurable contribution to air quality improvement from roadside vehicle emissions testing. In addition, while NO_2 presents a problem within this AQMA, carbon monoxide and

hydrocarbons form the basis of the emissions test. But, while not directly improving air quality, roadside emissions testing does have a role in raising public awareness and as a deterrent[6].

It is recognised that the direct improvement in air quality from this measure is limited; however the Council propose to use roadside vehicle emissions testing as a tool to raise awareness of vehicle emissions standards and as an incentive to maintain vehicles.

vi. Take action to prevent idling vehicles within Ewell Village – it is an offence under the Road Vehicles (Construction and Use) Regulations 1986 for drivers to leave engines running while stationary without good reason. It is proposed that the Council adopt powers to issue fixed penalty notices to idling vehicles, not as a revenue generating measure but to act as a deterrent and to raise awareness of air quality in Ewell Village. It is proposed to target this measure outside the schools and to improve signage at these sites to encourage people to turn their engines off while they wait.

Action if taken forward
The Council propose to work with the local community to raise awareness of air quality issues within Ewell Village.

The Council will improve the provision of information on air quality to the local community through improvements to the website and providing information at public venues within the village.

The Council propose to adopt powers to carry out roadside vehicle emissions testing and issue fixed penalty notices to idling vehicles.

The Council propose to work with VOSA and the local police to implement a programme of roadside vehicle emissions testing.

The Council propose to target action on idling vehicles outside the local schools.

c) Use of the planning process to secure improvements in air quality within Ewell Village and surrounding areas

Planning Policy Guidance document 23 states that air quality is a material consideration on planning applications[7]. Future development within the village has the potential to have a detrimental or a beneficial impact on air quality depending on how the application is handled during the planning process. Potential air quality impacts must be addressed before the development commences.

The EEBC planning section is currently writing a Development Plan Document (DPD), which will contain policies to which all future development must comply. It is proposed that Environmental Health work with the Planning Department to develop an air quality policy

[6] McCrae I.S, Latham S. and Boulter P.G. 2005. A Review of Roadside Emissions Testing by local authorities in the United Kingdom.
[7] ODPM 2004 Planning Policy Statement 23: Planning and Pollution Control. HMSO, Norwich.

which will form part of this document to ensure that the potential air quality impacts of developments are considered at the planning stage and are mitigated as far as reasonably practicable. The air quality policy would address future developments in the borough as a whole and therefore would also apply should further AQMAs be declared in the future.

This guidance would reflect the policy principles CS1, CS6 and CS16 as outlined in Epsom & Ewell Borough Council's Core Strategy (See Section 3 - 3.4 Epsom & Ewell Core Strategy) and specifically address:

- Circumstances where submission of air quality impact assessments would be appropriate;
- Standard planning conditions aimed at reducing vehicle usage;
- Circumstances when Section 106 agreements would be sought and outline a policy for setting up such agreements proportionate to the potential air quality impact.

Action if taken forward
The Council will develop an air quality policy as part of the borough wide Development Management Document.

d) Actions specific to Epsom & Ewell Borough Council

Actions already employed by the Council to improve air quality in the borough as a whole include:

- The Council supports staff using bicycles to travel to and from work and on Council business in the Borough.
- Employees are offered the use of a pool car for Council business to reduce private car usage; mileage and usage patterns for these pools cars are closely monitored.
- The Council has sought advice from a consultancy on the replacement of fleet vehicles which recommended investment in the best diesel engine technology. As a result, fleet vehicles over 7.5 tonnes, including all our waste & recycling vehicles, were upgraded and meet Euro V standards.
- The entire fleet consists of higher technology diesel engines capable of taking 5% bio-diesel.
- The authority invested in tracking and round management software for all LGVs for waste & recycling collections. This allows better route management to reduced fuel consumption.
- Servicing and maintaining the fleet to ensure emissions standards are met.
- Research by the National Society for Clean Air (now Environmental Protection UK), identified taxis as a particularly polluting sector[8]; the Council are in a position to improve the taxi fleet under the licensing regime. Currently, the licensing team stipulates that any new Hackney Carriage Vehicles for licensing by the Authority must meet standards set by the Public Carriage Office (PCO) with regards to CO_2 emissions; any emissions reduction equipment or conversion (to run on alternative fuels) must be PCO/ Energy Saving Trust approved and bring the vehicle to Euro 3 standard or better for NO_x and PM_{10}. Low emissions vehicles are also encouraged; those certified as producing lower emissions and/or those which use alternative fuels may be eligible for a reduction in the licence fee of up to 50% on production of documentary evidence.

The Council will continue these actions to improve air quality borough-wide.

[8] McCrae I.S, Latham S. and Boulter P.G. 2005. A Review of Roadside Emissions Testing by local authorities in the United Kingdom.

The Council propose the following additional measures to improve air quality:

i. Provide training in eco-driving to drivers of fleet vehicles and Council employees.
ii. Epsom & Ewell Borough Council has adopted a Climate Change Action Plan which is complementary to the Surrey Climate Change Strategy. It is important that aims and objectives of climate change and air quality action plans are aligned. EEBC environmental health department have input into the Climate Change Action Plan to ensure climate change and air quality objectives do not conflict.
iii. Develop a travel plan for Council employees.

Action if taken forward
The Council propose to provide training on eco-driving

The Council will ensure climate change and air quality action plans complement each other as far as practicable.

The Council will develop a green travel plan

The Council will continue with existing measures to improve air quality.

5.0 Costs

The Borough Council will not be in a position to fund all of these measures and it is expected that those measures which directly relate to highway alterations will be funded by Surrey County Council in its highways authority capacity using, if necessary, finance sourced from elsewhere. Where Epsom & Ewell Borough Council is the lead agency on particular measures, options for external funding will be a prominent consideration. Where appropriate, bids will be made to DEFRA's air quality grant programme to secure funding for these measures. The following table breaks down each measure by approximate cost. At the stage of implementation, each measure will be fully costed. The following guide has been used to develop Table 3 – the indicative estimated cost for each measure.

Low <£10,000
Medium £10,000 - £100,000
High >£100,000

	Proposal	Cost
1a	Pedestrianise Ewell High Street in conjunction with the Kiln Lane Link	High
1b	Pedestrianise Ewell High Street prior to the Kiln Lane Link	High
1c	Implement a one-way system	High
2a	Remove the traffic lights at the junction between Spring Street and High Street	High
2b	Replace the pelican crossing outside market parade with zebra crossing	Low
2c	Implement a one-way system on Church Street/West Street	Medium

Table 3 Indicative costs

3a	Remove the formally marked parking bays from 53 to 67 High Street	Low
3b	Widen the road at 76 – 62 High Street	Medium
3c	Remove on-street car parking on Church Street near the junction with High Street	Low
3d	Re-apply for traffic regulation order in relation to 7.5 tonne weight restriction	Low
3e	Place restrictions on delivery times and stopping on High Street between Cheam Road and Spring Street junctions.	Low
3f	Paint 'keep clear' lines at entrance to junctions of High Street with Church Street and West Street.	Low
3g	Improve enforcement of all traffic regulation orders and parking restrictions	Medium
4a	Work with local schools to develop travel plans	Low
4b(i)	Community involvement	Low
4b(ii)	Expand air quality web pages	Low
4b(iii)	Publicise national events	Low
4b(iv)	Provide public information on air quality issues	Low
4b(v)	Roadside emissions testing	Low
4b(vi)	Reduce idling vehicles	Low
4c	Develop air quality policy for future developments	Low
4d(i)	Promote eco driving	Low
4d(ii)	Continued input into climate change strategy	Low
4d(iii)	Develop travel plan	Medium

6.0 Impact Assessment

The cost effectiveness of a measure typically provides a guide to how much it would cost to reduce one tonne of emissions or to improve air quality by 1ug/m^3.[9] It has not been possible at this stage of the action plan however to model the impact of each of the proposals on air quality due to time and financial constraints. In many cases it is also not possible to quantify the air quality benefit of a particular measure due to inherent uncertainties which would make the figure meaningless; in other cases the cost of carrying out modelling work would exceed the cost of implementing that measure. Table 4 gives a simple cost benefit analysis of each proposal. For cost and benefit, the descriptors low, medium and high refer to the following:

Cost		Benefit (reduction in NO_2 conc.)	
Low	<£10,000	Low	<0.5 µg/m^3
Medium	£10,000-100,000	Medium	0.5-1.0 µg/m^3
High	>£100,000	High	> 1.0 µg/m^3

The reader should be aware that these are estimates at this stage and following consultation and selection of measures for further development, more in depth study into cost and air quality benefit will be carried out involving emissions modelling where deemed to be necessary and cost effective. All cost estimates are assumed to include costs associated with traffic and emissions modelling where required.

Overall cost-effectiveness has been determined using the following matrix:

[9] National Society for Clean Air and Environmental Protection (1999) Air Quality Action Pans: interim guidance for local authorities

		Cost		
		High	Medium	Low
Estimated reduction in NO_2 levels	High	Medium	High	High
	Medium	Low	Medium	High
	Low	Low	Low	Medium

The colour of the row header in Table 4 corresponds to this cost-effectiveness rating.

This ranking may change following the consultation. Socio-economic factors associated with each of the proposals have also been considered and are detailed in the comments section of Table 4.

Timescales assigned are also provisional and will depend on more in depth discussion with stakeholders following the selection of preferred measures.

Proposal		Organisations involved	Completion date	Cost	Local air quality benefit	Funding	Comments, benefits, disadvantages
1a	Pedestrianise Ewell High Street in conjunction with Kiln Lane Link	Surrey County Council EEBC	After 2016 (dependent on approval of Kiln Lane link scheme)	High	High	None currently. To be discussed with project team responsible for Kiln Lane link major scheme.	+Catalyst for local investment and regeneration of village; opportunity to improve local environment; boost local economy and businesses. +May increase community activity and social interaction +Long term protection of built environment +Improve visual amenity +Reduction in noise +Improved road safety -Potential short term perceived/actual reduction in trade to local businesses -Reduced access for local residents -Potential for displacement of traffic elsewhere on road network.
1b	Pedestrianise Ewell High Street without Kiln Lane Link	Surrey County Council EEBC	2014-2015	High	High	None identified at present	+As above -Proceeding with pedestrianisation without traffic relief provided by Kiln Lane Link will require careful consideration
1c	Implement a one-way system	Surrey County Council EEBC	After 2016 (dependent on approval of Kiln Lane link scheme)	High	High	None currently. To be discussed with project team responsible for Kiln Lane link major - scheme.	+Associated with aesthetic improvements such as widening pavements and improving street furniture – +Improved road safety +local businesses still receive passing traffic, less perceived reduction in trade. +Wider road will create opportunity for creation of cycle lanes - Potential for displacement of traffic elsewhere on road network. -Reduced access for local residents -Disruption to bus routes

2a	Remove the traffic lights at the junction between Spring Street and High Street	Surrey County Council EEBC	2012	High	Med	Additional funding required	+Reduction in congestion & stationary vehicles - Safety implications - Emotive issue, accident at this site resulted in installation of traffic lights. - Traffic lights were only installed in 2006, removal may be perceived as Council wasting money
2b	Replace the pelican crossing outside market parade with zebra crossing	Surrey County Council EEBC	2011/2012	Low	Low	Additional funding required	+Reduction in unnecessary stop-start of vehicles + Reduction in stationary vehicles - Possible safety implications of 'downgrading' pedestrian crossing from pelican to zebra.
2c	Implement a one-way system on Church Street/West Street	Surrey County Council EEBC Local schools	2012/2013	Med	Med	Additional funding required	+ Improved road safety -May require costly modelling -Access disrupted to local residents -Displacement of traffic elsewhere on transport network.
3a	Remove the formally marked parking bays from 53 to 67 High Street	Surrey County Council EEBC	2011	Low	High	Within existing budget	- Concerns of local businesses over loss of trade.
3b	Widen the road at 76 – 62 High Street	Surrey County Council EEBC	2011-2012	Medium	High	Additional funding required	+May well be sufficient to address any business concerns arising from the removal of on street parking. -Need to balance measure so as to maintain proper access to properties and pedestrian safety.
3c	Remove on-street car parking on Church Street junction.	Surrey County Council EEBC	2011	Low	Low	Within existing budget	- Disruption for local residents using these parking bays

3d	Re-apply for traffic regulation order in relation to 7.5 tonne weight restriction	Surrey County Council EEBC	2011	Low	Med	Within existing budget	It is important that any new traffic restrictions introduced as a result of this action plan are supported by robust enforcement methods.
3e	Place restrictions on delivery times and stopping on High Street between Cheam Road and Spring Street junctions.	Surrey County Council EEBC	2011	Low	Med	Within existing budget	-Disruption to local businesses -Public perception of increased regulation; should not be viewed as a revenue generating measure.
3f	Paint 'keep clear' lines at entrance to junctions of High Street with Church Street and West Street.	Surrey County Council EEBC	2011	Low	Med	Within existing budget	
3g	Improve enforcement of all traffic regulation orders and parking restrictions	Surrey County Council EEBC	2011/2012	Med	High	Additional funding required	-Public perception of increased regulation; should not be viewed as a revenue generating measure.

4a	Work with local schools to develop travel plans	Surrey County Council	2011/2012	Low	Low	Within existing budget	+Reduction in congestion and idling vehicles +Wider health benefit of encouraging walking to school. +Associated reduction in CO_2 from reduced vehicle usage complements climate change action plan. -Perceived safety concerns by parents of allowing child to walk to school.
4b(i)	Community involvement	EEBC	2011	Low	Low	Within existing budget/application for DEFRA funding	+Knock on effect of raising public awareness and personal responsibility
4b(ii)	Expand air quality web pages	EEBC	2011	Low	Low	Within existing budget	+Awareness raising +Provides updated information on progress of action plan; keeping community involved/informed
4b(iii)	Publicise national events	EEBC	2011/2012	Low	Low	Within existing budget	+Awareness raising
4b(iv)	Provide public information on air quality issues	EEBC	2011/2012	Low	Low	Within existing budget	+Awareness raising + Provides updated information on progress of action plan; keeping community involved/informed
4b(v)	Roadside emissions testing	Vehicle operator Services Agency (VOSA) Police force EEBC	2012	Low	Low	Application for DEFRA funding	+Wider awareness raising – knock on effect elsewhere in borough +Increases personal awareness and accountability + Knock on benefit on CO_2 emissions -Potential public relations conflict – must be not be viewed as revenue generating.

4b(vi)	Reduce idling vehicles	VOSA Surrey County Council school travel plan team EEBC	2012	Low	Low	Application for DEFRA funding	+Wider awareness raising – knock on effect elsewhere in borough +Increases personal awareness and accountability + Knock on benefit on CO_2 emissions -Potential public relations conflict – must be not be viewed as revenue generating
4c	Develop air quality policy for future developments	EEBC Planning department & Environmental Health	2011	Low	Low	Within existing budget	+Secures future sources of funding for air quality improvements. + EEBC planning department are already working on development management document; air quality policy document fits with time scales. +Raises awareness of air quality in village +Applies consistent approach to assessment of applications and developer contributions within Ewell Village. -Strict standards may discourage development and investment in area; must be balanced to encourage investment in Ewell Village.
4d(i)	Promote eco driving	EEBC	2011/2012	Low	Low	Within existing budget	
4d(ii)	Continued input into climate change strategy	EEBC	2011	Low	Low	Within existing budget	
4d(iii)	Develop travel plan	EEBC	2011/2012	Med	Low	Within existing budget	+ Financial savings due to improved fuel efficiency Council must lead by example

Table 4 Impact Assessment table

Priority

The proposals have been grouped in order of priority, taking into consideration not only the cost effectiveness but also whether funding has been secured and the time scales for implementation. This has given an overall priority score to reflect the cost effectiveness and feasibility of each proposal.

Table 5 below shows how these scores were assigned.

	Score		
	3	**2**	**1**
Timescale	Short term - could be implemented within 1 yr	Medium term – implemented 1 to 2 yrs	Long term – implemented over 2 years
Cost-benefit score	High	Medium	Low
Funding required	Negligible / within existing budget	<£10, 000 to be secured	> £10,000 to be secured

Table 5 Score assignment explanation

Table 6 shows the scores assigned to each proposal and table 7 ranks them in order or priority.

Proposal		Timescale score	Cost/benefit score	Funding score	Priority score
1a	Pedestrianise Ewell High Street in conjunction with Kiln Lane Link	1	2	1	4
1b	Pedestrianise Ewell High Street without the Kiln Lane Link	1	2	1	4
1c	Implement a one-way system	1	2	1	4
2a	Remove the traffic lights at the junction between Spring Street and High Street	2	1	1	4
2b	Replace the pelican crossing outside market parade with zebra crossing	2	2	2	6
2c	Implement a one-way system on Church Street/West Street	2	2	2	6
3a	Remove the formally marked parking bays from 53 to 67 High Street	3	3	3	9
3b	Widen the road at 76 – 62 High Street	2	3	2	7
3c	Remove on-street car parking on Church Street near the junction with High Street	3	1	3	8
3d	Re-apply for traffic regulation order in relation to 7.5 tonne weight restriction	3	3	3	9
3e	Place restrictions on delivery times and stopping on High Street between Cheam Road and Spring Street junctions.	3	3	3	9
3f	Paint ‘keep clear’ lines at entrance to junctions of High Street with Church Street and West Street.	3	3	3	9
3g	Improve enforcement of all traffic regulation orders and parking restrictions	2	3	2	7
4a	Work with local schools to develop travel plans	2	2	3	7
4b(i)	Community involvement	3	2	3	8
4b(ii)	Expand air quality web pages	3	2	3	8
4b(iii)	Publicise national events	3	2	3	8
4b(iv)	Provide public information on air quality issues	3	2	3	8
4b(v)	Roadside emissions testing	2	2	2	6
4b(vi)	Reduce idling vehicles	2	2	2	6
4c	Develop air quality policy for future developments	3	2	3	8
4d(i)	Promote eco driving	3	2	3	8
4d(ii)	Continued input into climate change strategy	3	2	3	8
4d(iii)	Develop travel plan	2	1	3	6

Table 6 Scores assigned for each proposal

Table 6 shows the scores assigned for each proposal and an overall priority ranking; the higher the score, the higher the priority.

Proposal		Priority Score
3a	Remove the formally marked parking bays from 53 to 67 High Street	9
3d	Re-apply for traffic regulation order in relation to 7.5 tonne weight restriction	9
3e	Place restrictions on delivery times and stopping on High Street between Cheam Road and Spring Street junctions.	9
3f	Paint ‘keep clear’ lines at entrance to junctions of High Street with Church Street and West Street.	9
3c	Remove on-street car parking on Church Street near the junction with High Street	8
4b(i)	Community involvement	8
4b(ii)	Expand air quality web pages	8
4b(iii)	Publicise national events	8
4b(iv)	Provide public information on air quality issues	8
4c	Develop air quality policy for future developments	8
4d(i)	Promote eco driving	8
4d(ii)	Continued input into climate change strategy	8
3g	Improve enforcement of all traffic regulation orders and parking restrictions	7
4a	Work with local schools to develop travel plans	7
3b	Widen the road at 76 – 62 High Street	7
2b	Replace the pelican crossing outside market parade into zebra crossing	6
2c	Implement a one-way system on Church Street/West Street	6
4c(v)	Roadside emissions testing	6
4c(vi)	Reduce idling vehicles	6
4e(iii)	Develop travel plan	6
1a	Pedestrianise Ewell High Street in conjunction with the Kiln Lane Link	4
1b	Pedestrianise Ewell High Street without the Kiln Lane Link	4
1c	Implement a one-way system	4
2a	Remove the traffic lights at the junction between Spring Street and High Street	4

Table 7 Proposals in order of priority

7.0 Implementation and monitoring

Given that this action plan crosses over a number of policy areas and responsibility for delivery of specific actions resides with officers from different organisations, a steering group will be set up to drive implementation. This group will consist of Council officers at a local and county level, elected members for Ewell Village and other interested parties.

Following the publication of this action plan the local authority is required to submit annual progress reports to DEFRA, to ensure that the Council is implementing the measures outlined within the action plan to the proposed timescales. Table 4 outlines the timescales to which these proposals will be measured against.

The boxed text associated with each proposal outlined in Section 4 details specific objectives which will be used to measure progress in the progress report, if it is decided that that measure will be included for implementation.

EEBC have secured funding to continue real-time monitoring of NO_2 on Ewell High Street; the data collected can be used to assist determination of any improvement in air quality associated with the measures implemented.

8.0 Conclusions and Next steps

There is a need for the boundaries of the Air Quality Management Area to be modified in light of the findings of the November 2009 Further Assessment of Air Quality (included as appendix one to this action plan).

The further assessment of air quality highlights the fact that modelled concentrations are unlikely to fall below the national objectives without significant measures being adopted. This translates to the need to adopt a high proportion, if not all of the proposals in this document.

A reduction of at least 9 $\mu g/m^3$ in nitrogen dioxide concentration is required to meet the annual mean NO_2 objective within the Ewell High Street AQMA. This report presents a series of proposals to achieve this objective.

A more in depth feasibility study will be carried out on selected proposals and modelling work commissioned to assess impact on the transport network and vehicle emissions where appropriate.

Appendix 1 – Further Assessment of Air Quality in Ewell High Street

Section 2 of this report summarises the findings of the Further Assessment of Air Quality in Ewell High Street. This report forms the technical annex to this action plan and contains up-to-date verified monitoring data, future predictions, source apportionment and scenario modelling. For reasons of economy it has been decided not to include this directly in the action plan but it forms part of the overall picture.

The Further Assessment is available from Epsom & Ewell Borough Council's website at www.epsom-ewell.gov.uk or by telephoning the Council's Contact Centre on 01372 732000. A small charge may be payable for printed copies of the document.