

Lewes District Council

Air Quality Action Plan

May 2009



EXECUTIVE SUMMARY

This Air Quality Action Plan (AQAP) has been prepared in order to fulfil LDC statutory obligations under section 84(2) of the Environment Act 1995 and the subsequent Local Air Quality Management (LAQM) regime. It replaces the draft AQAP published in September 2007.

LAQM is an effects-based process by which local authorities are required to review and assess their local air quality in relation to health-based air quality objectives. Where it is predicted that objectives will not be met, and members of the public are exposed to elevated levels of pollutants, local authorities are required to declare Air Quality Management Areas (AQMAs) and subsequently develop and implement AQAP's setting out measures that they intend to take, in order to improve local air quality, in pursuit of the air quality objectives.

Air quality monitoring and modelling carried out by the Council indicated that, despite good air quality within most of our District, Lewes Town Centre fails to meet government air quality targets for nitrogen dioxide (NO₂). We have declared an AQMA in Lewes Town Centre, where the NO₂ annual objective is exceeded.

Traffic is the major source of pollution in our AQMA, as such the East Sussex Local Transport Plan is

critical to the successful implementation of measures to improve air quality and the AQAP and will be incorporated into the LTP2.

This AQAP sets out measures existing, and future measures, which will deliver improvements to air quality primarily within the Town Centre, by reducing pollution emitted from vehicles and the amount of traffic on the roads. Air pollution from non-road sources is also addressed. Further evaluation of these measures is ongoing, with more detailed quantification of timescales, funding available and of the improvements that are expected, particularly with regards to NO₂ and CO₂ reduction.

This AQAP is a live working document and should stimulate new ideas and transform existing policies to improve air quality, not only across the Town Centre, but the whole District and beyond.

The Plan has been the subject of extensive consultation. Maintaining consistent, constructive and widespread consultation, and engagement with statutory and non-statutory stakeholders, will be crucial to the effectiveness of this Plan. This Air Quality Action Plan incorporates the changes that have arisen from the consultation on the draft document published in September 2007.

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1 INTRODUCTION AND AIMS OF THE ACTION PLAN

1.1 Introduction

Air quality in the UK has significantly improved since the introduction of air pollution control following the smog episodes in 1950's. From 1990 to 2001 the improvements have helped avoid an estimated 4,200 premature deaths per annum and 3,500 hospital admissions per annum. However pollution is currently estimated to reduce the life expectancy of every person in the UK by an average of 7-8 months.

Road traffic has recently replaced industry as the main source of air pollution. In the longer term, emissions from vehicles make a significant contribution to climate change, which has the potential to affect everyone. Excessive road traffic – which affects areas of poor air quality - is considered to be one of the modern, main “environmental stress” factors.

As well as affecting health, air pollution can be damaging to the local economy, resulting in lost working days through illness and reduced productivity. It makes the environment less attractive to visitors and can damage buildings and structures. This often has particular impact on our most disadvantaged communities. Usually it is the most vulnerable members of society who are affected; the young, the elderly and those with existing medical conditions. A balance must therefore be struck between addressing air quality and increased traffic growth with the need to support Lewes's continuing economic growth.

Part IV of the Environment Act 1995 places a statutory duty on local authorities to periodically review and assess the air quality within their area. This involves consideration of present and likely future, air quality against relevant air quality objectives. Areas where it is measured or predicted that the targets will not be met must be declared as Air Quality Management Areas (AQMAs) and an Air Quality Action Plan (AQAP) must then be produced which sets out measures to reduce air pollution.

The air quality review and assessment in Lewes found that targets for nitrogen dioxide (NO₂) would be exceeded in Fisher Street. The area including Fisher Street was declared an AQMA in June 2005. The

latest air quality assessments carried out in 2006 confirmed that the AQMA should be maintained and an Action Plan produced.

There are many actions that councils (district and county), businesses and the people of Lewes and surrounding areas can take to help reduce pollution in the Town Centre and within the district. This Action Plan sets out a comprehensive package of measures that aims to improve air quality in Lewes. Some of the proposed measures are dependent on funding and may have to be reviewed if adequate resources are not available.

1.2 Objectives

This AQAP will look in detail at local air quality problems which have resulted in the declaration of an AQMA in the Town Centre. The Plan sets out the measures which Lewes and East Sussex Councils intend to take in order to:

- Improve local air quality, in pursuit of the air quality objective for nitrogen dioxide, which is currently exceeded within the Town Centre
- Contribute to improving health and wellbeing of the local community by reducing air pollution in Lewes.

The measures included in this AQAP are those currently considered to be the most cost effective and appropriate for Lewes. They have been drawn up following extensive consultation with residents, businesses and key stakeholders.

This AQAP will be incorporated into the next East Sussex County Council LTP2 Progress Report, and monitoring of air quality improvements will be included in the following LTP2 progress reports.

1.3 Structure

This document has been prepared following the requirements of the Policy Guidance issued by Defra (LAQM.PG(05)) and the approaches set through the Technical Guidance issued by National Society for Clean Air (NSCA) (“Air Quality Action Plans: Interim Guidance for Local Authorities”, and “Air Quality: Planning for Action”).

Following this introduction, Chapter 2 provides background information on the town and its complex transport system, and an overview of the LAQM process in Lewes.

¹ www.Defra.gov.uk/environment/airquality/strategy/index.htm

² www.advisorybodies.doh.gov.uk/comeap/pdfs/interimlongtermeffects2006.pdf

³ www.defra.gov.uk/environment/airquality/local/guidance/index.htm

⁴ www.uwe.ac.uk/aqm/centre/aqaps/mindex.html

Chapter 3 gives a brief outline of existing policy context linked to the AQAP. Further detail is given in Annex C. Chapter 4 sets out the various measures considered during the screening assessment to improve air quality primarily within the AQMA and Lewes town. Those measures considered to be the most practical are prioritised in Chapter 5, which provides the results of an indicative cost-effectiveness assessment, initial funding allocations and timescales for implementation. Funding is further discussed in Chapter 6.

Chapter 7 summarises the outcome of the consultation carried out prior to and during the production of the Action Plan, and the strategy for consulting further to its submission to Department for Environment, Food and Rural Affairs (DEFRA). Further detail on consultation carried out so far is given in Annex D. Chapter 8 explains how the Council will implement and monitor the performance of the Action Plan. Finally, Annex A and Annex B provide background figures and maps.

2 OVERVIEW OF AIR QUALITY IN LEWES

2.1 Background

Lewes District covers an area of 292 square kilometres, much of which forms part of the Sussex Downs Area of Outstanding Natural Beauty. Around 14.5 km is coastline. Following the Secretary of States decision on the 31 March 2009 just over half of the District is proposed to be included in the South Downs National Park, including the town of Lewes. The District comprises a large rural area and five main towns – Lewes, Peacehaven, Telscombe, Newhaven and Seaford, most of which are located along the southern coastal strip. There are 28 parishes in the District. Lewes is the key market town of the District, with around 16,000 inhabitants.

Lewes historic Town Centre comprises many narrow streets, including single lane streets on steep hills that are bounded by tall buildings on both sides of the road. Such conditions can limit the dispersion of air pollutants and can lead to locally high concentrations. As a result of the constricted conditions, the average speed of vehicles is very low during busy congested periods. A combination of these factors leads to higher emissions and consequently higher pollution. Measured levels of air pollution are at their highest in

Fisher Street. This is despite handling less than 10,000 vehicles a day, compared to around 30,000 on the Lewes bypass (A27).

Lewes is linked to the coastal towns of Newhaven and Seaford, London and Gatwick Airport and to Brighton and Eastbourne by rail connections. There is a disused railway route from Lewes to Uckfield. The Port of Newhaven provides passenger and freight services to Dieppe and mainland Europe, and beyond.

The A27 and A259 roads link the coastal towns and Lewes to neighbouring Brighton and Eastbourne and to Kent, while the nearby A23/M23 provide access to London, Gatwick and the M25. There is a relatively frequent inter-urban bus network, but most of the rural areas are poorly served by public transport. Traffic congestion is a regular problem along the A259 coast road and on the A27 in the vicinity of Lewes, especially during peak commuting times.

The highest proportion of people in ESCC travelling less than 2km to work occurs in Lewes. Lewes Bridge ward has the highest rate in the District with 41% of people travelling less than 2km to work which is significantly higher than the national average of 20% (England and Wales). 2001 Census data showed car ownership in Lewes (and East Sussex) is higher than the national average (78.7% owners compared to 73.2% in England & Wales). 25.5% of residents are above 65 years old (and therefore more vulnerable to air pollution), compared to 18.5% in England & Wales.

2.1.1 Transport in Lewes

Lewes Town Centre has a medieval townscape with a modern traffic system. The lack of alternative routes to the congested ones restricts the range of realistic interventions. Potential changes in roads layout are limited. Significant changes were introduced in 1990s with a new one-way system within the Town Centre. This has been beneficial by allowing traffic to flow more smoothly, however it has also caused an inevitable increase in traffic re-circulation.

There is lack of space for construction of new road links, due to a number of reasons, including the topography and the presence of sites of scientific interest surrounding the Town Centre. Road space is in high demand from road users – i.e. pedestrians, retailers, businesses, residents and visitors, therefore road space re-allocation schemes can be complex and easily become contentious.

Many roads in the Town Centre are so narrow that large vehicles such as buses and lorries can easily cause bottlenecks and queuing at any time of the day. Cyclists can have the adverse effect of creating queuing due to the narrowness and steepness of the roads (the characteristic “twittens”) and lack of off-road cycling routes. The characteristic local shops which are one of the main attractions of Lewes Town Centre, only represent a stop on main travelling routes of delivery companies, which appear to have no flexibility on delivery times.

Transport dynamics within Lewes town may be significantly affected by a range of potential development projects. The Lewes Transport Model (LTM), commissioned by ESCC in November 2005, to gain a better understanding of these potential impacts will provide useful information once completed.

2.2 Nitrogen dioxide: sources and potential effects on health

All combustion processes in air produce oxides of nitrogen (NO_x). Nitrogen dioxide (NO₂) and nitric oxide (NO) are both oxides of nitrogen and together are referred to as NO_x. Road transport is the main source, followed by the electricity supply industry and other industrial and commercial sectors. In the atmosphere NO is converted to NO₂ via the reaction of chemically active species such as ozone.

NO₂ is associated with adverse effects on human health, at high levels NO₂ causes inflammation of the airways, long term exposure may affect lung function and respiratory symptoms. NO₂ also enhances the response to allergens in sensitive individuals. High levels of NO_x can have an adverse effect on

vegetation. Deposition of pollutants derived from NO_x emissions contribute to acidification and/or eutrophication of sensitive habitats leading to loss of biodiversity, often at locations far removed from the original emissions. NO_x also contributes to the formation of secondary particles and ground level ozone, both of which are associated with ill-health effects. Ozone also damages vegetation.

2.3 Local Air Quality Management in Lewes

Lewes completed its first review and assessment round in 2000, at that time it was considered that no AQMA was necessary. The second round of review commenced in 2003, based on a two-stage approach involving an initial Updating and Screening Assessment (USA) and if necessary a Detailed Assessment. The USA identified potential exceedances of air quality objectives in Fisher Street and the Detailed Assessment completed in 2004 concluded that the annual mean air quality objective for nitrogen dioxide was likely to be exceeded. Consequently the District Council declared an AQMA at the end of June 2005, as shown in the figure below.

The table below shows the NO₂ objectives exceeded within Lewes AQMA. Additional information is available in the Annex and a full list of the objectives set out by the 2007 National Air Quality Strategy is available from the DEFRA website.

A number of new sites to monitor NO₂ passively with diffusion tubes were installed in the Town Centre in 2005, and a continuous monitoring station was installed in West Street, in the vicinity of Fisher Street, in March 2005 to measure NO₂ and PM₁₀.

Table 2-1 NO₂ air quality objectives and annual mean measured in Fisher Street (2005).

<i>NO₂ measured at “Fisher Street West” site in 2005</i>	<i>UK Objective (measured as)</i>	<i>Date to be achieved by and maintained thereafter</i>	<i>European obligations</i>	<i>Date to be achieved by and maintained thereafter</i>
53 µg m ⁻³ annual mean	40µg m ⁻³ annual mean	31 December 2005	40µg m ⁻³ annual mean	1 January 2010

⁵ Review & Assessment reports are available on www.lewes.gov.uk/environment/824.asp

⁶ See www.Defra.gov.uk/environment/airquality/strategy/pdf/air-qualitystrategy-vol1.pdf for full list of objective

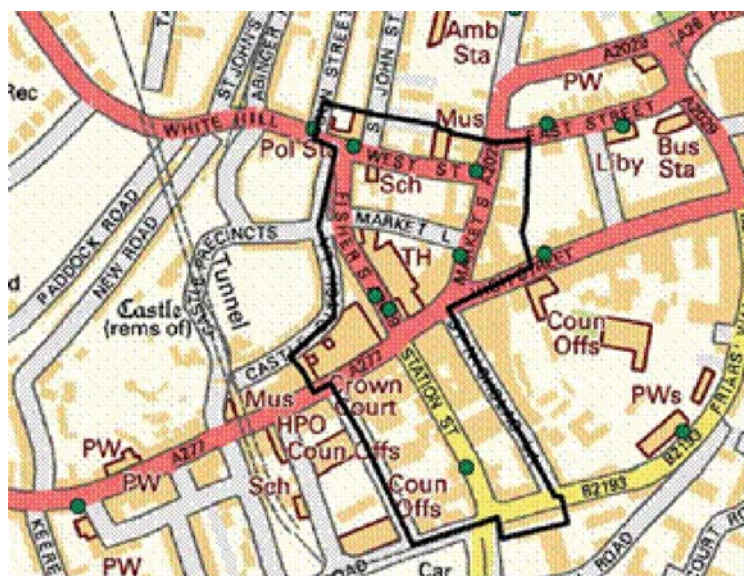


Figure 2-1 Lewes Town Centre AQMA

The “Stage 4 Further Assessment” (FA), undertaken by independent consultants and completed in 2006, concluded that the AQMA in Lewes Town Centre should be maintained, and that the main source of air pollution in this area was road traffic (as discussed in the following sections). Results from the new monitoring sites reported in the USA 2006 showed that the NO₂ annual mean objective was also exceeded in Market Street, within the AQMA, and High Street, just outside the AQMA.

If additional exceedances are confirmed the AQMA may be extended, however any amendment to the existing AQMA boundaries is not likely to impact significantly upon the measures set out within this Action Plan, because the majority of the measures are aimed to improve air quality within all the Town Centre. Results from the monitoring at Fisher Street and at site locations within the AQMA are reported in the figures below.

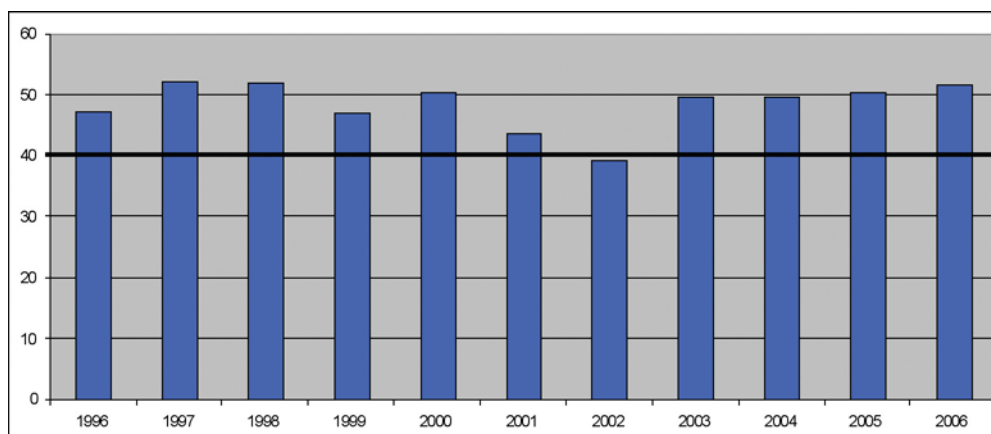


Figure 2-2 Annual NO₂ concentration (µg/m³) at “Fisher Street East”

⁷ Further Assessment for NO₂ in LDC: www.lewes.gov.uk/environment/824.asp

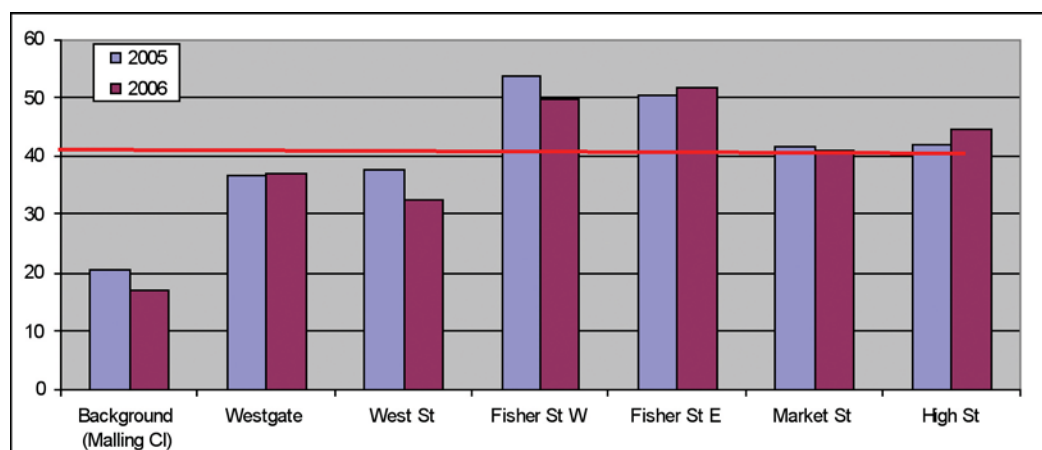


Figure 2-3 Annual NO₂ concentration (µg/m³) at key locations (2005-06)

2.3.1 What pollution levels are expected in the next years?

Air dispersion modelling was carried out through the Further Assessment report in 2006 to obtain expected annual NO₂ levels within the AQMA in 2010 – which is the target date for the NO₂ annual mean air quality objective of 40µg/m³ to be achieved. The predictions compared well to the monitored results, despite the difficulties associated with modelling the narrow constricted and congested roads in the AQMA. The modelling confirmed the extent of the area exceeding

the objective, as being mainly confined to Fisher Street and the High Street.

A series of scenarios were separately modelled to assist in understanding the likely impact of changes over time, and in response to changing vehicle flows.

The results for all scenarios indicate that although the annual mean NO₂ concentrations reduce from that of the 2005 base case, the objective in 2010 will still be exceeded at a few locations in Fisher Street.

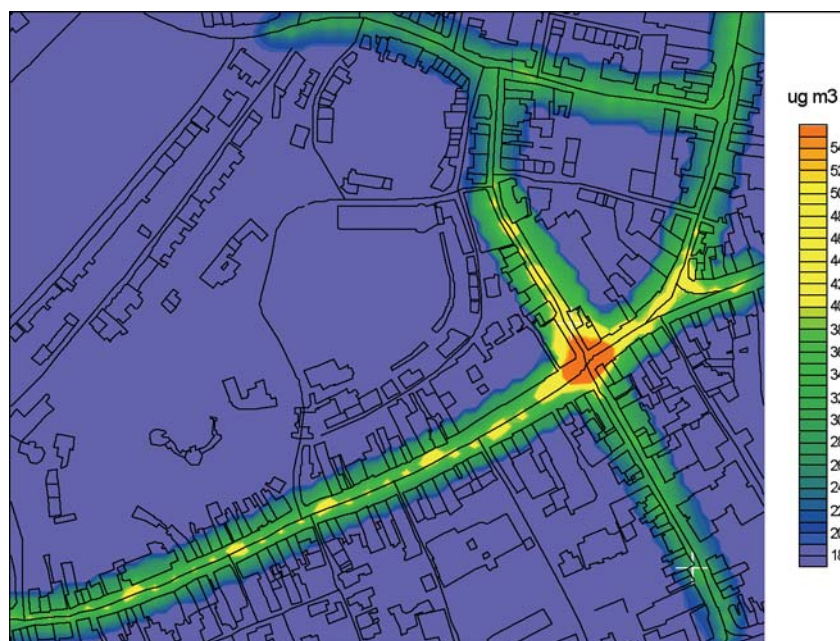


Figure 2-4 Predicted annual mean concentrations for 2010 (µg/m³)

2.3.2 Where does the pollution come from?

To better understand the air quality improvement needed at a location to achieve the AQS objectives, it is necessary to determine the individual source emissions that contribute to the overall predicted pollution concentration.

As part of the FA a source apportionment was undertaken considering emissions from specific vehicle groupings. The assessment was based on classified traffic data supplied by ESCC. A contribution representing background sources was also incorporated.

The source apportionment modelling was based on concentrations of oxides of nitrogen (NO_x) rather than

NO₂, as NO_x is predominantly emitted as the primary pollutant. The source apportionment was undertaken for specific sites in the AQMA, mainly relating to the diffusion tube monitoring sites, placed at relevant locations.

The results of the source apportionment (Figure 2 5) indicated that cars were the main group of emission sources. Although in some locations, the contribution from cars was almost equalled by either buses or Heavy Goods Vehicles (HGVs). The contribution from buses and HGVs combined, exceeded that of cars and Light Goods Vehicles (LGVs) combined for the sites investigated. The contribution of the background sources also formed a major part of the total predicted NO_x at each site investigated.

The results are in line with those from the Sussex emissions inventory , which highlights the prominence of emission sources in Town Centres within Sussex, due to slower moving traffic and domestic and commercial energy use.

Results from the continuous monitoring station in West Street, reported in Figure 2 6, show that NO₂ levels on a typical weekday (Tuesday to Thursday), is significantly higher than at weekends, and that the NO₂ level peaks during morning and evening rush hours.

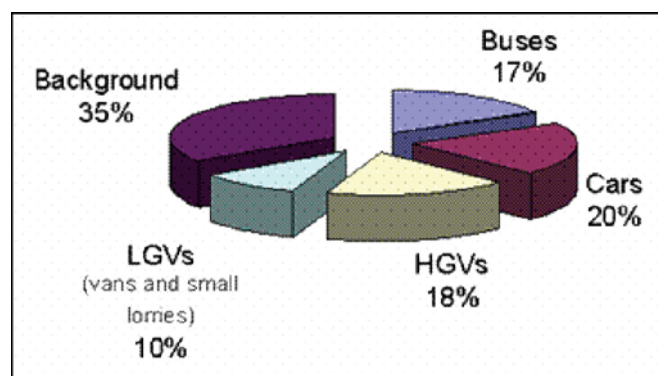


Figure 2-5 Estimated NO_x emissions (%) in the AQMA for different source categories

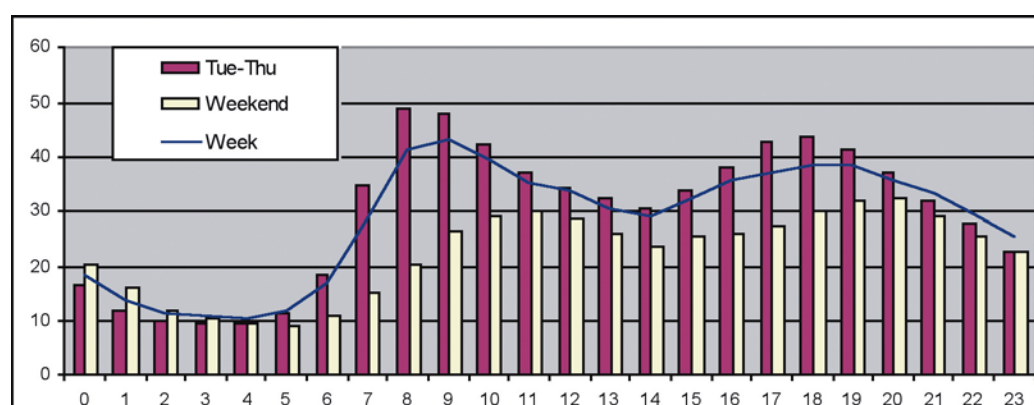


Figure 2-6 Hourly NO₂ measured at LS2 on a typical weekday/weekend in 2006 (pollution episodes not included)

⁸ http://www.sussex-air.net/local_emissions.html

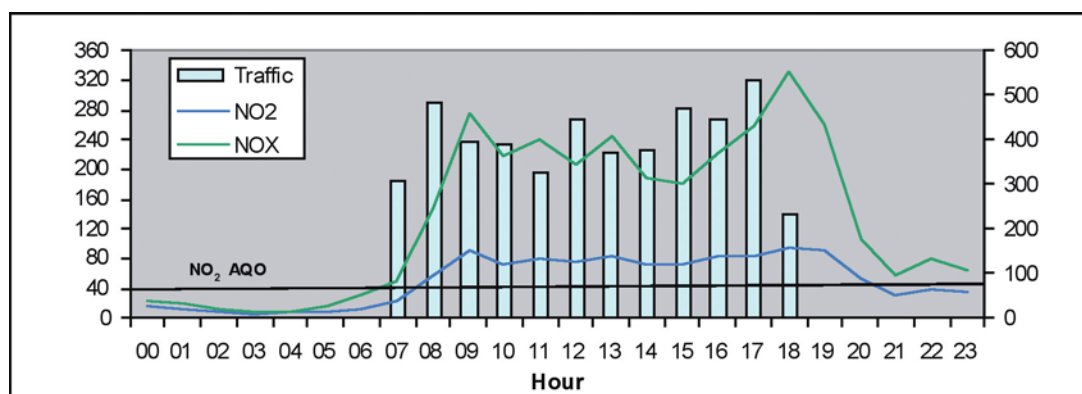


Figure 2-7 Hourly traffic count at Fisher Street from 23rd February 2006 and hourly NO₂ and NO_x measured at the West Street AQMS on the same day.

Figure 2.7 above shows hourly results from a manual 12-hour traffic count carried out in Fisher Street in February 2006, and results recorded from the nearby continuous monitoring station on the same day for NO₂ and NO_x. Again the proportional relationship between the above pollutants and the traffic level is evident. The peak in pollutant level is reached an hour after the peak in traffic, and decrease in pollutant level after the peak can be much slower.

2.3.3 How much does the NO₂ level have to be reduced?

Annual mean NO₂ concentration measured at Fisher Street in 2005 was 53 µg/m³. The level of NO₂ will have therefore to be reduced by more than 30% (13.4 µg/m³) if the government target for NO₂ is to be achieved by the target year of 2010 (Table 2.1).

According to the model prediction, which takes into consideration the effect of actions taken at national and regional level in order to reduce air pollution, such as the introduction in the market of the less polluting vehicle engines (Euro IV and V), where these

measures are effectively implemented and the traffic increased by an estimate 1% per year (between 2005 and 2010), the level of pollution in Fisher street would only have to be reduced by 5%.

The majority of the measures implemented through the action plan are expected to be beneficial to the whole Town Centre in terms of traffic and emissions reductions. The achievement of the objective in Fisher Street will therefore guarantee the achievement of the objective in all the AQMA and the Town Centre, where NO₂ levels are much lower than in Fisher Street. However the following points need consideration:

- Yearly pollution levels are highly dependent on global meteorology (e.g. 2003 was not notably a very polluted year)
- NO₂ pollution is determined by looking at NO_x emissions derived from local sources and background influences; however a number of varying activities contribute to the source of emissions

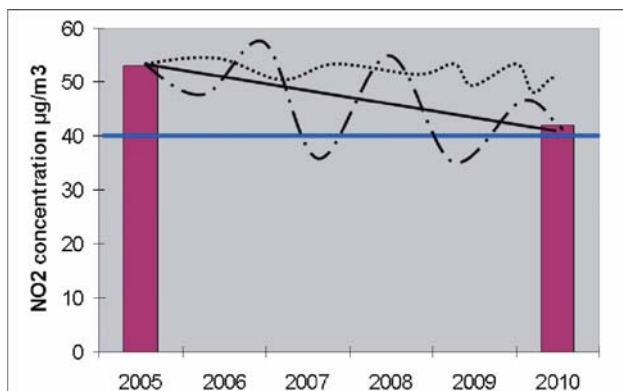


Figure 2-8 Modelling predictions for 2010 and possible trends.

⁹ www.Defra.gov.uk/corporate/consult/aqeg-nitrogendioxide/consultation.pdf

- The relationship between NO₂ and NO_x is non-linear and determined by photochemistry that is highly location dependent; in steep canyon streets such as Fisher Street this process is further complicated
- Recent studies show an increase in primary NO₂ emissions from road transport, including new “less polluting” vehicles and those fitted with Diesel Particulate Filters (DPF). Although a reduction of absolute emissions in pollutants in the former or particulate in the latter it is likely that modelling may be underestimating this component of NO₂ pollution and levels will not decrease as much as expected by 2010
- Diesel vehicles produce more NO₂ than petrol vehicles; there is evidence of a significant increase in the sales of Diesel vehicles. It is estimated that over 40% of all cars/fuel sold in 2010 will be diesel. The modelling does not take into consideration this increase
- Little research has been carried out with regards to emissions rates for low speeds, particularly from HGVs. Therefore the modelling results for such areas should be treated with care
- Results from the new monitoring sites within the AQMA, Town Centre and trends from historical sites such as “Fisher Street West” (Figures 2.3 and 2.4) show no significant reduction over the last few years, this however may be caused by meteorological conditions.

2.4 New Developments

A number of new developments likely to have a significant impact on the AQMA are described below. Additional details, including air quality impacts on these and other future developments, will be provided in progress reports, as more information becomes available or detailed planning applications are submitted.

2.4.1 The proposed Phoenix Quarter development

Terracotta developments have proposed to develop the area incorporating North Street and the Phoenix Industrial Estate. Terracotta Property has acquired several properties on the existing industrial estates and also areas of land at nearby Mallings Brooks. Their proposals for the area, to be known as the ‘Phoenix Quarter’, include a mixture of housing, recreational and commercial properties, and relocation of existing businesses to the Mallings Brooks industrial estate. The proposal includes:

- A new road layout to enable East Street and Little East Street to become less trafficked
- A multi-storey car park
- Car parking is planned for the lower level with pedestrian walkways above, so that most of the area will be free of parked cars
- The developers proposed a mixture of textures and materials to integrate with “the parking capacity and traffic flow routes in the scheme would allow some existing off-street car parks to be redeveloped, thus offering the town’s historic core some respite from traffic”.

A final outline planning application originally due for submission in early 2009 has now been withdrawn. In March 2009 the developer announced that the proposal will not now proceed and is “reconsidering options”.

2.4.2 The Baxter development

The redevelopment of an old print work just outside the Eastern border of the AQMA has been approved and the construction of the 54 residential units is now complete. The developer has complied with conditions aimed to mitigate adverse impacts on air quality. Only 19 car parking spaces have been made available, two of which are dedicated to a car-club.

2.4.3 The Lewes House development

The Lewes House site lies to the rear of the High Street and extends down towards Friars Walk and Lansdown Place. Temporary buildings on the site were vacated in 1999. The District Council prepared a Development Brief to guide the future of the site, which was approved in July 2000. The site is also allocated for development in the Lewes District Local Plan (2003)

The Brief promotes development of a new library for Lewes (completed in 2005) and new Town Centre housing, 40% of which would be car free, affordable housing managed by a social landlord. A new access road has been provided from Friars Walk. An area of public open space would be retained in the centre of the site. Car parking provision is limited to an area of undercroft parking beneath one of the buildings. A planning application has been approved for the housing development in the autumn of 2007 and an archaeological investigation of the site has now been completed. The social housing element of the scheme is expected to begin in summer of 2009.

3 POLICY CONTEXT AND EXISTING STRATEGIES

There are a number of related plans and strategies at the local, regional and national level that can be tied in directly with the aims of the AQAP, and will help to contribute to overall improvements in air quality across the authority's area. This chapter sets out the main links between these strategies and the AQAP. Further details of relevant existing policies and strategies are provided in Annex C.

3.1 The 2007 National Air Quality Strategy (NAQS)

DEFRA have recently published the new AQS which introduced new objectives and policy measures, including:

- Early uptake of new tighter European vehicle emission standards (Euro-standards)
- Incentives for cleaner vehicles
- Further reductions from emissions from ships.

The following measures are considered as requiring additional development work:

- A national road pricing scheme
- Low emission zones
- Retrofitting of particulate filters from HGVs
- Reducing emissions from small combustion plants.

3.2 Local policies and strategies

3.2.1 Sussex Air Quality Partnership

The Partnership was formed in 1995 and is made up of representatives from Borough, District and Unitary Authorities in East and West Sussex, County Councils, the Health Protection Agency (HPA), Sussex Primary Care Trusts (PCTs), the Environment Agency (EA), the University of Sussex and the University of Brighton.

The Partnership works towards improving air quality in Sussex by assisting local authorities in implementing the National Air Quality Strategy, encouraging collaboration amongst all organisations active in improving air quality in Sussex, and facilitating an Air Quality Strategy for Sussex. The Partnership collects, interprets and disseminates information relevant to understanding research and managing air quality in Sussex.

The Sussex emission inventory is currently being updated and to include CO₂ emissions and wider split in emissions including sea and air transport, agriculture and natural habitats.

Air-ALERT

This is a service provided by the Partnership, which sends free messages to mobile or home telephones of vulnerable members of the public, informing the individual when poor air-quality is predicted. The service helps individuals to make informed choice on their health management, including activities or medication for that day.

3.2.2 East Sussex County Council Local Transport Plan (LTP2)

The ESCC LTP 2006-11 describes the County Council's strategy for local transport. ESCC worked closely with LDC on producing the final LTP2, submitted in June 2006. The County have been and remain closely involved in the production of this Action Plan, which will be integrated in the LTP. The LTP addressed the four main shared priorities set by the LGA, which include:

- Better Air Quality
- Tackling Congestion
- Improve accessibility
- Safer roads.

The group of LTP schemes listed below include initiatives which may affect air quality:

- Major road schemes
- Demand management
- Development and promotion of bus and other public transport services
- Freight management in partnership with freight industry and other operators
- Schemes aimed to promote walking and cycling
- The Travel Choice campaign, aimed to provide transport information and promote sustainable transport modes
- Travel planning schemes to encourage use of alternatives to single-occupancy car-use
- Reduce the need to travel to access information.

¹⁰ www.Defra.gov.uk/environment/airquality/strategy/

Demand management and road schemes which affect or will positively affect air quality and transport within Lewes area, described in Chapter 4 (“Proposed Measures”), whilst other initiatives are described within Annex C.

3.2.3 Climate Change & Sustainability

Lewes Climate Change Strategy has recently been updated in February 2009, the majority of the actions proposed in the strategy aiming to reduce CO₂ emissions, are also expected to reduce NO₂ emissions.

The recent Air Quality Expert Group report on Air Quality and Climate Change concluded that there are many complex linkages between air quality and climate change and a holistic approach to both is essential if progress is to be made in limiting the impact of human activity.

LDC sustainability and pollution teams have been working together on integrating the two issues and joining forces to develop information campaigns and involve the local communities as discussed in Chapter 4. Further initiatives and strategies relevant to this action plan are discussed in Annex C.

3.2.4 Lewes Local Development Framework (LDF)

The Core Strategy is the central policy document for the Local Development Framework. It will set out the long term spatial vision for the District.

On 29 September 2006 the District Council published its Core Strategy Preferred Options, which included directions to minimise the impact of new development on local air quality. However due to new LDF regulations in 2008 the LDF work has gone back to the “Issues and Options” stage and a revised draft document is expected in 2010. The environment team will be a key consultee in this process.

3.2.5 Signposts to 2010: A Spatial Strategy for Lewes

“Signposts to 2010: A Spatial Strategy for Lewes” provides a vision of transport in Lewes in the year 2010 based on the aspirations of local people.

The document assumes a similar role to the Local Area Transport Strategies (LATS) that have been developed for other geographical areas in East Sussex and provides strategic direction for investment in transport improvements in Lewes, however it is less prescriptive about specific schemes than a LATS.

Several transport schemes are being developed to

implement elements of the vision provided by Signposts to 2010, including; the Living Cliffe, the Ringmer to Lewes Cycleway, and the Eastgate Roundabout scheme (Chapter 4).

It is anticipated that a LATS for Lewes will be developed to guide Local Transport Plan Funding in Lewes for the period 2010-2020.

4 PROPOSED MEASURES FOR DELIVERING AIR QUALITY IMPROVEMENTS IN LEWES

4.1 Introduction

This Chapter sets out the various actions considered to improve air quality primarily within the AQMA and Lewes Town Centre. According to the Stage 4 Further Assessment (Section 2.3.3) current policies and programmes will not deliver sufficient reduction in emissions from road traffic to meet the air quality objective for NO₂ by 2010 (Figure 2 8), when levels expected in Fisher Street will still be 5% above the objective.

The Council is obliged to consider all possible measures and options available to further improve local air quality. The actions described include those taken by LDC on its own, and those taken in partnership with ESCC, local community, local businesses, neighbouring local authorities, regional and national organisations such as Sussex Air and Energy Savings Trust.

The following criteria have been considered to identify potential measures to improve air quality:

- Guidance from DEFRA and NSCA, examples of best practice in air quality management and recommendations from the AQAP helpdesk
- Scheme being implemented or planned through other local strategies (Chapter 3 & Annex C) which may have a positive impact on local air quality. By including them in the action plan, they may be enhanced and their benefits become more significant through accelerating their implementation, the introduction of supportive area-specific measures or simply by raising their profile within the above mentioned strategies (i.e. within the LTP pending programme)
- Schemes identified through the joint work of County & District Council officers over the last few years has aimed to improve air quality within the AQMA, and

has been included in the LTP2 submitted to the Department of Transport in July 2006

- The outcome from the internal and public consultation (Chapter 7).

The potential measures include:

- Measures in support of initiatives already being implemented or planned (e.g. the LTP car sharing scheme)
- Measures which had not been previously considered
- Measures which were screened out following consultation and/or an initial impact assessment carried out during the first working group meeting (Section 4.10).

The measures described below are aimed to achieve one or more of the following objectives:

- Reduce traffic (i.e. Travel plans)
- Reduce congestion (i.e. Parking management)
- Reduce NO₂ emissions from traffic or other sources
- Obtain a better understanding of the current situation, maximise effectiveness of the action plan, raise awareness and/or change travel behaviour (i.e. Data collection through travel/deliveries surveys)
- Improve communication amongst stakeholders
- Increase the engagement of non-statutory stakeholders
- Deliver wider environmental, social or economical benefits, such as increased road safety, reduced noise, reduced emissions of other pollutants and CO₂.

From an area-wise perspective, the measures can be grouped in three-levels:

- Local measures aimed to improve air quality primarily at pollution hotspots Fisher Street, or within the AQMA and central Lewes (e.g. Fisher Street scheme)
- District-wise measures expected to improve air quality within the District and beyond, but likely to produce more significant improvements within the AQMA and Lewes Town Centre
- County-wise measures (e.g. Air-alert)

From a source-wise perspective the measures described below will target the following:

- School-run traffic
- Commuters traffic
- HGVs and deliveries
- Shoppers and visitors
- Through traffic
- Buses
- Idling vehicles
- Non-transport.

4.2 Traffic management and road schemes

4.2.1 “White Hill / Fisher Street / West Street Scheme”

A number of measures aimed to improve air quality within Fisher Street were considered, those which were screened out during the first working group meeting (Section 7.2) are discussed in Section 4.10. For example the closure of Fisher Street to traffic was considered not feasible due to lack of alternative routes and relocation of traffic to other areas within the AQMA, such as Market Street where the objective is already approached or exceeded.

For other options, such as the relocation of car parking and loading spaces or bus stops, it was considered more appropriate to extend the intervention area to the AQMA or Town Centre. These options are discussed within the following sections.

Description

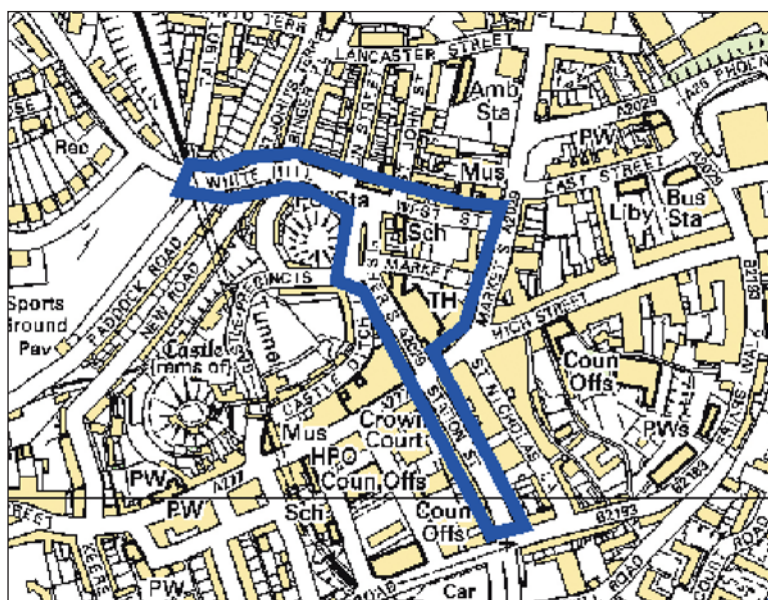


Figure 4-1 White Hill / Fisher Street / West Street scheme

This measure is targeted to improve air quality at the main pollution hotspots within the AQMA (Figure 2 1):

- Station Street, which takes the majority of the north traffic crossing the Town Centre, and
- Fisher Street, stretching between the High Street and West Street.

Both Fisher Street and Station Street are very narrow one-way roads, subject to persistent congestion during the day time, particularly at morning and evening rush hours.

ESCC is looking to improve the flow of vehicles out of Fisher Street by giving them priority over vehicles from White Hill at Commercial Square. A reduction in the vehicle queue lengths in Fisher Street will help to improve air quality.

Changes to the Station Street / High Street junction to reduce standing traffic in Station Street will be investigated, whilst considering potential impacts on road safety and the need to accommodate pedestrian movement.

The scheme is likely to include widening pavements to facilitate pedestrian movement where achievable, and may present the opportunity to use pollution-absorbing materials, if it can be demonstrated that the inclusion of such materials would be cost-effective and would not lead to damage to the historic buildings.

The scheme was included in the LTP programme following joint work between officers from LDC and ESCC following the declaration of the AQMA. Due to highway improvement works short term changes have been made to the priority at Commercial Square in 2008, but this is only a temporary measure as there are some concerns relating to road safety that the priority change may raise. An experimental scheme will likely be fully implemented in late Summer 2009.

Once ESCC are satisfied that the experimental scheme has been successful, a public consultation for the initial design will be completed in 2009/2010 and depending on the results of this consultation will progress to a detailed design in the same year. Construction could potentially take place between 2010 and 2012 depending on lead member agreement and funding. Once the scheme has settled in, ESCC will undertake traffic surveys to measure its impact.

Potential outcome & air quality benefits

In terms of air quality improvement, this proposal has the potential to have a significant positive impact on the most polluted area within the AQMA. The current level of congestion in Fisher Street and the stop/start and idling nature of the traffic has resulted in considerably higher rates of emissions per vehicle compared to traffic travelling at a more constant speed. This is particularly important in terms of the source apportionment split shown in the Further Assessment, as smoothing out the traffic flow would significantly reduce the emissions currently attributable to buses and HGV traffic.

NO₂ levels in Fisher Street have continuously exceeded the annual long-term air quality objective since 2003 by more than 20% (Figure 2 2). More recent data has confirmed that this remains the worst pollution hotspot in the Town Centre (Figure 2 3), over 90% of the traffic crosses Fisher Street during congested periods. The NO_x emission rate for vehicles (in particular HGVs or buses) operating at very low speeds e.g. 5 mph, are much higher than the same vehicle travelling at 20mph.

Modelling carried out with DMRB by increasing average traffic speeds in Fisher Street from 8 kph, used as input data for the Further Assessment modelling study (Section 2.3) up to 32 kph (20mph) showed a reduction in NO₂ emissions up to 12%. The improvements in air quality in Fisher Street could however be off-set by an increase in traffic attracted by the new priority scheme. It is therefore important that other measures aimed to reduce traffic flow and change travel behaviour such as school and workplace travel plans are effectively implemented at the same time. Effective implementation of other measures such as travel plans could have a cumulative impact and contribute to further air quality improvement within Fisher Street.

4.2.2 Beddingham crossing

Description

The Beddingham crossing is a £23 million scheme aimed to improve the A27 by rebuilding the Southerham and Beddingham roundabouts on the A27 outside Lewes, and a new railway bridge to reduce queuing at the Beddingham level crossing between the two roundabouts. The road is used by more than 30,000 vehicles a day. The scheme has

now been completed. The section between Southerham and Beddingham is the most congested part of the A27 as the road carries traffic to and from Newhaven on the A26.

In addition to improved safety the removal of the level crossing will speed up journeys as traffic will no longer have to queue for up to eight trains an hour through the Beddingham crossing. The new roundabouts will ensure that queuing times are reduced and journey times improved. The scheme has been designed to minimise the effect on the environment in this sensitive area.

Potential outcome & air quality benefits

The very short-term impact on air quality within Lewes Town Centre is likely to have been negative due to an increase of traffic through central Lewes while the scheme is under construction. Now completed, the scheme is expected to have a positive air quality impact along the A27 and A26, due to reduced queuing, and within the AQMA due to reduced traffic through the Town Centre (some traffic is known to use Lewes town as a bypass to the A27-A26 congested link). Effective improvements within the AQMA will have to be supported by signage to discourage traffic through the Town Centre as during the construction of these road improvements new driving routines have

been established and new habits will need to be encouraged. (Section 4.4.3).

4.2.3 Lewes Town Centre 20mph zone (LTP)

This scheme aims to develop a pilot 20mph area in Lewes Town Centre that enables some of the alternative ideas, both for resident self help and minimal engineering approaches to speed management, to be developed and evaluated.

An investigation is underway to determine the extent of the 20mph area based on existing vehicle speeds and the potential to implement minimal engineering interventions, but it is likely to include most, if not all, of the AQMA.

The scheme is in-line with efforts to reduce the dominance of motor vehicles in Lewes Town Centre. Preliminary design is underway, and it is anticipated that the scheme will be launched in the 2009/10 financial year.

The level of pollution in 20mph zones is often reduced because they act to deter many vehicles from using the area, and encourage walking or cycling for short trips to shops or to the station resulting in less engine emissions overall. Additionally the speed limit may improve general traffic flow and reduce emissions from acceleration/deceleration and start/stop.



Figure 4-2 The Beddingham scheme

4.2.4 Phoenix roundabout and Eastgate bus priority scheme

This scheme aims to reduce the circulation of traffic through the Town Centre, give greater priority to buses and pedestrians, and accommodate any development of the Phoenix Quarter.

The number of vehicles driving through the AQMA from the Magistrates Court car park, the Court Road car park, and from Court Road, would be reduced by providing more direct access to the Phoenix Causeway for eastward journeys via Eastgate Street which will become two-way. Vehicles exiting the Waitrose car park could turn right onto the Phoenix Causeway instead of going through the AQMA first.

The scheme would also look to provide buses with direct access to the Phoenix Causeway from the bus station for eastward journeys, and avoid the need to drive up School Hill and through the AQMA first.

The scheme would be funded through a Section 106 agreement for the Phoenix Quarter development (Section 2.4), should this progress in the future. However due to the current uncertainty on the above future development, and no clear view on its transport implications, this scheme will be further discussed within the future progress reports.

4.2.5 The Living Cliffe Scheme

The aim of the Living Cliffe Scheme is to reduce the dominance of motor vehicles in Cliffe High Street and provide an attractive, pedestrian-friendly area that can accommodate loading and cycling. It is a key objective to retain the vibrant and distinctive character of this historic street.

The scheme includes measures that should reduce the number of vehicles seen in Cliffe High Street by up to 70%. The pedestrian zone will include further features to encourage pedestrians to make full use of the space, including a 20mph speed limit, widened footways, and narrow “shared surface” to accommodate vehicles, pedestrians and cyclists.

The first stage of construction was completed in August 2007 and the second stage began in February 2008. Due to unforeseen additional engineering requirements, namely the strengthening of pre war below surface culverts, the project is yet to be completed the third stage commenced in January 2009 and is due for completion late summer 2009.

4.2.6 Offham Road Pedestrian Priority Scheme

Offham Road is not always easy for pedestrians to cross because of the speed of vehicles and limited visibility in places. Furthermore, the speed of traffic intimidates pedestrians and encourages the perception that the road is dangerous. There are three schools located near to Offham Road, including one of the largest primary schools in the Town Centre. This scheme aims to improve pedestrian facilities and reduce vehicle speeds along the Offham Road. Measures include signalised crossings at key locations and “priority working” build-outs to slow the traffic along the road.

Offham Road is close to one of the largest primary schools in the Town Centre. With the perception of improved safety and better facilities for pedestrians, there may be a significant increase in walking trips to the local school.

Vehicles from Offham Road travelling towards the AQMA will be slowed by the priority working build-outs, especially during peak hours. The impact of this on queue lengths in White Hill and West Street is difficult to predict, but it may result in smaller queues, and is considered unlikely to result in longer ones. In any case, the vehicle speed reduction in Offham Road will consequently reduce speed in West Street (Figure 2 1) and will be synergetic with the White Hill / Fisher Street / West Street Scheme (Section 4.2.1).

The scheme is currently at the 'detailed design' stage and it is anticipated that part of the scheme will be constructed in the 2009/10 financial year, with the remaining sections planned to be undertaken between 2010 and 2012, but this is dependent on the availability of funding.

4.2.7 Ringmer to Lewes Cycleway

This scheme aims to encourage cycling between Ringmer and Lewes by providing a dedicated, safe and attractive cycleway that will be implemented in two phases.

The development will be funded by money secured through a Section 106 development contribution. Designs for the complete route are currently being progressed and it is proposed to construct part of the route in 2010/11 with the remaining sections being constructed between 2011 and 2012, but this is dependent on funding. Once the scheme is completed ESCC will undertake traffic surveys to measure the increase in cycle journeys made between Ringmer and Lewes.

4.2.8 Lewes Railway Station Forecourt Scheme

The aim of the scheme is to improve the layout of the Station forecourt in order to facilitate pedestrian movement, to reduce the likelihood of road accidents, and to cater for taxis, buses, vehicles dropping off passengers, some limited short-stay parking, and additional coaches during times of rail engineering works.

This could potentially produce a small increase in the use of sustainable transport modes such as buses and trains.

The main element of the scheme is currently on hold pending a decision on the ownership status of the railway bridge. Construction of a pedestrian crossing located away from the railway bridge is an important element of the scheme and is planned to be constructed in 2009/10 subject to consultation and lead member support.

4.3 Parking

The availability and management of parking is important both to ensure the economic prosperity of areas within East Sussex, and as a mechanism for encouraging more sustainable transport. Lewes is one of the few urban centres within East Sussex where parking management has been implemented, primarily to reduce congestion and encourage sustainable transport.

4.3.1 Parking management

The Lewes controlled parking zone (CPZ) became operational in September 2004. Its introduction coincided with the commencement of decriminalised parking enforcement, when ESCC and LDC took over the enforcement of waiting, loading and parking controls from the Police. Since parking controls were introduced, traffic growth in Lewes has been less than anticipated, with evidence of a corresponding increase in bus and train patronage. Following extensive consultation with the District Council, residents and businesses, the CPZ is being extended. The following actions are being implemented as part of the above LTP strategy.

Parking permits

Residents can buy up to two permits. The second permit however can be between 30-40% more expensive. Discounted permits are available for LPG and electric cars. The scheme is being extended to those living at its edge of town who have requested it.

Due to parking spaces being insufficient to cope with the number of permit holders wanting to park, measures being considered are:

- Restrict the number of permits to one per household
- Restrict permit numbers to the number of permit spaces
- Increase the number of parking bays

Parking Charges

Charges to car parks in the inner zones of the CPZ, which include the AQMA, are more expensive. Differential rates apply to short and long term stay to discourage commuters to drive to work (e.g. the maximum time allowed for parking in the Town Centre is 4 hours). There is no charge for motorcycle parking.

Additional measures

The introduction of the following additional measures through a revised LTP parking strategy is under investigation:

- Short-stay free bays adjacent to local convenience stores
- No loading at any time at continuously congested hotspots such as at the 'bottle neck' junction of Station Street with High Street and Fisher Street
- No loading Monday to Saturday 8am-10am and 4pm-6pm at the High Street, around the War Memorial and Eastgate Street
- Review of goods vehicle bays
- Review of yellow line restrictions.

The following measures could be introduced through the action plan in support of the above actions. Other measures related linked to parking management, such as parking spaces for new developments are discussed within the planning development section:

Re-allocation of car spaces/loading bays & bus stops within the AQMA

Particularly on High Street, Station Street and Fisher Street, in order to reduce congestion.

Parking permits/charges to encourage use of low emission vehicles

- Cheaper (or free) residents' parking permits for low emission vehicles such as electric cars, and higher charges for more polluting cars. This measure has been introduced in Richmond London Borough. The

drawback is that those who have an off-street parking space would not be affected, however, there are proposals at national level for big increases in Vehicle Excise Duty for new car purchases in the most polluting categories (such as 4x4), creating a strong incentive for any new car purchaser to choose a greener model.

- Dedicated spaces or discounted/free parking for car-clubs and low emission vehicles
- Free short-stay parking in “Pay and Display” bays for residents with electric vehicles
- Investigate the introduction of on and off-street charging points for electric vehicles, in support of measures to encourage the use of low emission vehicles. This measure would require partnership work with neighbouring authorities. A number of Councils, such as the London Borough of Camden are implementing this measure.

Maintain/expand provision of two-wheelers and bicycles parking provisions

Two wheelers are less polluting than cars, therefore it is important to ensure dedicated parking spaces are provided to meet demand.

4.3.2 Relocation of car parks in central Lewes

Consultation has concluded that a large “park & ride” scheme would be impracticable as it would require large land take. Additionally it may discourage whole-journey use of public transport (for example between Brighton and Lewes).

Lewes car parks relocation

The District Council has recently commissioned a Lewes Parking Study as part of the background work for the Local Development Framework. The submission of this study is expected imminently and it is planned to submit a report to LDC cabinet in July 2009. The outcomes of this study will better inform any future decisions relating to the Lewes off street car parks and the impact on local air quality. The study has a focus on future demand and supply of parking in the town and consider whether the existing pattern of off street parking provision is adequate or whether new or replacement parking sites should be provided.

A “park & walk” programme could be more suited to the size of Lewes Town. This could be implemented through the review of the distribution of the existing car parks, with dedicated long-stay dedicated car

parks at the main access points to town, and a reduced short-stay car parking within the Town Centre. A new long-stay car park in Malling Brooks is currently being considered which could accommodate traffic from North and South East and would target commuters’ traffic. A shuttle bus system could link the car park to the train station and the Town Centre, and could allow easy access to the town for those people not using the already available pedestrian short-cuts. If effectively implemented, this scheme could significantly reduce the traffic accessing the town (i.e. commuters), and the vehicle kilometres travelled while searching for free car spaces within town.

Signage

The installation of signage with clear directions to car parks at strategic locations would support the above programme and reduce the vehicle kilometres travelled by visitors who are not familiar with the area. Cultural services have recently carried out a review of the car park signage and the environment team have been a consultee. Future work will look at further potential improvements to the car park signage and will utilise the findings of the car park study.

Maps showing public car parking and the Controlled Parking Zone (CPZ) in Lewes are available from the ESCC web-site .

4.4 Emissions management

Cleaner transport grant schemes were recently scrapped by the Government and replaced by a shift of emphasis to initiatives providing eco-driver training and consumer advice.

4.4.1 Encourage the use of low emission vehicles

A wide range of cleaner vehicle solutions are available, although the impact on air quality is variable. For example diesel vehicles are more fuel efficient and produce less carbon dioxide than petrol vehicles, however they produce more nitrogen oxides and particles. Particle traps can be fitted to diesel vehicles to reduce their emissions, however it is possible that these systems increase the production of primary nitrogen dioxides from the engine.

LDC and ESCC staff travel plans, currently under review, encourage the use of low emission vehicles, for example LDC travel plan include purchase of low emission vehicles within their policy and the recycling fleet is made out of electric vehicles (See Sections 4.4.2 and 4.5.2). The fleet management review carried

out by LDC in collaboration with EST will help ensure all viable options are considered. Car-clubs will also be using low emission vehicles and parking management actions will also encourage their use.

The implementation of similar policies could be supported by education campaigns, and extended to other employers through the Lewes Town travel plans scheme, local bus, coach, and freight operators, as discussed in the following sections.

4.4.2 Emission reduction within LDC Waste & Recycling fleet

LDC Waste & Recycling services have invested in a number of actions aimed to reduce emissions from their fleet. Some of them are pilot projects and if successful could be extended to include freight companies and are listed below:

- Vehicles used for kerbside recycling collection are electric and therefore a fleet with zero local emissions and the electricity used is from renewable sources
- All new HGVs purchased since 2007 within the waste collection fleet are fitted with Selective Catalytic Reduction (SCR) system. SCR works by injecting a urea-based liquid, “AdBlue”, directly into the exhaust system converting the emissions into nitrogen and water, which then flow harmlessly out of the exhaust. LDC has invested in the purchase of AdBlue. The use of this product may become a cost-efficient way to reduce NOx emissions from HGVs if it is confirmed that the use of AdBlue improves the efficiency of the diesel. Costs could significantly decrease once this technology becomes more common and AdBlue filling stations are installed to allow refilling diesel and AdBlue tanks simultaneously
- Driver training used to train staff in safer, more efficient and environment friendly driving styles
- The fleet is undergoing an Energy Savings Trust Green Fleet Review through the David Wilson Consultancy
- A spreadsheet demonstrating and comparing comparative fuel use for both vehicles and drivers has been developed and is in use for the refuse, street sweeping and recycling fleets. These will be reviewed and acted upon on an ongoing basis
- GPRS satellite tracking systems together with

Geographical Information Systems are being used in conjunction with the University of Brighton and a consultant to reschedule refuse collection rounds for greatest efficiency

- Collection during peak time is minimised or avoided in central Lewes. The department is aware of the location of pollution hotspots within the AQMA.

4.4.3 Reducing emissions from HGVs traffic within central Lewes

As discussed in Chapter 2, the particularly constrained nature of the road network within the Town Centre accentuates the impact of distribution activities. Lorries parked outside dedicated loading bays can easily cause tailbacks and congestion, especially between 8am-6pm. Traffic to and from building and road work sites create a significant contribution to the congestion in the Town Centre. Other sources include through traffic and home deliveries.

Actions aimed to reduce the impact on air quality caused by HGVs should aim to complement locally those strategies being implemented at county & regional level such as freight quality partnerships and route management.

Following the first AQAP Working Group meeting and the February workshop (Chapter 7), meetings took place with Chamber of Commerce, ESCC and local community organisations to discuss potential actions to reduce the impact of HGV traffic. Discussion is ongoing to build a partnership in order to find sustainable solutions primarily to the impact of deliveries and collections within Central Lewes. Action is needed to minimise the impact of growth in demand for this services, expected as a consequence of growth of local economy and a number of applications for new mixed development proposed around the Town Centre.

The following actions are under investigation:

Banning freight traffic through town

Signage is visible at the main access points to Lewes Town Centre limiting access to vehicles heavier than 7.5 tons unless for loading/unloading. However the signs are likely to be ignored by a number of drivers using the town as a bypass to the A26. A local community group has offered to provide volunteers to monitor the heavy traffic accessing the Town Centre.

It is possible to reduce the traffic going through the town with effective management of long-distance freight movements and deliveries outside the Town Centre. This is being considered at county level through the LTP (Section 3.2.2 and Annex C). LDC is working with ESCC and HA to intensify these programmes within the Lewes Town area.

Encourage freight deliveries outside congested periods and reduce vehicle/kilometres travelled

The possibility of creating a *distribution hub* for deliveries to local businesses outside central Lewes was recently dismissed through a feasibility study, which concluded the scheme would have been unsustainable for the local economy. Similar conclusions were reached following consultation with local businesses on the possibility of *banning deliveries during rush hours*.

Preferred and most practical options in the short term are:

- To support local freight management, facilitate and encourage deliveries out-side rush hours
- To reduce emissions and congestion caused by lorries when deliveries take place.

The following list includes some of the actions being considered which could be effectively implemented through a partnership established amongst Councils, local retailers and freight operators:

Database on freight distribution in central Lewes

Collection of information on deliveries (for example time, duration and frequency of deliveries) in order to gain a better understanding of the dynamics of local freight distribution, and establish contacts with local companies that are not already targeted through LTP initiatives. A possible outcome could be the designation of car spaces to loading bays during specific times of the day, or the re-allocation of existing bays and car spaces.

Eco-driving campaign targeting HGVs drivers

Distribution of leaflets with eco-driving tips to lorry drivers (e.g. on how to drive efficiently and save fuel – Section 4.9)

Delivery Maps

To be distributed to local freight operators and include useful local information in order to reduce vehicle kilometres travelled and save time spent on deliveries.

Details to include on the maps could be:

- Loading bays location, roads with restricted access
- Recommended time for access etc.

This initiative could be tested in Lewes Town and if successful could be extended to other congested urban areas within Sussex through the LTP.

Better coordination of road and building works

Following the traffic Management Act 2004, which requires local traffic authorities to do all that is reasonably practicable to manage the network effectively and to keep traffic moving, ESCC appointed a Traffic manager who is responsible for coordination of road works (Annex C).

Road works can cause congestion and therefore increased NOx emissions. These effects are exacerbated in Lewes Town Centre with narrow and already congested roads, and lack of alternative routes. All works within Lewes are co-ordinated to ensure minimum disruption, and in certain circumstances conditions are imposed to work outside peak hours or at weekends. Building works can have a similar effect due to loading/unloading of material, presence of vehicles or scaffolding which occupies road space. Building work sites operational at the same time can have cumulative effects.

The LTP policy introduced for road works could include stricter controls in sensitive areas such as Lewes, and be supported by similar measures for building works which are regulated by the district officers. Effective communication between ESCC & LDC is therefore vital.

4.4.4 Reducing emissions from buses

Buses are responsible for a significant proportion of NOx emissions in parts of the AQMA, as reported in the results from Further Assessment (Figure 2 5). Buses in Lewes Town are run by three different operators, two of which are subsidised by ESCC. Additionally, as Lewes is a tourist attraction, coach operators need to be considered. Further partnership work with the operators can support actions implemented through the LTP locally.

The following actions are being investigated in order to reduce the emissions from the existing local bus fleet within the AQMA:

- Implement programmes to encourage the use of low-emission fuels, engines or NOx emission

reduction systems such as those piloted through LDC waste and recycling services (Section 4.4.2), or introduce bus emissions standards. These actions may be difficult to implement due to the availability of funding

- Use of the cleanest vehicles through the AQMA
- Brighton and Hove Buses one of the service providers are launching advanced telemetrics to their fleet to better monitor the eco performance of their drivers.
- Implement eco-driving in drivers training and ensure that engines are not left idling unnecessarily at bus stops/stands (Section 4.4.5)
- Review location of bus stops within the AQMA pollution hotspots such as Fisher Street
- Investigate the possibility of introducing an automated ticket system to reduce stopping times
- Intelligent transport system tools, such as traffic light phasing adapting to queue lengths or giving priority to buses, which are being successfully implemented in Brighton & Hove and coastal towns.

4.4.5 Reducing emissions from idling engines ***Enforcing idling vehicles legislation***

Regulation 98 of the Road Vehicles (Construction and Use) Act makes it an offence to leave an engine running unnecessarily while the vehicle is stationary. The Road Traffic (Vehicle Emissions) (Fixed Penalty) (England) Regulations 2002 (SI2002 No 1808) enables all local authorities to issue Fixed Penalty Notices (FPNs) to drivers who allow their vehicle engines to run unnecessarily while stationary. Local authorities have recently been given powers to enforce in an effort to address growing concerns about pollution and the environment, and some of the Greater London authorities, such as Croydon are in the process of enforcing this legislation. This may be difficult to implement in Lewes due to lack of resources. It may be a preferable solution in the short-term to raise awareness about the impact of idling engines through targeted campaigns to specific categories of drivers, or areas where vehicles may be found idling unnecessarily and responding to complaints from the public. For example eco-driving training could target bus, taxi or lorry drivers. School travel plans could also include eco-driving training for parents. The use of the “cut engine cut pollution signs”

“Cut engine, cut pollution” signs

Provide transport terminals or stands, including taxi, bus and coach stands, and schools drop on-off area with prominent signs requiring drivers to switch off their engines when stationary (targeting initially Lewes Town area). These signs have been effectively introduced at level crossings in neighbouring authorities such as West Sussex and Brighton & Hove to encourage drivers to switch off their engines when waiting. BHCC is investigating using these signs at drop off points at station and public places.

Signage could be introduced at similar locations within our district such as the swing bridge & the rail crossing in Newhaven, or the short stay car park and taxi rank at the rail station, the bus terminal, and drop-off points at schools. These measures may not affect directly the air quality in the AQMA, but will help raise awareness about air pollution.

4.4.6 Vehicle Emission testing ***Roadside emission testing (RET)***

The annual MOT test required for every vehicle over three years old includes the measurement of emissions carried out by authorised examiners. Roadside emission testing may be used by local authorities in England and Wales which have declared a traffic-related air quality management area (AQMA) under s.83 of the Environment Act 1995. Under these provisions authorised personnel may carry out a roadside test, if emissions exceed the permitted level a fixed penalty notice may be issued, or the driver may be asked to produce a certificate demonstrating that the vehicle has been fixed. Several authorities, or groups of authorities, have implemented programmes, and more plan to do so.

Remote sensing technology

There is concern that the MOT test does not reflect a vehicle's emission performance when it is actually used on the road. A new technology has recently become commercially available in the UK which is able to remotely detect vehicle emissions (including NOx, carbon dioxide), alongside number plate recognition without having to stop drivers, speed and acceleration are also measured. The result of the test can be displayed instantaneously to drivers on a Variable Message Sign. Drivers of the highest polluting vehicles could be contacted directly and offered advice regarding servicing of their vehicle. The survey could be undertaken in conjunction with the

launch of campaigns or events (e.g. eco-driving, car-sharing, travel planning) and cumulative effects may be significant.

4.5 Sustainable transport (Smarter Choices)

Air quality can be improved by changing travel behaviour using technology is just one way of solving pollution caused by car traffic. Another is to influence individuals travel behaviour. The following measures can effect this change:

4.5.1 Increase public transport patronage

Actions in support of those implemented through the LTP (Annex C) include:

- Working with local bus and train operators on information & marketing campaigns, for example through promotion events, publicity on buses, distribution of free-taster tickets targeted to car-users
- Increase the availability of timetables, produce bus maps, improve information available for example through the Internet
- Improvement to local bus stops in terms of accessibility and facilities to ensure passengers wait more comfortably
- Investigate the possibility of introducing real time passenger information, though this is costly.
- Increase accessibility to Lewes Town and other key centres within the District and neighbouring authorities, and increase the frequency of existing bus routes connecting key locations
- Staff discounted travel cards or tickets through travel plans schemes (to be implemented through Staff Travel Plans). This option is limited to bus travel only (2002 Finance Act). ESCC offer all staff at County Hall half price bus travel (funded through parking revenue at County Hall car parks).
- Analyse data from travel surveys to identify potential new routes to/from Lewes Town
- Investigate the possibility of extending LTP programmes undertaken elsewhere in Lewes Town. For example: the use of real-time information at bus stops, introduced within the coastal towns, or satellite tracking system, which is being tested in Eastbourne. These schemes however may be in conflict with the historic nature of the town.

The characteristics of the Lewes townscape and the

size of local bus operators can however limit the scope of some actions. For example: the use of real-time information signage not only requires a significant monetary investment, but also space which may not be available in canyon streets within the Town Centre surrounded by listed buildings. ESCC fund about half of the buses in Lewes, by imposing higher standards the resulting costs are likely to fall on ESCC through higher bus contracts, unless grants become available. A formal bus quality partnership or the use of satellite tracking system are therefore unlikely be a feasible way to increase bus patronage and reduce emissions in Lewes Town.

The preferred option may be for LDC and ESCC officers to establish joint working procedures with local operators, i.e. through a voluntary informal quality partnership, in order that the above actions and those described in Section 4.4.4 above can be effectively implemented.

4.5.2 Travel Planning

Increased traffic growth together with peak period congestion can offset benefits achieved by less polluting vehicles. The effect of traffic congestion is difficult to predict, but it is estimated that exhaust emissions could increase by 20% to 30% when traffic flows are congested. As shown in Figure 2 7, higher rates of pollutant emissions are produced during rush hours. Described below are options aimed to enhance travel planning schemes already introduced through the LTP (Annex C)

Workplace travel plans

Workplace travel plans typically reduce car driving by between 10% and 30% . County & District councils have been working in partnership over the last year to review their travel plans and achieve further cuts in business mileage, reduction in emissions and a significant change in travel behaviour.

LDC are now investigating the introduction of pool cars and cycling training schemes already implemented through the ESCC travel plan. ESCC is also working towards encouraging the take-up of workplace travel plans amongst large organisations.

Travel surveys will also be carried out in order to gain a better understanding of the influencing factors on employee travel and establish main commuter routes in order to target future actions.

These schemes can further be implemented through the action plan by:

- Accelerating the implementation of workplace travel plans within Lewes Town through the "Lewes Town travel plans"
- Assisting Brighton & Sussex Universities and Sussex Downs College with their travel plan reviews
- Obtaining free fleet management and eco-driving advice from EST and extend the scheme to other organisations.

LDC Travel Plan

The three objectives of the existing Travel Plan are:

- Reduce car use to and from work by 10% (from a 2005 baseline) by April 2008
- Reduce business mileage for private cars (essential, casual and contract) by 5% (from a 2005 baseline) by April 2008
- Improve emissions from the Council's vehicle fleet in line with the vehicle replacement programme

At the time of writing this report LDC had successfully reduced car use to and from work by exactly 10%. We have yet to carry out the latest survey but there will be a new survey in 2009 that will carry out a comparison for the last 4 years. From 2005/06 to April 2008 LDC also achieved a 7% reduction in business mileage for private cars from 327,112 to 304,078 miles per annum.

National Indicator 185 requires a reduction of CO₂ of 3% from local authority fleet. Current thinking is that each department with responsibility for fleet vehicles will be set this target with a requirement for quarterly progress reported back to the Corporate Management Team.

The Council has launched (and in some cases will be re-launching) the following proposals from the Travel Plan during 2009, and investigating further potential options:

- Promotion of the Liftshare website to encourage car-sharing to and from work
- Increase promotion of the interest-free loan scheme for public transport season tickets
- Act as agent for Brighton & Hove Buses so that cheaper tickets can be offered to staff

- Publicise the changing and showering facilities in Council buildings to cyclists and improve cycle storage where required
- Increase awareness and uptake of tax free bike scheme
- The CO₂ limit for Council Lease Cars and new cars purchased with a Council loan is to be reduced to 170g/km as of 2008
- Use 5% Bio-diesel in Council refuse vehicles
- All new staff educated about defensive driving techniques as part of the induction process.
- Propose a community/LDC staff pool car – This has been adopted and cars are expected to be rolled out late summer 2009.

School travel plans

Short car journeys can have a significant effect on elevating road traffic emissions. For example, in the vicinity of schools local traffic flows can increase 20% between 8.00am and 9.00am. This additional traffic will add to the commuting traffic and generate local congestion. The effects of short journeys to schools and other destinations will further exacerbate emissions due to the problems of 'cold starts'. Emissions from modern catalyst cars can increase 10-fold during the first kilometre of a journey, prior to the engine warming and the efficient operation of the catalyst.

A county wide survey in Buckinghamshire has shown a significant drop in the number of cars being used for the school run. The survey results found that in 2006 only 27% of children travelled to school in the car with 73% using sustainable transport and over 3% cycling (over £250,000 was invested in capital projects and wider promotional material to support schools committed to sustainable travel in 2006).

- LDC & ESCC will work together to accelerate the implementation of travel plans at schools within Lewes Town Centre, and assist in reviewing those which have already implemented travel plans. Other actions will include: analysis of data from travel surveys in order to identify potential routes for school buses
- Identify additional measures which encourage more use of alternatives to the car for school journeys
- Raise awareness of air quality through participation

in air monitoring projects, talks, air quality monitoring surveys, joint work with sustainability team and Sussex Air.

Personalised Travel Planning

A Personal Travel Plan provides advice on how to travel from one location to another. Personal Travel Plans also aim to reduce the amount we travel, for example, by encouraging residents using local shops and services whenever possible. The use of local facilities helps to support the local economy and builds a sense of community. Maps for residents of Lewes Town showing for example location of shops, bus stops could be developed in parallel with delivery maps as discussed in section 4.4.3.

4.5.3 Car Clubs

A car club provides its members with quick and easy access to a car for short term hire. In the UK, former car owners increase their use of non-car transport modes by 40% after joining a car club. Two-thirds of those who owned a car before joining saw their mileage fall by an average of around 25% . Car club vehicles are normally “greener” than the average private car. People joining car clubs often give up a polluting ‘old banger’ thereby further reducing emissions: 45% of private cars that were replaced by use of a car club car were more than 10 years old . Joining a car club can reduce the number of miles driven by an individual by an average of 25% as members look to other modes of transport for some journeys. Additionally, one car club car has been shown to replace around 6 private cars as people give up owning a vehicle, thus reducing parking pressure.

There are already two local car clubs in Lewes Town. The Council has worked together with the existing car clubs and commissioned a car club feasibility study that found there was a need and market both in the local resident and business community for a car club.

A pilot project will provide two low emission vehicles that will be deployed in the Lewes area so as to provide an alternative to private car use and raise the profile of travel choices and how these impact on the local air quality. One of the vehicles will be available during office hours for use by LDC staff as a pool car and by doing so will encourage staff members to commute to work using sustainable means. The car club will also help meet national indicators 185, 186 and 188 and lead to:

- Air quality improvements
- Significant reduction in carbon emissions
- Easing congestion
- Enhancing travel plans (workplace, residential, school)
- Reducing transport costs (household and business)
- Supporting sustainable transport
- Revitalising communities and neighbourhoods
- Reduced parking ratios
- Enhancing social inclusion and accessibility by increasing transport choice
- Reaching non traditional public transport segments

4.5.4 Car-sharing

60% of car drivers would be willing to share a car to work if there was someone to travel with . New guidance published by the Department for Transport (DfT) puts car sharing up the transport agenda and increase awareness among motorists. Over 147,000 individuals have joined the free scheme www.liftshare.com, with those who regularly share their journeys typically saving over £1,000 a year and cutting their CO₂ emissions by 1 tonne . With more Local Authorities reported to be considering introducing High Occupancy Vehicles lanes it is hoped that motorists throughout the UK will take this opportunity to think about their travel behaviour. If everyone shared just one journey per week then congestion would be reduced by a considerable 20%. The benefits of car sharing include:

- Reduced travel costs: by splitting the costs of travel, drivers and passengers can save money on the cost of fuel. On average a car sharer will save around £1,000 a year
- Reduced congestion
- Reduced pollution
- Improved access in areas with limited public transport.
- Improved road safety.

A car-sharing scheme is successfully being implemented through the LTP Travelchoice scheme, as described in Section 3.2 and Annex C. LDC is working with ESCC to increase take-up of car-sharing

¹⁸ ECI, University of Oxford ‘UK car clubs: an effective way of cutting vehicle usage and emissions?’

¹⁹ www.carplus.org.uk/carclubs/env-bens.htm

²⁰ www.carplus.org.uk/carsharing/envtbenefits

²¹ www.liftshare.org/media.asp

within Lewes Town Centre through an extended marketing campaign and the organisation of events such as the Lewes Town car-sharing day (22 September 2007) and Fume Free Friday (19 September 2008).

4.5.5 Walking and cycling

One in five car journeys is less than one kilometre, it takes 8 minutes to do 500 metres on foot. It keeps you in shape and can save you time avoiding queuing in congested traffic or looking for a parking space.

Every year, a car emits three times its own weight in pollutants, whereas a bicycle does not pollute. It is an ideal means of transport for short journeys and is good for health, the bicycle can also be used with children, for example for journeys to school.

LDC will involve and seek feedback from local community groups, and support ESCC to intensify the implementation of LTP programmes within Lewes Town, for example those aimed to identify new cycle routes or improve existing facilities and signage, or through the Travelchoice campaign. Travel Plans will also include actions aimed to increase walking and cycling. LDC in partnership with local cycling groups and ESCC have already produced and distributed a new cycle map for Lewes Town Centre and similar maps can be produced for the other urban locations in Lewes District Council. The provision of cycle training for local employees and 11-16 years olds will further encourage the uptake of cycling.

4.6 Development Planning

Actions need implementing in order to mitigate the impact of development and reduce exposure to poor air quality through design, particularly for residential development in areas which already, or are likely to, exceed national air quality objectives, such as the AQMA in Lewes Town Centre.

Reducing the number of vehicle movements associated with a development will reduce associated pollution and encourage changes in behavioural patterns. The following actions could be introduced in support of the LDF Sustainability Checklist and Core Strategy measures discussed in Section 3.5:

- Car parking spaces allocated to car clubs / pool cars (such as for the Baxter development (Section 2.4.2))
- Reduced parking for new developments: ESCC planning policies have introduced criteria such as

capping car parking spaces (1 per residential unit, 2 per business unit) and a minimum amount of parking space for bicycles. Planning of new developments in Lewes Town will be linked to further reductions in car parking for level of accessibility by land use. For example, less parking for locations close to public transport. A condition imposing car-free residential developments within the AQMA is also being considered

- Encourage the use of best practice during construction activities to ensure management of haulage routes (for example avoidance of Town Centre area where possible, or during peak time)
- Implement greater planning control in the AQMA, such as:
 - No parking allocation for new developments within the AQMA;
 - Restrictions in change of use of existing developments
- Raise the profile of the AQMA through specific identification within the LDF
- Encourage the uptake of Low emission strategies by developers
- Encourage developers of large development to provide information on sustainable transport modes to home buyers
- Investigate the introduction of guidance notes for air quality assessments within or in the vicinity of the AQMA.
- Investigate the introduction of air quality supplementary planning guidance for developers.

4.7 Non-transport measures

A significant proportion of the overall NO_x emissions within the AQMA are produced by background sources, as showed in the Further Assessment source apportionment (Figure 2 5). Traffic emissions from road links outside the AQMA also contribute to background pollution within the AQMA.

The majority of the actions so far will contribute to a reduction in that proportion of background emissions produced by the road network around the AQMA. Additional actions aimed to reduce emission coming from other background non-transport sources are listed below:

Domestic heating, energy saving and insulation

A recent report from AEA technology suggests that smaller boilers, that do not come under Clean Air Act provisions for chimney heights could lead to localised concentration of NO₂. The district will intensify the promotion of national schemes on domestic heating and energy efficiency aimed for example to improve insulation and replace/service boilers within Lewes Town. Active promotion is already underway through the EMAS and Climate Change strategies (Section 3.2 and Annex C).

LAPPC and LA-IPPC enforcement

The Council will continue to ensure that emission to air from local industrial processes are minimised and comply with LAPPC and LA-IPPC regime.

However emissions from industrial sources are unlikely to contribute significantly to background pollution within the AQMA, due to the absence of large industrial installation within or in the vicinity of Lewes Town Centre.

4.8 New technologies

New technologies can be effective in minimising the impact of traffic when this is unavoidable. For example, satellite tracking is being tested through Eastbourne and Brighton and Hove local bus fleet (as described in Annex C) and it could potentially be implemented in Lewes town if found to be successful and cost-effective. Further options to encouraging the use of low emission vehicles, as described in section 4.4, include:

Bio-fuels (fuel from biomass)

Initiatives aimed to increase the production and use of bio-fuels locally (and as actions within the Council staff travel plans) are being co-ordinated by the LDC sustainability team and travel plan officer. According to the mandatory targets set through the European Union Bio-fuel Strategy, 5.75% by energy content of all road fuels to be biofuels by 2010. Biogas is considered the most environmentally friendly bio-fuel, while use of bio-diesel is likely to increase NOx emissions from engine exhausts, although there is a substantial reduction in CO₂ and PM10 emissions. Additionally bio-fuel allows the recycling of waste oils.

Technologies to reduce emission in NOx are being tested. For example the use of ORYX LED additive in Texas has achieved significant reductions in NOx

emissions from bio-diesel. The possibility to trial this technology through local bio-diesel producer in Lewes is being investigated.

NOx absorbing additive AdBlue

As discussed in section 4.4.2, this additive has been proved to be very efficient in reducing NOx emissions when used with diesel fuel. A pilot project is currently ongoing within LDC Waste & Recycling services fleet to look at its effect on fuel efficiency. AdBlue will be used for all purchases of HGV refuse collection vehicles for the foreseeable future.

NOx-absorbing paint

These technologies could reduce pollution levels at critical hotspots within the AQMA. Energy from sunlight is used to catalyse oxides of nitrogen into harmless nitrogen and oxygen. The use of this product is being trialled respectively by the London Boroughs of Camden and Westminster, the Highways Agency and elsewhere in Italy and France. Paint is being tested at schools (Westminster), adjacent to major roads (M60) and artificial canyon streets (France). Testing this product in Lewes could provide useful data on effects on natural canyon streets. Discussions with producers and officers managing pilot projects are ongoing to further establish the effectiveness of this technology.

4.9 Engagement, information and education

Joint work with other Council Departments and ESCC, neighbouring local authorities and the Sussex Air Partnership is being strengthened in order to implement and coordinate campaigns and events aimed to raise awareness on air quality and related issues such as climate change.

LDC will also need to intensify the partnership work with non-statutory stakeholders, for example a local community group has offered volunteers to carry out travel surveys and proposed projects, such as fund raising events, grants applications and purchase of a community bus available for use by groups of shoppers from neighbouring villages. The implementation of some of the options discussed in Section 4.4.3 will require active participation of local businesses.

Engagement of students, commuters, residents and local community groups can also be strengthened, through involvement in school travel plans, sport

events, or health impact of air pollution could also be very effective in raising awareness and engagement of the local community (according to a survey conducted by Sport England the people in Lewes are the most active in East Sussex and committed to a healthy lifestyle).

A local businesses group has offered to help facilitate the dialogue with local distribution freight companies. Ongoing or planned campaigns and events include:

- 'Lewes Car Share day' (Section 4.5.4)
- Air-alert (Section 3.2.1).
- Fume Free Friday

The above could be further enhanced, for example by strengthening partnership work with the PCT and actively involve schools through the Air-alert project, or extend the visibility Sussex Air-Alert scheme, for example through inclusion in local radio weather forecasts. Other projects being investigated to raise awareness, engagement, and provide information include:

Eco-driving

European countries such as the Netherlands and large cities in England such as Bristol and Sheffield have successfully introduced schemes aimed at providing information on more efficient, safer and environmentally friendly driving style. The "Cut Your Car Costs" campaign in Bristol seeks to persuade residents to reduce their pollution impact by explaining the hard-earned cash savings as well as improve health prospects and it has been backed up by a number of initiatives such as an extensive roadside emissions testing programme. The potential savings are substantial and according to Bristol Council following the tips in the guide could save an equivalent of 30p a litre on fuel.

Lewes Air Quality Working Group

Following the successful AQAP workshop organised in February 2007 (Section 1.1), an Air Quality working group has been established, and has met 8 times in 2008. The group has representation from local community groups, ESCC, LDC councillors and local businesses.

Web-site development

The LDC website can further be improved to facilitate access and the exchange of information on air quality, and the provision of feedback from members of the public.

Pop-up messages on computers

LDC employees receive a reminder every Friday afternoon to switch off electrical appliances through a pop-up messaging system, as part of the EMAS scheme. The IT department is currently investigating the possibility of extending this service to include information such as air pollution, eco-driving tips, etc. If successfully implemented the scheme could be extended to other organisations.

The Council will also:

- Continue producing newsletters and participate in events (Chapter 7 and Figure 4 3)
- Encourage developers of large development to provide information on sustainable transport modes to home buyers (Section 4.6)
- Work with the HA to ensure that road signage provides clear and accurate information, is present at access links to the town to reduce unnecessary miles travelled and congestion (Sections 4.3.2 and 4.4.3)
- Investigate the installation of Intelligent Transport Systems (ITS) to provide real time traffic information, availability of car spaces, or changeable traffic signal phasing to adapt queue lengths or to give priority to buses and reduce their journey times.

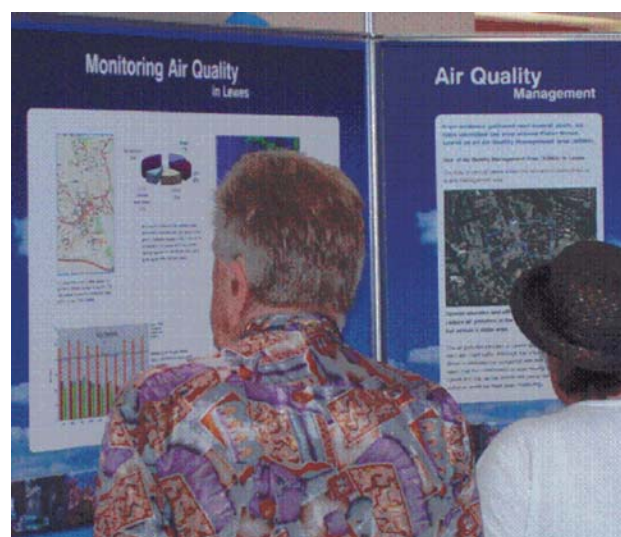


Figure 4 3 Lewes air quality display boards (Chapter 7)

²⁴ <http://www.bristol.gov.uk/ccm/content/Transport-Streets/transport-policy/smarter-driving>

4.10 Measures not taken forward under the current Action Plan

The following options are unlikely to generate benefits outweighing costs at present, are not currently

feasible or are superseded by alternative measures being taken forward. Some of these options may be reassessed in futures reviews of the AQAP.

Table 4-1 Measures discharged within the current action plan

Measure	Reasons and future likelihood
Road pricing	<p>Following the positive results from the London congestion charging scheme, road pricing is being tested elsewhere. It is not considered a cost-effective option to implement at local level in Lewes Town Centre in the short/medium term.</p> <p>It may be introduced in the longer term at national level (Section 3.1)</p>
Removal of receptors through purchase or demolition	This measure is too costly and impracticable for roads such as Fisher Street, part of an historic complex.
Reduction/increase in road capacity/ Introduction of high occupancy lanes	<p>This option is not practicable, for lack of space or alternative routes. The only available space for high occupancy lanes is on the A27 (Brighton-Lewes-Eastbourne).</p> <p>Pilot projects are being carried out across England; if successful a feasibility study may be undertaken for the A27 in the long term.</p>
Low Emission Zone	<p>Due to the size of Lewes Town, enforcing an LEZ is not economically sustainable in the short term.</p> <p>Feasibility study on quality partnerships and LEZs carried out at national level. A voluntary LEZ could be established through freight and bus quality partnerships. Measures being implemented at national and regional level (such as freight route management) aiming to establish quality partnerships, can be supported locally through action plan measures, such as eco-driving schemes and encouraging use of low emission vehicles in central Lewes.</p> <p>This option may be reconsidered in future reviews of this action plan</p>
Park & Ride	<p>Lewes is not large enough to justify the structures linked to the implementation of a Park & Ride scheme. Since this measures was discharged the vast majority of land that may have been suitable for such a development will likely fall into the new South Downs National Park.</p> <p>The relocation of existing car parks in Lewes represents a “smaller scale / tailor-made” option (Section 4.3.2).</p>
Road Closure	Pedestrianisation is not a viable solution due to lack of alternative routes at the present.

Measure	Reasons and future likelihood
Relocation of existing businesses out of Fisher street	This may reduce congestion caused by deliveries however it is costly and detrimental to those businesses that would need to be relocated.
Removal of bus-stop in Fisher Street	Fisher Street is so narrow that when the bus stops to let people on/off other vehicles have to queue behind the bus, however considering the relatively low number of buses stopping in Fisher Street and the number of elderly or disabled local residents who make use of this stop, the social impact would be unsustainable and the action not cost-effective.
Distribution centre outside town	The introduction of a freight hub outside the Town Centre was considered in the past. A feasibility study discharged the scheme on the basis that maintenance costs would not be sustainable.
Ban/restricted HGVs access/deliveries	<p><i>A statutory ban or restriction on access to Fisher Street or the AQMA would be not economically sustainable for local businesses.</i></p> <p>The preferred options within the current action plan, which has taken into account feedback from local businesses representatives, is to encourage access outside rush hour through informal discussions and support to local freight operators (Section 4.4.3).</p> <p>Restrictions at specific times e.g. during rush hour – could be considered as viable option in future reviews of the action plan if no improvement in local air quality is achieved.</p>
The Ringmer to Lewes Greenway	<p>Measures to allow buses to pass queuing vehicles at Earwig Corner was identified in "Signposts to 2010" (published in March 2000), and gave rise to the Ringmer to Lewes Greenway scheme which included a bus lane. The feasibility study has been completed and will be supplemented with some further data to find and demonstrate the possible improvements in bus journey time.</p> <p>The Ringmer to Lewes Greenway may be implemented in the long-term, however it is thought that the disadvantages (such as cost) probably outweigh the benefits (reduced bus journey times through Earwig Corner). If this is confirmed by the supplementary data then the scheme will not be progressed.</p>

5 IMPACT ASSESSMENT OF PROPOSED MEASURES

5.1 Introduction to the impact assessment table

Local authorities are required to rank measures they have identified within the action plan according to their cost (in terms of both financial and other environmental impacts) and the improvements to air quality that each measure might bring. A detailed cost-benefit analysis is not required as it would be both impractical and technically difficult to accurately quantify the air quality impacts associated with every proposed measure in the Action Plan.

The majority of the measures listed in the table below are classified as highly feasible. Options which were considered non practical were excluded during the screening stage in the previous chapter, on the ground of negative wider impacts, unsustainable costs or very long timescale.

Those measures expected to bring about the greatest improvements to air quality (i.e. Fisher Street priority change) are described in greater detail and information on timescale for implementation, the funding mechanism, and the improvement to air quality that the measure will bring are provided.

Measures which build on actions taken through the LTP and include other actions in support of these introduced through the AQAP are highlighted as “LTP+”.

The criteria included in the impact assessment have been chosen following discussions within the working group members. The structure of the impact assessment table is similar to the example from the LAQM PG (05) and the one used for reporting on the Hastings Action Plan within the ESCC LTP, in view of the likely integration of the current Action Plan into the LTP.

Where the proposed actions are part of ongoing or committed measures related to other policies, costs are reported as ‘LTP’ or low, or the amount allocated is specified in square brackets. When extra human resource allocation is needed this is reported as “officer time” and considered as low cost.

The implementation of a few measures included in the table will be affected by the new development in Phoenix Quarter and the outcome of the Lewes Transport Assessment.

Where possible air quality impacts expected from the implementation of the scheme have been estimated through modelling with DMRB or dispersion modelling (Breeze) and the expected reductions reported. The modelled results may be reviewed upon completion of the Lewes transport model or collation of relevant data, or where a more detailed dispersion modelling will be carried out.

Other measures are generic and target a large area (town, district or county) and it is therefore difficult to identify specific reductions in NO₂.

All the measures in the list are expected to contribute positively to the reduction of Green House Gases (GHG). When the contribution towards Climate Change is more significant than the contribution on improving local air quality – the “Climate Change” improvement is mentioned under the Wider Impacts category. For those measures where a reduction in NO_x emissions could cause an increase in CO₂ emissions or vice versa – this is also specified. CO₂ emissions have been qualitatively estimated for the majority of the actions, through professional judgement. An indicatively quantitative estimation for emission reduction through the main actions has been carried out using DMRB modelling. However an eco-footprint calculator is currently being tested from the sustainability officers and may be used to obtain more accurate emission reductions estimates for CO₂, NO_x and PM10. The overall “Wider Impacts” from all the measures listed is expected to be positive.

Ranking criteria are summarised in the table below. A score from 1 to 3 has been assigned to Air Quality, Timescale and Costs. These are assigned using quantitative information if actual costs and air quality benefits have been determined, or by using best professional judgment. The actions have been prioritised on the basis of what is currently known. The prioritisation will be reviewed once the Lewes Transport Model is available and a decision is made with regards to the Phoenix Quarter development, through the next progress report.

Ranking has been assigned according to the ranges in the table below. The ranking based on 3 descriptors of 'High', 'Medium' and 'Low'. These are assigned summing the scores for Air Quality, Timescale and Costs. The actions classified “A” are those which are the most important and their implementation will be necessary to achieve a significant improvement in air quality within the AQMA.

Air Quality Impact (AQ)	Timescale (T)	Costs (C)	Score
High = > than 1 µg/m ³	short = less than 2 years	£ = 0 to £100k	3
Moderate = 0.5–0.9 µg/m ³	medium = 2 to 5 years	££ = £100k to £500k	2
Low = < 0.5 µg/m ³	long = over 5 years	£££ = over 500k	1

Table 5-1 Criteria used for quantitative impact assessment analysis

The impact on air quality from the majority of the actions selected was difficult to calculate. Quantification work will be carried out as more data and information become available (e.g. through the Lewes Transport Model).

It is expected that the majority of those actions classified as having low or negligible impact on air quality could potentially have a significant cumulative impact if implemented effectively, and in support of other initiatives such as the traffic management, parking management and travel planning schemes. At this stage no attempt has been made to accurately quantify reduction in air pollution from the overall implementation of the actions described in the table. DMRB modelling was carried out to estimate the impact of main measures such as the Fisher Street change of priority and the school travel plans.

Table 5-2 Ranking

Total Score (AQ+T+C)	Rank
8 - 9	A = High
5 - 7	B = Medium
<5	C = Low

5.2 Outcome of the impact assessment analysis

The AQAP identifies 28 measures. Some of these measures represent a group of actions. Some measures/actions are new; others are enhancements of LTP ones, or the acceleration of LTP measures within the AQMA. The measures are listed under nine main headings: Traffic Management and road schemes, Parking, Emissions management, Sustainable Transport, Development Planning, Non-transport measures, New Technologies, Engagement, information and education.

All measures were ranked according to the system described above. The measures which obtained the highest score were:

M1 - Fisher Street Change of Priority, and

M17 - Lewes Travel Plans schemes

Lewes Parking Management (M14) and Better Control of Impact of New Developments (M21) obtained the second highest score.

Measures 27 and 28, respectively “awareness raising and engagement of non-statutory stakeholders”, and “strengthening internal partnership work” were also classified as High Priority measures. Although a score was not assigned to these measures, they are essential to the implementation of the remaining measures in Table 5.1.

Assuming that NO₂ level in Fisher Street would reduce to 5% in excess of the annual mean objective by 2010 (according to the modelling predictions discussed in Chapter 2), the above measures, if effectively implemented in the short-term, would allow the Council to meet the air quality objectives within the AQMA. However, air monitoring results show no significant reduction in NO₂ levels within the AQMA over the last few years (Chapter 2), and even if the above schemes are completed or implemented by 2010, it is unlikely the expected improvement in air quality will become significant before 2010.

The Council therefore aims to implement all of the measures listed in Table 5.1 (all the remaining 22 measures, but one were classified as having medium priority), in order to maximise on their cumulative benefit. The implementation of some of the measures will be dependant on the availability of funding and data, as discussed in the following chapters. More quantitative estimates of the benefits of air quality and climate change will be carried out and included in future progress reports.

Table 5-3 TABLE 1 OPTIONS IMPACT ASSESSMENT

ID	MEASURE (Actions)	Lead (Partners)	Air Quality Impact within AQMA	Wider Impacts	Cost	Timescale	Rank (score)	Status of Measure
Traffic Management And Road Schemes								
M1	White Hill / Fisher Street / West street scheme (LTP) Change of priority at Commercial Square to improve flow in Fisher Street; review traffic signals at Station Street; greater priority to pedestrians. Two phases: (a) Experimental change in junction priority (b) Formalise priority working including other works in the area	ESCC	HIGH (3) 4-6.5 ug/m3 or 9-12% red in NO ₂ (Fisher Street) Some air quality benefits will be achieved from the experimental scheme	+ Congestion (Fisher St & Station St), safety, walking	(a) LTP [£15K] (3) (b) LTP [£250K]	(a) Short (3) To be implemented in late summer 2009 (b) Med 2010 and 2012	A(9)	To be implemented To be implemented
M2	Beddingham Crossing (LTP) Rebuilding the Southerham and Beddingham roundabouts on the A27 outside Lewes and a new railway bridge to avoid queuing at Beddingham rail crossing.	HA	Low (1) Potential reduction in through traffic	Reduced congestion & emissions on A27 (potential increase in traffic through town likely during construction phase)	0	Major engineering works completed Oct 2008	-	Completed
M3	Lewes Town Centre 20mph zone Provision of 20mph area in addition to the existing 20mph Zone. Will include majority of the AQMA.	ESCC	Low (1) Potential deterrent for through traffic; reduction in start-stop emissions	Safety, walking, cycling, congestion,	LTP [£25K] (3)	Short (3) Preliminary and detailed design being undertaken in 2008/09. Construction planned for 2009/10	B(7)	To be implemented
M4	Phoenix roundabout and Eastgate bus priority (LTP) Introduce a roundabout at the Phoenix Causeway and two-way traffic for Eastgate Street; create a bus priority lane and introduce pedestrian and cycle friendly features.	ESCC	Reduction in traffic & recirculation	Any reduction could be offset by increased traffic generated from Phoenix development	S106 Funding	Long	TBA	Developer re-considering options
M5	The Living Cliffe (LTP) Creation of pedestrian zone in Cliffe High Street with restricted vehicular access. Introduction of 20mph zone to vehicles allowed to enter the zone (e.g. for deliveries)	ESCC	Low (1) Existing through-traffic in Cliffe High Street will tend to go across Phoenix Causeway via School Hill and Market Street until Phoenix Roundabout scheme	Improved safety, walking & cycling facilities, reduced impact of car outside the AQMA.	LTP [£250K] (2)	Short(3) Construction underway, completion summer/autumn 2009	B(6)	Due for completion late summer 2009

ID	MEASURE (Actions)	Lead (Partners)	Air Quality Impact within AQMA	Wider Impacts	Cost	Timescale	Rank (score)	Status of Measure
			is implemented					
M6	Offham Road Pedestrian Priority Scheme (LTP) Improvement to pedestrian facilities and vehicle speed management.	ESCC	Low (1) Potential reduction in car trips to local school (due to increased safety)	Improved safety, walking & cycling facilities, reduced impact of car outside the AQMA.	LTP £300K (2)	Medium (2) Part construction planned for 2009/2010. Remaining sections constructed 2010/2012	B(5)	To be implemented
M7	Ringmer –Lewes cycleway (LTP) Introduction of off-road cycleway on the Lewes-Ringmer road link – heavily used by commuters from Ringmer to the Town Centre. Scheme split into two (a) Phase 1 (b) Phase 2	ESCC	Low (1) Potential reduction in incoming traffic, however benefits of the cycleway will not be achieved until the complete route is constructed.	Cycling	a) S106 £150K b) LTP (£350K) (2)	Designs being completed for complete route 2009. First phase construction likely 2010/11, remaining sections 2011/2012 Medium (2)	B(5)	To be implemented though funding for Phase 2 has yet to be agreed.
M8	Lewes Railway Station Forecourt Scheme (LTP) Improved facilities for pedestrian, buses and taxis	ESCC	Low (1)	sustainable traffic modes, accessibility	LTP £15K (3)	Short (3) Design underway in 2007/08. Part of scheme construction planned 2009/10	TBA	Investigation underway to determine status of railway bridge ownership
<i>Emissions Management</i>								
	Encourage use of low emission vehicles and fuels	Targeted through other measures (e.g. travel plans, LDC Waste & Recycling schemers, links to Climate Change)						
	Reduce emissions from buses	Targeted through partnership work with local bus operators and measures described above						
M9	Target local freight distribution a) Work with local business & freight operators to collate relevant data (i.e. delivery times, parking issues) b) Encourage deliveries outside congested periods c) Provide eco-driving training d) Investigate production of local "delivery maps" e) Increase or reallocate loading bays	LDC (local business & freight)	Low (1)	engagement of non-statutory stakeholders, use of non-mandatory agreements	£ (3)	Short (3)	B (7)	Investigation underway
M10	Better coordination of building and road works in the Lewes town area (LTP+) Enhance existing LTP scheme to include building works and haulage route management	ESCC	Low (1)	Congestion internal communication within councils	(3)	Short (3)	B (7)	Investigation underway

ID	MEASURE (Actions)	Lead (Partners)	Air Quality Impact within AQMA	Wider Impacts	Cost	Timescale	Rank (score)	Status of Measure
M11	Target long-distance freight management & heavy traffic through town (LTP+) a) Intensification of existing LTP programmes b) Review signage on weight restrictions at access road links	ESCC (freight)	Low (1)		(3)	Short (3)	B (7)	Investigation underway
M12	Reduce emissions from idling vehicles a) Install "cut engine cut pollution" signs (i.e. schools, taxi & bus terminals) b) Raise awareness through eco-driving campaign c) Investigate enforcing legislation (issue fines)	LDC (HA, local business & community)	Low (1)	awareness	£ (3)	Short (3)	B (7)	Investigation underway
M13	Vehicle Emission Testing in central Lewes to measure vehicles emissions at pollution hotspots, supermarkets, car parks a) Carry out VOSA roadside emission testing (RET) b) Use of remote sensing technology	LDC	Low(1)	awareness	£ (3)	Short (3)	B (7)	Investigation underway
<i>Parking</i>								
M14	Lewes Parking Management (LTP+) Intensification of existing/planned LTP programmes a) extension of parking controlled area b) re-allocation of parking/loading spaces c) higher charges for long stay parking d) higher charges for residents second parking permits e) discounted permits for low-emission vehicles f) introduce car spaces for low-emission vehicles, car-clubs and car share g) maintain/increase provision of two-wheelers parking	ESCC	Moderate (2)	reduced traffic and congestion at peak time, reduced re-circulation, reduced emissions; + modal shift and sustainable travel behaviour	£ (3)	Short (3)	A (8)	Currently being implemented
M15	Review of Lewes car parking system (LTP+) a) Reallocation of existing car parks to reduce create a network of "park & walk" sites outside the AQMA b) Dedicated Short (3) and long stay car parks outside AQMA c) Installation of signage (i.e. with directions to car-parks) at access points to town	LDC	High (3)	Reduction of veh/km & congestion	££ (LTP, S106) (2)	Medium (2)	A (7)	Consultants review due summer 2009. Cultural Services completed signage review early 2009 (action a & b may be affected by Phoenix development)

Sustainable Transport								
ID	MEASURE (Actions)	Lead (Partners)	Air Quality Impact within AQMA	Wider Impacts	Cost	Timescale	Rank (score)	Status of Measure
M16	Partnership work with bus & train operators (LTP+) a) Reduce emissions: calculate emissions from existing bus fleet, route/fleet management (i.e. only cleaner vehicles through AQMA), eco-driving training b) Increase bus and train patronage: through supporting marketing campaign, extend use of subsidised/discounted fares, improve bus connection to key area, bus stop facilities, bus information c) Provision of additional undercover cycle parking at Lewes station	ESCC & LDC	Moderate (2)	+ accessibility, awareness	££ (2)	Short (3)	B (7)	Investigation underway
M17	Lewes Town Travel Plans (LTP+) a) Review existing County & District Travel Plans b) Accelerate implementation of workplace travel plans c) Accelerating implementation/review of local school travel plans (including colleges) d) Link to other actions (i.e. school monitoring projects, cycling and car-sharing promotion) e) Target shorter journeys – investigate personal travel planning marketing	LDC & ESCC	HIGH (3)	+ lead by example, change in travel behaviour, education, awareness,	£ (LTP) (3)	Short (3)	A (9)	To be implemented LDC travel plan currently being reprioritised
M18	Car-sharing (LTP+) Support LTP car-sharing & “travel-choice” campaign in Lewes town (i.e. through travel plans and ad-hoc events).	ESCC	Low (1)	+ travel behaviour	£ (LTP) (3)	Short (3)	B (7)	To be implemented
M19	Car clubs a) Support existing club in Lewes town (i.e. marketing) b) Accelerate introduction of new clubs c) Provide parking locations for car parks (Require car-clubs for large new developments – M21)	LDC (local community, developers)	Low (1)	+ travel behaviour + climate change	£ (3)	Short (3)	B(7)	Committee approval to run as 2 year DEFRA funded pilot scheme. Launch autumn/winter 2009
M20	Walking and cycling (LTP+) a) Accelerate implementation of LTP actions within Lewes town (i.e. improvement to existing cycle routes, identify new ones, improve signage and facilities) b) Promoting walking and cycling as a healthy and more preferable option to car for local journeys c) Promotion through travel plans, one-off events, “TravelChoice” campaign	ESCC & LDC (local community)	Low (1)	+ accessibility	£ (LTP) (3)	Short (3)	B (7)	a) To be implemented b)Cycle Lewes Map c) Fume free Friday/Isn't it bonkers event
Development Planning								
M21	Better control of impact of new developments a) Facilitate funding from S106 agreement	LDC	Depending on scale of applications	+ climate change	£(3)	Short (3)	A (8)	Key consultees in LDF process

ID	MEASURE (Actions)	Lead (Partners)	Air Quality Impact within AQMA	Wider Impacts	Cost	Timescale	Rank (score)	Status of Measure
	b) Conditions to require reduced parking allocation, completion of Sustainability Checklist; travel plans for large developments and inclusion of pedestrian & sustainable transport facilities such as car-club dedicated car spaces and bus lanes		From Low to High (2)					and large planning applications
M22	Greater planning controls within or near the AQMA for new developments or applications a) Stricter conditions limiting permitted uses and changes of use for new applications b) Request detailed air quality assessment for developments affecting AQMA. c) Encourage the uptake of Low emission strategies by developers d) Investigate production of supplementary guidance notes on air quality for new developments	LDC	Low (1)	+ awareness + climate change	£(3)	Short (3)	B (7)	Key consultees in LDF process. LDC currently formulating core strategy options
<i>Non-transport Measures</i>								
M23	Intensify promotion of national schemes on domestic heating and energy efficiency Increase promotion of scheme aimed to improve insulation, replace/service boilers, encourage energy efficiency in the Town Centre	LDC	Low (1)	+ social, reduced background pollution + climate change	£(3)	Short (3)	B (7)	Housing team currently implementing
<i>New Technologies</i>								
M25	Continue investing in new technologies and pilot projects through the LDC Waste & Recycling a) Electric vehicles for recycling fleet b) NOx reducing additive for HGV diesels c) Eco-driving training d) Route management (GPRS) e) Monitoring of fuel use & efficiency	LDC	Low (1)	+ raise awareness, innovative	£ (Grants & LDC funds) (3)	Short (3)	B (7)	Currently being implemented
M26	Investigate use of innovative NO₂ absorbing/reducing technologies a) NO ₂ absorbing paint/slabs b) Bio-fuels NOx reducing additives	LDC	uncertain	Innovative	££ (grant possible) (2)	Medium (2)	C(4)	Investigation underway
<i>Engagement, Information and Education</i>								
M27	Raising awareness & engagement of non-statutory stakeholders a) Organise one-off events, talks, workshops and targeted campaigns on public transport marketing and eco-driving, involving the local community b) web-sites improvements to provide better information	LDC & ESCC (local community & business)	Low(1) Informative: potentially significant cumulative impact	+ education				Currently being implemented a) Fume Free Friday, Isn't it Bonkers and attendance at

ID	MEASURE (Actions)	Lead (Partners)	Air Quality Impact within AQMA	Wider Impacts	Cost	Timescale	Rank (score)	Status of Measure
	& allow feedback/participation from members of the public c) Pilot LDC internal pop-up messaging providing air quality/sustainable transport information							numerous other community events b) To be implemented c) Investigation underway
M28	Strengthen partnership work with ESCC (LTP), LDC Sustainability(Climate Change), Planning & Communities (LDF & LSP), Sussex Air (emissions inventory, air-alert) a) Intensify links to existing strategies b) Accelerate implementation of those schemes which may improve local air quality. c) Joint participation to events, campaigns, grants applications, data collation surveys d) Plan monitoring programme (i.e. traffic) to assess action plan effectiveness	LDC (ESCC, Sussex Air, PCT)	Low(1) Informative: potentially significant cumulative impact	+ climate change, transport + social inclusion, communication, effective partnership work				Currently being implemented

6 FUNDING

The ability to implement the AQAP primarily depends on securing adequate and consistent levels of funding and staff required to deliver the programme of measures.

6.1 Funding through the LTP

Funding through the LTP is mainly destined for road schemes. Resource allocation evolves during the development of the LTP, with funding secured for a package of complementary measures. These include campaigns which have to be competed within the funding for road schemes, and other initiatives which are seen as cost-effective in the short-term.

The AQAP it is expected to influence the LTP short-term spending programme and in prioritising those schemes and programmes which are expected to improve air quality in Lewes Town, however a re-allocation of LTP resources can only be partial, as it could undermine other areas of work within the LTP.

More detailed information on spending allocated for LTP schemes relevant to this action plan are available from the ESCC website.

6.2 Funding through the Air Quality Grant Programme

LDC submitted a request for funding in March 2008. Action Plan measures for which funding have been requested mainly to contribute to the implementation of smart measures such as:

- Marketing campaign aimed to increase bus patronage, and a number of information campaigns, including eco-driving training events, exhibitions, travel surveys and travel planning;
- Community car clubs.

Funds have also been requested to support measures aimed to establish innovative partnership work, in particular with local non-statutory stakeholders, and to use innovative technologies such as NOx absorbing paint.

Further funding has been requested to purchase modelling software which will allow more accurate air quality impact assessments to be carried out in-house.

Lastly, funding was requested to install a new air quality monitoring station in Newhaven to better establish the local air quality.

6.3 Other funding streams

Investigation of other funding stream is ongoing. Free advice on fleet management and travel planning from the EST has recently been secured. Funding and grants for actions aimed to reduce background emissions such as energy savings schemes are also available. Grants for replacement of old boilers are available, but it is uncertain whether these will cover the cost of extra staff needed to build a Lewes Town Centre database containing information on domestic heating.

Additional funding may be available through European programmes, for example, from September 2007 it will be possible to bid for "Life" programmes, whilst a bid for "InterregIV" funding to support some of the smarter choices initiatives has been made through the Sussex Air partnership and the projects are due to start in October 2009.

The provision of s.106 monies will also be investigated for future developments as will future contributions from the Community Infrastructure Levy.

Partnership work is also likely to attract funding through private partners, fundraising through events organised in collaboration with local community groups, joint bids or cost-saving implementation of actions in collaboration with neighbouring local authorities or Sussex Air.

6.4 Staff costs and voluntary work

Staff time necessary to co-ordinate and support the implementation of AQAP initiatives needs also to be taken into consideration. LDC for example has no designated Transport Officer, while ESCC are also experiencing a shortage of staff within the Transport Department.

On the other hand, local community groups in Lewes are very pro-active towards environmental issues, including climate change and air quality. Through the AQAP seminar organised in February 2007, the contacts with the vibrant local community have been reinforced and some of them have offered to volunteer for fundraising events or data collection aimed to support specific Action Plan measures.

7 CONSULTATION AND STAKEHOLDERS ENGAGEMENT

Guidance on NSCA and DEFRA was taken into account to ensure effective consultation during the action planning process. A recent report from UWE, “Steps to Better Practice: guidance for local authorities on local air quality management consultation” was also taken into consideration.

7.1 Introduction

The Lewes AQAP is intended to be an evolving plan that will further develop in time and, as a result, will be subject to ongoing consultation. Effective action plans require consensus and co-operation of as many stakeholders as possible, such as local communities and business organisations, as well as those bodies responsible for implementing solutions. Any action requires backing and support of stakeholders who need to take ‘ownership’ of the action planning process and feel part of the overall decision making process.

The measures included in this AQAP have been drawn up following extensive participatory consultation with residents, businesses, local community groups and key stakeholders.

The Environmental Health Department has historically worked closely with the Planning and Communities Departments and County, local residents and stakeholder groups during the production of local planning policies, in particular the LTP2 and the LDF. The Action Plan has built also on this historical consultation.

Internal Consultation was carried out through:

- Regular meetings between LDC pollution officers and ESCC transport strategy team
- Ad-hoc meetings between the pollution officers and representatives of relevant departments from the District and the County Councils (for example with the County education, passenger or parking management officers)
- The establishment of a technical Working Group which met twice in December 2006 and April 2007
- A presentation to the District and County Councillors in November 2006
- An internal training session on air quality action planning within the Environmental Services department

- Meetings to discuss the Lewes Staff travel plan.

External Consultation and engagement was carried out through:

- The production of two newsletters posted to residents of the AQMA
- Exhibition of display boards on the AQAP, distribution of leaflets and questionnaires during the following events:
 - 27-29 July 2006: “Lewes Street Ahead 2006”, in collaboration with the County Council, at The Church Hall, Eastgate Baptist Church, Eastgate Street, Lewes. Prior to this event, information was posted to residents of the AQMA and posters displayed at shops within the Town Centre
 - 5 September 2006: “Lewes Climate Change Question Session”, at Lewes Town Hall
 - 9 September 2006: “Lewes Park Life”, at Malling Park (Lewes)
- A workshop with external stakeholders held on 6th February 2007.
- Further events where AQMA and AQAP information has been displayed included “History of Station Street” at the Subud centre on Station street which lies within the AQMA and the Fume Free Friday Community event on the 19 September 2008.

7.2 The Lewes Action Plan Working Group

A technical Working Group was initiated in the autumn of 2006 in order to draw up the draft Action Plan. Officers from LDC Planning, Sustainability and Communities Departments as well as Transport and Environment officers from ESCC participated in two meetings held in December 2006 and April 2007. Working Group members, including those who participated in only one meeting, or provided feedback through the mailing group are listed in Table 7-1.

During the first meeting in December 2006 an initial assessment of options was carried out and it was decided to screen out those considered to be unfeasible (these are listed in Section 4.10) in order to focus the attention on those options more likely to be successfully implemented in a town like Lewes. The second meeting in April 2007 focused on the impact assessment and prioritisation of the short-listed options. During both meetings the feedback obtained through the ongoing public consultation was taken into account.

²⁶ www.uwe.ac.uk/aqm/esrc

²⁷ http://www.sevenoaks.gov.uk/documents/ldf_issues_and_options_report.pdf

East Sussex County Council	LDC	External
Transport Strategy officers	Pollution officer	Sussex Air
Parking management officer	Planning officers	Highway Agency
School travel plans adviser	Sustainability officers	
Passenger officer	Staff travel plan officer	
Environment officer		

Table 7-1 Technical Working Group members

7.3 Outcome of the Air Quality Questionnaire Survey

Over a hundred air quality questionnaires were filled in by people attending the three events held between July and September 2006 (Section 7.1).

From the results of the questionnaire on “Green Travel” (Figure 7 1) it emerged that:

- A considerable number of those who responded were unaware of sustainable travel schemes, but eager to find out more
- The scheme that most people were aware of was the car-share scheme
- Some respondents were aware of travel plans, but not aware of any local travel plan initiatives
- Responses suggest that there was confusion on the

topic. For instance someone commented: “lift-sharing is problematic as I have no car and do not wish to get one”, being obviously unaware that the lift-share scheme is also for people who seek a lift.

From the Action Plan options questionnaire it emerged that:

- 98% of people interviewed support school travel plans. 65% were unaware of local school travel plans
- There was great support – 90% - for 20mph zone and work travel plans
- Traffic calming measures were the least supported compared to other options.
- Great consideration was given to the cycling travel option, reducing emissions from buses and “deliveries traffic”.

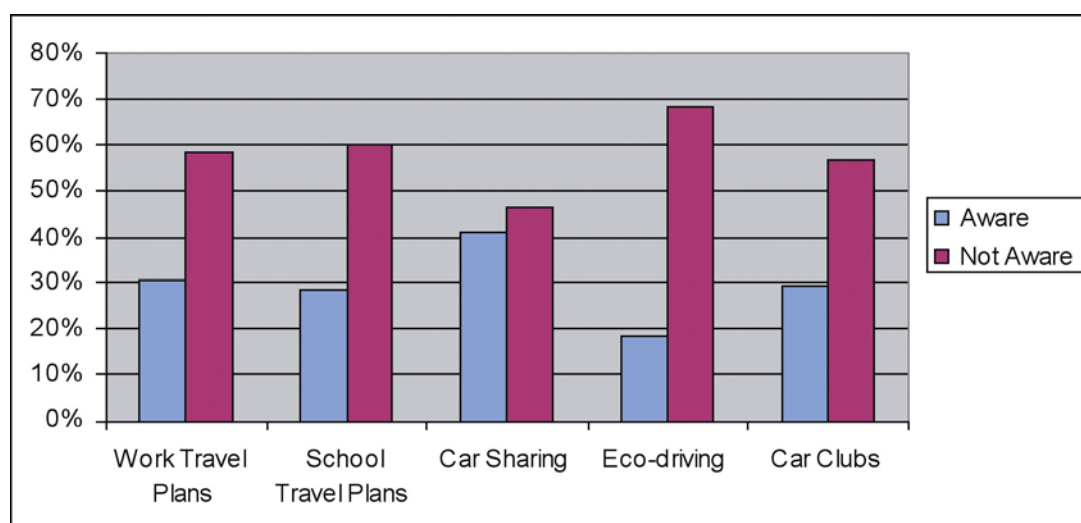


Figure 7-1 Results from “Green Travel” questionnaire (Jul-Sep 2006)

7.4 The Lewes Air Quality Action Plan Workshop

The public provided feedback during a number of exhibitions held by LDC and has been kept informed through display sessions, press releases and the production of information leaflets.

The aim of engaging in public debate was not only to find workable solutions to improve local air quality, but also to find solutions which hold the participants together.

The Lewes Air Quality Action Plan workshop on February 6 2007 was an opportunity to increase awareness on air quality issues in the Lewes Town, gain a better understanding of concerns and priorities of different groups in the community, and build new partnerships.

The workshop was well attended (the list of representative participating is attached in Annex D) and provided the District Council with valuable material to help progressing with the implementation of an effective action plan.

The workshop was co-ordinated by an external facilitator. The twenty seven participants split into discussion groups discussed about potential measures to improve air quality within the Town Centre. The following were amongst the most supported actions:

- Information campaign (targeted to school runs and car clubs)
- Travel Plans
- School runs
- Increase and improve public transport
- Better signage for HGVs, tourists, commuters, pedestrians and cyclists.

More details on the workshop and its outcome are reported in Annex D.

7.5 Additional Consultation

Partnerships with non-statutory stakeholders built during the consultation process will improve the capacity to make better decisions in the future. Maintaining consistent and constructive engagement will be essential to the effective implementation of the action plan in the next few years.

The feedback following the publication of the draft AQAP in September 2007 has been considered and changes made to some of the detail within the final AQAP. As part of the consultation process for the draft AQAP over the eight weeks following the submission of the report, copies and a summary were issued to all local councillors and MP's, statutory and non-statutory stakeholders (including participants to workshops and presentations)

This final AQAP will be subject to LDC Council approval through its Cabinet.

During the implementation process key stakeholders and the public will continue to be involved through additional consultation exercises. The outcome of the Lewes Transport Model and progress on decisions of new developments, in particular the Phoenix Quarter will have a significant impact on the AQAP therefore future consultation will be paramount.

8 IMPLEMENTATION & MONITORING

8.1 Implementation, timescales and responsibilities

Public consultation has shown high levels of support for measures to improve air quality in the Town Centre, the whole District and the desire to see rapid and effective action taken. Therefore it has been considered appropriate to previously submit the Action Plan in its draft form to progress the actions. At the same time more data will be collated and more detailed quantification of air quality impacts of the measures proposed in Table 5-1 will be carried out as data becomes available.

The measures outlined in the AQAP aim to address the air quality objectives for NO₂ within the AQMA. It will ensure adherence to the objectives for other pollutants, and contribute to local strategies such as the Climate Change Strategy, LTP and LDF. The AQAP will aim to meet the currently exceeded target, as soon as possible. The availability of funding and resources however will be crucial. As discussed, with relevant data collection ongoing, the Lewes Transport Model is not ready and a decision on Phoenix Development not taken, it is not possible at this stage to estimate whether the target will be met by 2010. An interim prediction has been carried out using the results from the Stage 4 dispersion modelling as shown in Section 2.3 and Figure 2 8.

The AQAP provides a practical package of measures to improve air quality. The Action Plan is made up of a mix of a few regulatory measures, such as the parking management schemes, and many simple voluntary non-regulatory measures which can be implemented in the short-term. If these measures are widely taken up they can have the potential to reduce emissions significantly.

The effectiveness of these measures will be reviewed regularly – and the implementation of more regulatory measures will be considered if necessary. For example, if congestion due to HGVs traffic within the Town Centre does not improve with currently proposed measures, banning the access during peak hours will be re-considered within next years progress report.

Road traffic is the main source of pollution in the AQMA, therefore District & County Councils have a shared responsibility to implement those measures considered the most cost-effective and practicable, as stated in the LAQM.PGA (05) . Many of the partnerships necessary to deliver the AQAP measures are already in place, others need to be further developed or established. For example, following the workshop which took place in February 2007, an Air Quality Working Group has been formed and met 8 times in 2008, it is expected following the adoption of the AQAP this group will meet quarterly to monitor progress and develop new projects.

In order to deliver the AQAP LDC will:

- Continue to work with neighbouring local authorities and the County
- Continue to consult on the implementation and review of this plan
- Integrate the action plan with existing strategies (LTP, Climate Change, LDF)
- Work with employers, employees and schools to implement travel plans
- Continue to consult, communicate and engage with residents and other non-statutory and statutory consultees
- Create new innovative partnerships and identify new opportunities.

8.2 Monitoring

The main objective of the AQAP is to reduce air pollution within the AQMA. Paragraph 1.36 of the LAQM.PGA (05) encourages local authorities to set targets for intermediate outcome indicators, so that annual trajectories can be used to measure progress in working towards meeting the air quality objectives, in support of the results from the air quality monitoring network.

Performance indicators

The LTP includes a number of mandatory or local (mostly county-wide) indicators which can provide

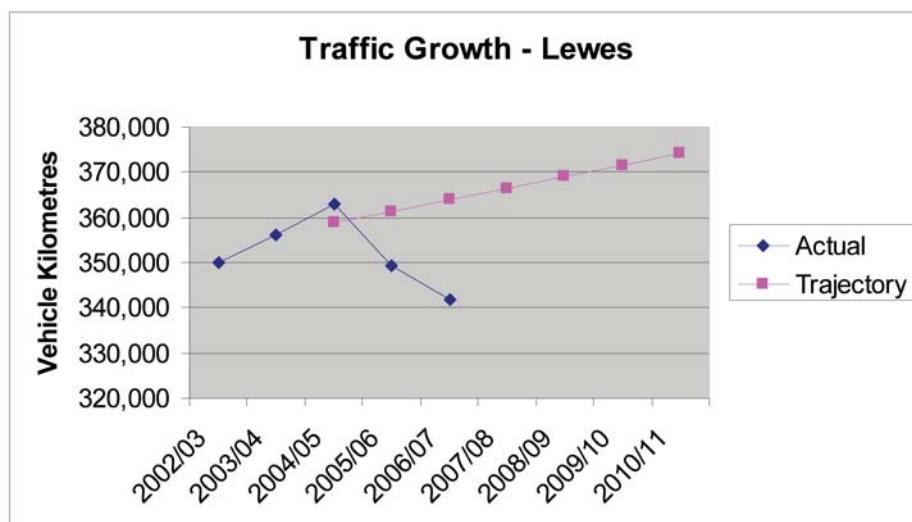


Figure 8-1 Lewes traffic growth trajectory

useful information on progress with AQAP measures. Following discussion between LDC and ESCC it was agreed to consider the following as the main indicator for reporting on performance of the overall action plan implementation:

Vehicle traffic kilometres within the Lewes Town cordon (LTP Outcome Target 23 – Traffic Growth in Lewes)

Figure 8-1 reports the trajectory established for Target 23 within the LTP. The latest traffic monitoring results show that traffic level in Lewes Town has been decreasing since 2005. The successful implementation of LTP programmes such as parking management is likely to be responsible for this improvement. Recent air quality monitoring results do not show however any reduction in NO₂ levels, as discussed in Chapter 2.

The monitoring framework for the AQAP is still under development and the use of additional indicators to report on the effectiveness of specific measures or groups of measures is under investigation. For example data on “change in peak period traffic flows to Lewes Town Centre” (including strategic road links such as Fisher Street) will be included in the Progress Report, although intermediate targets have yet to be established. Further data is likely to be included in yearly reports such as changes in vehicle splits, mode share of journeys to work/school, bus patronage, walking and cycling trips counts, number of organisation implementing travel plans.

AQAP Progress Reports will include further data which will help to understand or confirm whether significant reduction in air pollution, traffic levels and emissions are being achieved within the AQMA:

The success of promotional events, voluntary emissions testing and promotion of travel plans are dependent on the uptake and rely on contributions by local communities. Uptake will be monitored and measures reviewed regularly. Some of the measures included in the Action Plan, are however unlikely to have demonstrable impact on air quality within its timescale. For example, planning measures will impact over a much longer timescale than 2010, even though they can be implemented in the short-term.

Air quality monitoring

LDC air quality monitoring network was further increased at the beginning of 2007 with 3 new passive monitoring sites at strategic locations within or around the AQMA. For example an additional site was installed in Fisher Street, at a relevant receptor close to the junction with West Street, where the change of priority scheme is being implemented (Section 4.2.1).

New “level of air quality indicator”

The Local Government White Paper (published in October 2006) set out a new performance framework for local government. The backbone of the new framework will be around 200 indicators covering all Government’s priorities for local delivery. DEFRA is proposing an indicator of the “Level of Air Quality” the “percentage reduction in NO_x and primary PM₁₀ emissions through local authority’s own estate and operations”. Local authorities will be required to report their performance against these indicators from April 2008 every three years. The above indicator will be included in the AQAP Progress Reports.

GLOSSARY

AQAP	Air Quality Action Plan	LDF	Local Development Framework
AQMA	Air Quality Management Area	LTM	Lewes Transport Model
AQEG	Air Quality Expert Group	LTP	Local travel plan
CO ₂	Carbon dioxide	NAQS	National Air Quality Strategy
Defra	Department for Environment, food and Rural Affairs	NO _x	Oxides of nitrogen
DETR	Department of the Environment, Transport and the Regions	NO ₂	Nitrogen dioxide
DMRB	Design Manual for Roads and Bridges	NAQS	National Air Quality Strategy
DPF	Diesel Particulate Filter	µg/m ³	Micrograms per cubic metre
EA	Environment Agency	PM ₁₀	Fine particle matter less than 10µm diameter
ESCC	East Sussex County Council	ppb	Parts per billion
EST	Energy Savings Trust	SCOOT	Split Cycle Offset Optimisation Technique
EU	European Union	SCR	Selective Catalytic Reduction
GLA	Greater London Authority	TP	Travel plan
GPRS	General Packet Radio Service	VMS	Variable Message Signs
HA	Highways Agency	WHO	World Health Organisation
IPC	Integrated pollution control	UNECE	United Nations Economic Commission for Europe
IPPC	Integrated pollution prevention and control	USA	Updating & Screening Assessment
LAQM	Local air quality management	UTMC	Urban Traffic Management and Control
LDC	Lewes District Council	UWE	University of the West of England
		VOSA	Vehicle and Operator Services Agency



May 2009