

Chichester District Council
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Air Quality Action Plan 2008

Produced by Environmental Health Services
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Executive Summary

Chichester District Council has produced this Action Plan as part of its duty under the Environment Act 1995 subsequent to the declaration of three Air Quality Management Areas (AQMAs). These AQMAs are declared in relation to the air quality in these locations failing to meet the UK air quality Objective for nitrogen dioxide¹. The declaration of an AQMA places a statutory obligation on us to produce an Air Quality Action Plan. This document was the subject of a public consultation exercise and reflects some of the comment received through that process.

This AQAP lays out actions that will positively impact on our local air quality. These actions are both within and beyond the powers of this Council. As such the actions proposed in this document will rely on us effectively engaging with our partners. In this context our key partners are internal departments in this Council and West Sussex County Council, the local community and the Highways Agency. A pan authority officer and member air quality working party is part of the actions proposed by the AQAP to formalise the process of the Councils' working together.

Poor air quality impacts on health both acutely and chronically. This document draws together the possible actions that will improve air quality and links air quality considerations to wider policy. In this way it aims to improve or minimise existing air quality impacts or those due to traffic growth and other development. Tackling pollution in this way is in line with CDC's aim² 'to secure good health for the whole Chichester District community'. The document augments the previously adopted Local Air Quality Strategy³.

'Good air quality is essential for good health and relates strongly to climate change and other social, economic and environmental issues. Whilst our District generally has good air quality there are areas impacted by pollution from traffic. This Air Quality Action Plan draws together a number of actions aimed at tackling the issues before us. The Plan also brings the opportunity for us to strengthen the working links with our partners to maximise the opportunity to move forward. We are mindful of the challenge that lies before us and intend that this document will benefit the debate, augment our existing efforts and be a springboard for future actions'.



Councillor Mrs H P Caird
Executive Board Portfolio Holder for Health

¹ Stated as an annual mean concentration 40µgm⁻³.

² CDC Corporate Improvement Strategy 2006 – 2011.

³ Chichester District Council, Local Air Quality Strategy 2003-2008 (non-statutory document).

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Glossary of terms

μgm^{-3}	Micro grammes per metre cubed
AQAP	Air Quality Action Plan
AQEG	Air Quality Expert Group
AQMA	Air Quality Management Area
AQS	Air quality strategy
BQP	Bus Quality Partnership
CDC	Chichester District Council
CO ₂	Carbon dioxide
CPE	Civil Parking Enforcement
DEFRA	Department of Environment Food and Rural Affairs
DETR	Department Environment Transport and the Regions
DMRB	Design Manual for Roads and Bridges
EA	Environment Agency
EST	Energy Savings Trust
EU	European Union
GLA	Greater London Authority
HA	Highways Agency
IPC	Integrated Pollution Control
IPPC	Integrated Pollution Prevention and Control
LAPE	Local Area Parking Enforcement
LAQM	Local Air Quality Management
LDF	Local Development Framework
LES	Low Emissions Strategy
LEZ	Low Emission Zone
LGA	Local Government Association
LTP	Local Transport Plan
NO ₂	Nitrogen dioxide
PPB	Parts per billion
SAQP	Sussex Air Quality Partnership
SCOOT	Split cycle offset optimisation technique
SCR	Selective catalytic reduction
TP	Transport plan
VMS	Variable message signs
WSSC	West Sussex County Council

1.0 INTRODUCTION

Between 1990 and 2001 national air quality policy lead initiatives have helped to avoid an estimated 4,200 deaths per annum and 3,500 hospital admissions⁴.

There are few things as fundamental to human life as having clean air to breathe. Adult lungs have the surface area of a tennis court and are in intimate contact with the air that surrounds us. Air pollution shortens life by an average of 8 months in the UK and kills at least 24,000 persons early per year. Tackling air pollution is about preventing ill health and improving our health and life expectancies.

It is increasingly apparent that modern life, with its many comforts, often comes at a significant cost to the environment. In our beautiful District many people are surprised to learn that we have areas of poor air quality. These 'Air Quality Management Areas' (AQMAs) relate to traffic emissions on parts of the road network that is, at times, operating beyond its designed capacity. Poor air quality is a symptom of the way our society has developed and operates. The significant challenge is to change some of our dependencies and long ingrained habits.

Poor air quality is not just an issue contained by our Air Quality Management Areas as air quality is known to have subtle impacts on health below the UK standards. There is a growing body of evidence about the long-term impacts of exposure to air pollution. For instance exposure to traffic related emissions over long periods of time plays a role in the development of cardiovascular illness. Children regularly playing sport during ozone episodes are more likely to develop respiratory illness in later life. Areas of poor air quality are sometimes in more deprived areas impacting on some of those demonstrably most at risk from its effects.

There are other related issues beyond those that are purely related to traffic emissions. Climate Change will alter air pollution in the coming years to pose us with new health related air pollution challenges. Tackling air pollution and Climate Change in a joined up way is important. Not all climate change initiatives will have a positive impact on air quality and so we must work closely with our climate change and planning colleagues. Some increased air quality impacts due to climate change are now unavoidable. In these circumstances we must work with the community to enable them to best manage their health in the face of such potential health impacts.

In any case air quality policy has synergies with many other environmental policy areas. For instance, persons living adjacent to busy, and hence noisy, roads are also more likely to suffer from cardiovascular disease and early death. The Royal Commission on Environmental Pollution refers to the interconnectedness of urban issues such as car ownership, obesity, traffic pollution, respiratory health, road noise etc as a 'wicked problem'. We cannot solve the problem by resolving one issue but must augment our efforts to maximise our gains.

It is clear that tackling traffic related air pollution has synergies with tackling climate change, noise pollution and many other issues to make our District a more pleasant and healthier environment in which to live.

⁴ The Air Quality Strategy for England, Scotland, Wales and Northern Ireland, DEFRA, July 2007.

2.0 OBJECTIVES

This AQAP looks in detail at the local air quality issues that have led to the declaration of three traffic related Air Quality Management Areas (AQMAs) in Chichester. The plan sets out measures which Chichester District Council and West Sussex County Council plan in order to:

- Improve local air quality, in pursuit of the UK air quality objective for nitrogen dioxide which is currently exceeded within the AQMAs.
- Contribute to improving the health and wellbeing of the local community by reducing air pollution in Chichester.
- Enable members of the community, where and when possible, to change their transportation mode to a more sustainable means.
- Reduce the economic impacts associated with health related air pollution impacts.
- Draw out the linkages between this document and the Local Area Agreement, Sustainable Community Strategy, Health Strategy and Corporate Improvement Plan.

It is intended that this AQAP will be incorporated into a future version of the WSCC's Local Transport Plan and that the reporting of air quality improvements will be included in the current LTP2 reports.

It is also intended that air quality considerations in the land-use planning process could be strengthened through a policy in the emerging Local Development Framework with the potential to produce a Supplementary Planning Document.

The measures included in this AQAP are those currently considered to be the most effective and appropriate for Chichester.

3.0 OVERVIEW OF CHICHESTER DISTRICT AND AIR POLLUTION ISSUES

Chichester District covers an area of 304 square miles incorporating several urban centres and a large area of Sussex Downs designated an Area of Outstanding Natural Beauty. The major urban centres are Chichester, Selsey, the Witterings, Midhurst and Petworth. There are 67 parishes in the District. Chichester is the largest population centre at approximately 27,000 people with the total population in the District being approximately 106,000.

Chichester is bounded to the south and east by the A27 (see Appendix 1). Around the mixed commercial and residential hub of the city there is an inner ring road comprising the A286. The inner ring road is part of an historically inherited street pattern not designed to carry today's volumes of traffic. This road incorporates many crossing places, traffic lights, level crossings and junctions, as such, at peak hour there is commonly traffic congestion. On parts of the inner ring road the road has tall buildings on either side. Traffic congestion combined with buildings 'trapping' pollution goes some way to explaining the pollution problems of the inner ring road AQMAs.

For traffic travelling east-west along the A27, to access towns such as Midhurst or Petworth, many vehicles are likely to travel north through Chichester on the A286 inner ring road. Vehicles travelling south to the A27 from the Downs are also likely to use the A286. Such traffic adds to the volume of traffic travelling through the inner ring road AQMAs.

The City of Chichester is bisected north south by the South Coast railway line. This railway is crossed in Chichester by means of three level crossings. These level crossings stay down for periods of time causing traffic to back up and begin to gridlock the City at peak hours.

Chichester District is also a popular tourist destination. For instance, the population of the Manhood Peninsula doubles from around 27,000 to 54,000 persons over the summer holiday period. The beaches on the Manhood peninsula are also a popular day trip for many families in the summer⁵. As a result, during the summer holiday period, the A27 is frequently congested⁶ which impacts on air quality at the Stockbridge AQMA. There are many other significant tourist attractions in the City including the Cathedral, the Festival Theatre and a proposed new museum. Likewise in the Downs there are many significant attractions including Goodwood Estate (motor racing and horse racing) whose events attract significant numbers of people travelling by car.

The 2001 census data showed car ownership in Chichester District at 84% compared to the national average of 73.2% in England and Wales. 23% of Chichester District's residents are older than 65 years old compared to the national average of 18.5% thus possibly making them more sensitive to the impact of air pollution.

4.0 POLICY CONTEXT

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.

4.1 The 2007 Air Quality Strategy (AQS)

DEFRA recently published the new Air Quality Strategy which introduced new objectives and policy measures, including:
Early uptake of new tighter European vehicle emission standards (Euro standards)
Incentives for cleaner vehicles.

The following measures are considered to require additional development work:

- Reducing emissions from small combustion plants
- Retrofitting of particulate filters from HGVs

⁵ West Wittering Beach attracts 1 million visitors per year, a high proportion of whom are likely to drive via the Stockbridge AQMA. Other tourist attractions and visitor numbers include Goodwood 1 million, Weald and Downland 150,000, Cathedral 300,000, West Dean 65,000 (CDC Cultural Services; all statistics anecdotal).

⁶ Traffic volumes increase by approx 25% during summer holiday season (WSCC).

- Low emission zones
- A national road-pricing scheme.

4.2 Regional policies and strategies

4.2.1 The South East (SE) Plan

The SE Plan is a full revision of Regional Planning Guidance 9 – the current Regional Spatial Strategy for the South East – and sets out a vision for the future of the region to 2026 and how to respond to challenges facing the region such as housing, economy, transport and environmental protection.

The plan acknowledges that action can be taken locally to address the problems i.e. by influencing movement, mode and management of transport through spatial planning. The transport policies of the plan propose measures that address poor air quality and contribute to the delivery of Air Quality Management Area plans.

Policy NRM7: Air Quality

Local Authorities and other relevant bodies should seek an improvement in air quality in their areas so that there is a significant reduction in the number of days of medium and high air pollution by 2026. Local Development Documents and development control can help to achieve improvements in local air quality through:

- Ensuring consistency with Air Quality Management Plans
- Reducing the environmental impacts of transport and congestion management, and support the use of cleaner transport fuels
- Mitigating 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
- Encouraging the use of best practice during construction activities to reduce the levels of dust and other pollutants.

4.2.2 The Sussex Air Quality Partnership (Sussex-air)

The Partnership was formed in 1995 by the Chartered Institute of Environmental Health Chief Officers' Group 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 and manages air quality data in Sussex.

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

4.2.3 air-Alert⁷

This is a service provided by the Sussex Air Quality 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 choices about their preventative medication and self health management.

Air-Alert for schools⁸ is a similar scheme but where the messages are sent direct to the schools such that teachers can be more aware of the potential impact on children suffering from asthma.

4.3 West Sussex Local Transport Plan 2006 - 2016

The WSCC LTP 2006-16 (LTP2) describes the County Council's strategy for local transport. WSCC worked closely with CDC on producing the final LTP2, submitted in June 2006. WSCC have been and remain closely involved in the production of this Action Plan, which will be integrated into a future LTP. The current LTP addresses the four main shared priorities set by the Local Government Association (LGA), which include:

- Better air quality.
- Tackling congestion.
- Improve accessibility.
- Safer roads.

A range of LTP initiatives listed below will have a positive benefit on air quality:

- Major road schemes (see 8.5 below).
- 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.
- TravelWise 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.

WSCC intend that LTP2 will be replaced in 2011. As such the AQAP will be reviewed when the replacement for LTP2 is in place. This should ensure that the actions intended by this document remain congruent with the transport planning process and that any new opportune actions can be incorporated at that time.

4.4 Chichester District Council Local Development Framework

Chichester District Council is currently writing its Local Development Framework (LDF) Core Strategy for adoption in 2010 to replace the existing Local Plan. The LDF

⁷ see: <http://www.sussex-air.net/airalert.html>

⁸ see: <http://www.airalert.info/airAlert4Schools.aspx>

will be the spatial planning framework for Chichester District, consisting of a portfolio of Local Development Documents.

The Core Strategy will effectively guide development throughout Chichester District for 10 years following its adoption. Development is responsible for much of the traffic growth in the District. As such it is imperative that, amongst other aims, the LDF shapes development so as to minimise and mitigate against traffic generated by new housing, commercial and industrial buildings. In order to maximise the linkages between West Sussex Local Transport Planners and the LDF it is proposed that the possibility of writing a Supplementary Planning Document regarding air quality is discussed in detail. This would include an embedded Low Emission Strategy⁹.

4.5 Chichester District Council Climate Change Strategy

The CDC Climate Change (CC) Strategy was reviewed and re-adopted in September 2008. Recognising the strong synergies between tackling climate change and air quality issues, the CC Action Plan includes actions that are specifically related to air quality.

The recent DEFRA¹⁰ 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. The most relevant¹¹ actions from the CDC Climate Change Strategy are at Appendix 4.

4.6 Chichester District Council Sustainable Community Strategy

The new Sustainable Community Strategy¹² (SCS) for the District is being consulted on as this Action Plan is being finalised. Two of the key challenges for Chichester that have come from the consultation are; maintaining and enhancing the District in the face of development and improving and maintaining health and community wellbeing. Our public survey said that 75% of respondents thought that protecting our environment and landscapes is a high priority for the District. This AQAP will contribute to the health, environment and transport key themes of the SCS when it is adopted.

4.7 Local Area Agreements

A Local Area Agreement (LAA) is an agreement between central government and local government to give local authorities "greater flexibility and capacity to deliver solutions for their local areas". The LAA is overseen and managed by the county wide Local Strategic Partnership which includes a wide range of partner organisations and their representatives.

⁹ As per Low Emission Strategy Good practice guidance consultation copy, Beacons Low Emission Strategies Group March 2008.

¹⁰ Air Quality Expert Group, April 2007.

¹¹ Arguably most Climate Change actions will contribute to improving air quality.

¹² CDC consultation closes end July 2008 and adoption of the final strategy is intended for December 2008.

The LAA must choose up to 35 of the new National Indicators according to local priorities. The current LAA includes two¹³ priorities with relevance to pushing modal shift and resolving traffic associated air quality issues.

4.8 Air Quality Monitoring

Chichester District Council has an extensive ongoing air quality monitoring programme. The results from the monitoring have helped us to establish where UK government health based air quality standards are not met. These¹⁴ have resulted in the declaration of the three AQMAs. Air quality monitoring results are reported annually and are available for our AQMA locations at Appendix 3¹⁵.

We consider our air quality monitoring programme to be important work. It enables us to determine areas of poor air quality, feeds into pollution prediction modelling, keep an eye on trends and vitally to inform policy development and keep our communities informed of the air quality where they live. We have been awarded additional monies from DEFRA to install a new NO₂ monitoring station in Orchard Street where one of the AQMAs is declared.

4.9 Our partners

Local air pollution in Chichester District is mainly associated with exhaust emissions from traffic. Culturally our relationship with the car is deep rooted and complex. In order for any actions to have the potential to lever change and tackle air pollution then we must work in a joined up way. The Royal Commission on Environmental Pollution¹⁶ notes the complexity and interconnected nature of urban issues related to increased car ownership. It refers to these as 'wicked problems' where there must be many actions to resolve them.

In this regard our key partner is the WSCC Transport Planning team. This document is the result of meetings with WSCC to ensure that we work closely with our partner who also produces the Local Transport Plan (LTP2). The District Council land planning policy team is also a key partner to bring forward developments that maximise the opportunity to push modal shift to more sustainable transport modes.

Our key partner for the AQMA on the A27 is the Highways Agency (HA). The issues have been discussed with the HA though at present there are no practicable options available to bring forward better air quality ahead of the proposed A27 improvements¹⁷. In any case the HA has improved the Stockbridge roundabout east and west of the roundabout in 2006 in order to optimise flow and environmental conditions at and around the junction in as far as is currently practicable. WSCC has also increased the capacity of the junction of the southern approach of the Selsey

¹³ LAA action 26 NI 185 Access to services and facilities by public transport, walking and cycling. LAA action 30 NI 198 Children travelling to school – mode of travel usually used.

¹⁴ Augmented by computer modelling studies presented in the Detailed Assessment reports.

¹⁵ All air quality monitoring results for Chichester are available at <http://www.chichester.gov.uk/index.cfm?articleid=5132>

¹⁶ Royal Commission for Pollution, The Urban Environment, 2007.

¹⁷ To be commenced around 2018 depending on funding.

Road to the A27¹⁸. Other actions in this Plan will impact the non A27 traffic volumes where it crosses the A27.

The other key partner is the community. It is clear from consultation exercises carried out when the AQMAs were declared that there is a great public interest in tackling the issues before us.

Locally elected members are the representatives of the wider voice of the electorate. As such their input into this Action Plan is crucial. A pan CDC/WSCC Members and Officers working group will be set-up following adoption of this Action Plan. This will maximise the opportunities which flow from this work, (see Section 10.0).

5.0 STATUTORY BASIS

5.1 Chichester District's Air Quality Management Areas

Chichester District Council has a responsibility under Part IV of the Environment Act 1995 to monitor and identify sources of air pollution within its area. In particular it should consider locations where receptors¹⁹ are present. These are largely where people are living and where air quality standards are not being met. Where these standards are not being met the local authority must designate an Air Quality Management Area (AQMA) and produce an Air Quality Action Plan (AQAP) to tackle the pollution identified in these areas.

Chichester District Council has declared three AQMAs in the following locations (see Figures 1, 2 and 3 below for maps showing the AQMAs):

- A27/A286 Stockbridge roundabout junction, Chichester.
- St Pancras, Chichester.
- Orchard Street, Chichester.

All of the areas have been declared because air quality in them is failing, or is likely to fail to meet the UK's air quality Objective for nitrogen dioxide (NO₂) of 40µgm⁻³ as an annual mean concentration. This is due to traffic emissions, poor traffic flow and in the case of Orchard Street and St Pancras, the building topography preventing pollution from always being flushed away by clean air. Although the declarations are for nitrogen dioxide, other vehicle related pollutants will also be elevated in these areas though not in breach of the UK objectives.

Table 1: Numbers of properties exposed in each AQMA

AQMA Location	Number of Properties Exposed	Maximum annual mean NO ₂ concentration µgm ⁻³
Stockbridge Roundabout	1 in AQMA (comprising 9 flats) (7 properties abutting)	51.8 (2007)
Orchard Street	73 properties (inc 2 properties abutting)	37.0 (2006)
St Pancras	32 properties (inc 6 flats and 1 property abutting)	57.0 (2006)

¹⁸ At the Whyke Road roundabout.

¹⁹ Residential property facades are the relevant receptor in the context of the current AQMAs.

The recent Further Assessment reports (2008) found that annual average NO₂ levels were and/or might still be breached in the AQMAs and therefore recommended that all three AQMAs should remain.

Whilst Table 1 (as above) shows a relatively modest number residents living in properties within the AQMAs in comparison to the total number of residents in Chichester City the implications for the City and wider areas are very significant. Work to determine whether other AQMAs are necessary is also ongoing. In order to deal with the geographically disparate AQMAs, a Chichester wide plan is needed.

5.2 The potential health effects of nitrogen dioxide

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. Local domestic gas use will also contribute to NO₂ concentrations. 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 concentrations NO₂ causes inflammation of the airways, long term exposure may affect lung function and respiratory symptoms. NO₂ also enhances the immune 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.

6.0 LOCAL AIR QUALITY MANAGEMENT IN CHICHESTER

The District Council completed its first review and assessment round in 2000, at that time it was considered that an AQMA was not necessary. The second round of review and assessment 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 at Stockbridge roundabout and the Detailed Assessment for Stockbridge roundabout, completed in 2005, concluded that the annual mean air quality for objective nitrogen dioxide was likely to be exceeded. DA's followed in 2006 for St Pancras and Orchard Street. Consequently the District Council declared AQMAs in August 2006 and April and May 2007. The areas contained by the AQMAs are shown in Figures 1 – 3 below.

Table 2: UK air quality objective breached in the AQMA locations

Pollutant	Objective	Measured as	To be achieved by
Nitrogen dioxide (NO ₂)	40 ug/m ³	Annual mean	31 st December 2005

The table above shows the NO₂ objective exceeded within the Chichester AQMAs. Additional information is available in Appendix 3 and a full list of the objectives set out by the 2007 Air Quality Strategy is available from the DEFRA website.

6.1 Stockbridge Roundabout A27/A286 AQMA

The junction at Stockbridge Roundabout is one of the most heavily trafficked in Chichester District. The A27 carries approximately 50,000²⁰ vehicles per day and the A286 carries approximately 12,000 vehicles per day across the junction. The junction is seen to be at capacity during peak hours despite junction improvements made by the Highways Agency in 2006.

There are several air quality monitoring locations around the junction which continue to indicate that air quality fails the UK Standard and Objective by a significant margin.

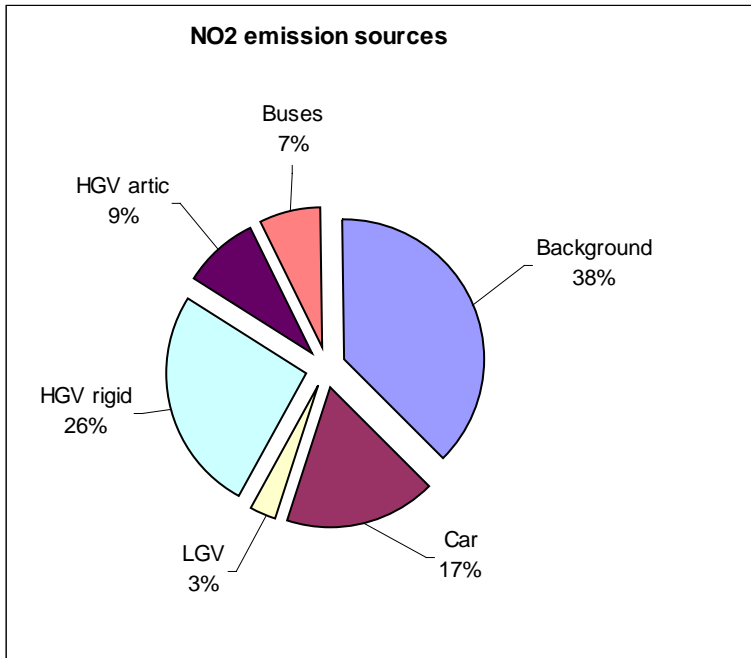
Figure 1: The Stockbridge Roundabout AQMA (shown as the hatched area).



The percentage contribution of NO₂ from the different vehicle classes is shown in the pie chart below. Chart 1 shows that the diesel fuelled larger vehicles are the dominant contributors of NO₂ at the Stockbridge AQMA.

²⁰ 50,000 Annual Average Daily Traffic

Chart 1: Percentage NO₂ contribution by vehicle class for Stockbridge roundabout



6.2 Orchard Street AQMA

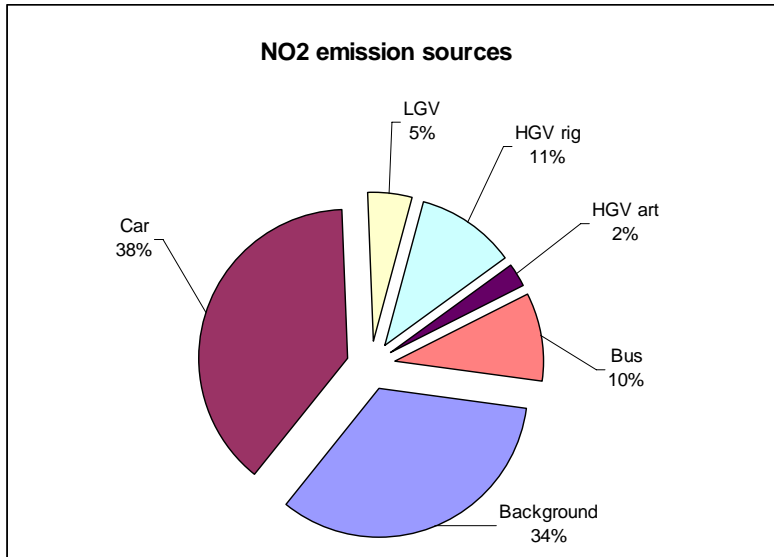
Orchard Street is part of the northern section of the Chichester inner ring road. At its north eastern end it is partially enclosed by the surrounding residential buildings. Traffic volumes are approximately 19,000 vehicles per day and at peak hours the road is observed to be heavily congested. Pollution from vehicles is prevented from being effectively dispersed and the annual mean UK Objective for NO₂ is breached.

Figure 2: The Orchard Street AQMA (shown as the hatched area).



The percentage contribution of NO₂ from the different vehicle classes is shown in the pie chart below. Chart 2 shows that the background sources contribute a similar percentage of NO₂ to the cars at the Orchard Street AQMA.

Chart 2: Percentage NO₂ contribution by vehicle class²¹ for Orchard Street



6.3 St Pancras AQMA

At its far southwestern end, St Pancras is highly canyonised, preventing pollution from being effectively dispersed. The street carries approximately 19,000 vehicles per day. Whilst traffic generally flows reasonably well on this street, the high buildings effectively trap the pollution and give rise to the AQMA.

Computer modelling work has established the relative nitrogen dioxide contributions from the different vehicle categories as shown in the pie chart below. The annotation 'background' in the pie chart represents the percentage of NO₂ in the local atmosphere from remote sources of pollution (Europe and London etc) and there will also be contributions from local domestic heating and fuel use. Given the analysis, it is suggested that measures that tackle car use are likely to be the most effective for St Pancras. Given the proximity of this AQMA to Orchard Street then the same conclusions are drawn for Orchard Street.

²¹ LGV = light goods vehicle, HGV rig = heavy goods vehicle rigid, HGV art = heavy goods vehicle articulated

Chart 3: Percentage NO₂ contribution by vehicle class²² for St Pancras

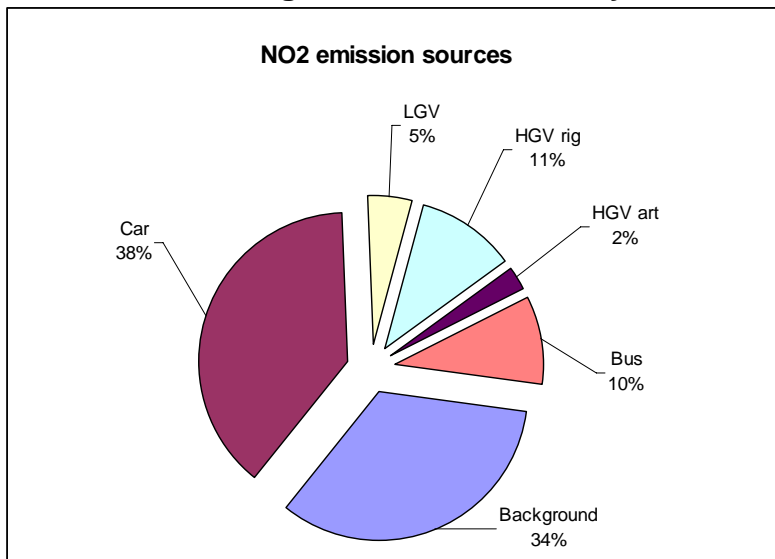
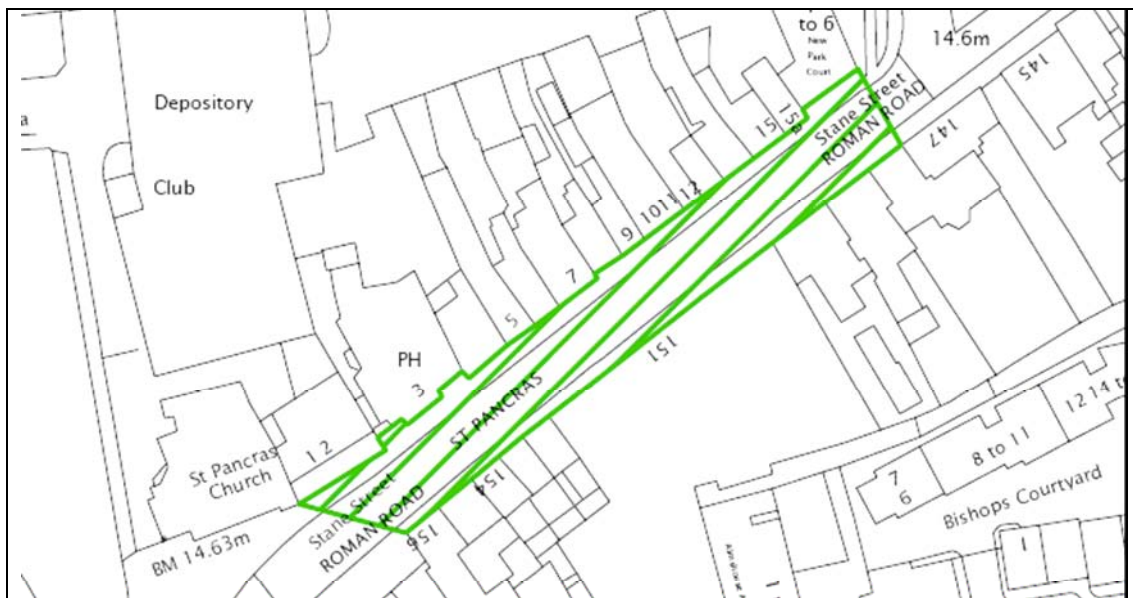


Figure 3: The St Pancras AQMA (shown as the hatched area).



7.0 POLLUTANT CONCENTRATIONS IN THE FUTURE

Air dispersion modelling was carried out for the Further Assessments (FA) of all three AQMAs. The reports predict forwards to 2010 levels within the AQMAs (2010 being the Government's target date to achieve the objective of $40\mu\text{g}\text{m}^{-3}$ as an annual mean).

The FA modelling results for Stockbridge suggest that relevant receptor locations will borderline fail the Government standard in 2010. For St Pancras, exceedences of the standard are predicted beyond 2010 and for Orchard Street, the modelling

²² LGV = light goods vehicle, HGV rig = heavy goods vehicle rigid, HGV art = heavy goods vehicle articulated

predicts that the NO₂ concentration will be equal to the government standard (ie borderline fail).

Air quality monitoring results for these areas helps us to further assess the situation. It is clear that the exceedence of the standard for Stockbridge and St Pancras continues to be significant while at Orchard Street, the results are borderline on the standard. It is planned to install a realtime monitoring station in Orchard Street in the near future. The realtime station will enable us to more accurately measure the air pollution (nitrogen dioxide) on Orchard Street. It will also allow us to observe the relationship between the pollution level and the traffic volume and flow on Orchard Street.

Modelling the air quality impacts of traffic into future years is complex, involving many data-sets. Our modelled data may be particularly sensitive to two of these data sets:

The first relates to emissions factors²³ assumed for the local vehicle fleet. A new set of emissions factors is to be released later in 2008 and these will contain a larger component of direct tailpipe NO₂ emissions. This is as the penetration of Euro III diesel light duty vehicles increases, as they have a greater percentage of direct NO₂ emission.

As the climate changes then urban concentrations²⁴ of ozone are predicted to increase. As this occurs then the oxidation of NO_x to NO₂ in urban environments might be accelerated.

Given both of the above factors, the modelled concentrations as reported above might understate what comes to pass. In London from 2002 – 2005, the greater penetration of Euro III vehicles and the retrofitting of regenerative particle traps on buses have caused unexpected rises in NO₂ concentrations.

8.0 FUTURE DEVELOPMENT

8.1 Local Development Framework

The Secretary of State's proposed changes to the South East Plan²⁵ sets out that Chichester District is required to provide 480 houses to the District's existing housing stock every year until 2026. Careful land-use planning can ensure that the environmental impact of these additional properties and their associated activities is minimised and/or mitigated against in as far as is possible. Integration into the emerging Local Development Framework²⁶ (LDF) in this regard is crucial in order to maximise the opportunities to influence development positively in this context.

The Core Strategy (CS) of the LDF is likely to be adopted around July 2010²⁷. It is intended that the CS²⁸ will contain wording with regard to air quality. In this way it

²³ Taken from the National Atmospheric Emissions Inventory.

²⁴ This comment refers to average concentrations not peak values.

²⁵ Secretary of State's proposed changes to the draft Regional Spatial Strategy for the South East of England, July 2008.

²⁶ Which replaces the existing Chichester District Council Local Plan.

²⁷ or possibly 6 months earlier depending upon emerging Government Guidance.

may be possible to produce a Supplementary Planning Document which gives a clear statement about the relationship between planning and air quality. Furthermore it is intended to provide a link to a Low Emissions Strategy in the document. Subject to discussions of the detail, this approach should maximise the way in which air quality can influence the planning process.

West Sussex County Council Transport planners, CDC Policy Planning Team are working together to ensure the policy framework will minimise the impact from additional housing.

8.2 Graylingwell and Roussillon Development

Former National Health Service and Defence Estates land has been released by the Government for redevelopment at Graylingwell Hospital and Roussillon Barracks Chichester. Significantly the development(s) are expected to add approximately 1200²⁹ new homes and a range of facilities, including a school, leisure facilities, commercial properties and a healthcare facility to Chichester. Whilst the development is aspirationally net zero carbon, when delivered, it is predicted to add to the volume of vehicles using the road network in and around Chichester.

In order to minimise the impact of the development on the existing city there is ongoing engagement with the developers. A Transport Assessment of the development site will be delivered, assessing the predicted impact of the development. If impact is predicted then this will enable Section 106 contributions to mitigate against the impact of the development.

The site is also being engineered so as to maximise the likely take-up of sustainable travel modes including cycling and walking. Proposed features of the site include 200 community bicycles, a regular bus service and a car club. Rising bollards will limit the permeability of the site east-west to the private car, encouraging the mode of choice into Chichester city centre to be walking or cycling.

8.3 Chichester Southern Gateway

Chichester Southern Gateway refers to the area including the Bus Station and Railway Station. Redevelopment offers a significant opportunity to emphasise this area as a transport hub. The emphasis can be made by the relationship between the buildings and by the provision of appropriate facilities such as bike storage.

The apparent linking of the more sustainable transport modes (train, bus, walking and cycling) through the design and layout of the physical environment will turn this area into a more effective sustainable transport hub. This will make it easier for those using the 'hub' to make their whole journey through more sustainable means than otherwise would be the case.

Both the District Council and WSCC are working together with potential developers to maximise the opportunities to make this an effective transport hub.

²⁸ As the new Core Strategy will be place based, as the air quality issues discussed here only relate to Chichester then the wording may be contained in the relevant section of the Core Strategy.

²⁹ The range is between 1,000 to 1,400 houses.

8.4 Northgate Gyratory Improvements

Should development proposals come forward for the redevelopment of Northgate Gyratory then the possibility of improving flow through Orchard Street would result. Such work will have an impact on the Orchard Street AQMA though modelling work at that time would inform of the scale and direction of that effect.

8.5 A27 improvements³⁰

The Highways Agency is proposing to make significant improvements to the A27 Chichester bypass, possibly commencing in 2018 subject to funding being confirmed. The improvements include grade separated junctions, the possibility of a Stockbridge Road South to Fishbourne A27 roundabout link road and some junctions engineered to allow only left in left out movements. When the improvements come forward then they are likely to have a significantly beneficial effect on the A27 Stockbridge roundabout AQMA³¹. The air quality impact on the inner ring road AQMAs is less clear at this time and so air quality modelling will be required.

8.6 Park and ride sites

The Chichester District Council Car Parking Strategy is currently being reviewed by the Chichester Parking Forum. As such Park and Ride may form part of the CDC strategy when the review is complete³² and has been approved by Executive Board. Nevertheless, air quality will be one of the criteria which is weighed by the Parking Forum in deciding the form of the forthcoming strategy. Park and ride sites are also considered in Section 10.3 under Transport Planning.

9.0 PROPOSED AIR QUALITY ACTIONS

CDC and WSCC have worked closely on the proposed air quality actions and all are suitable actions to take forward as part of the action plan. Actions are presented in five groupings:

- Behavioural change measures; these are actions aimed at encouraging and/or leveraging people to change their mode of transport to a more green mode (ie cycle, walk, public transport, car share or avoid a journey).
- Land use planning; these actions are aimed at enshrining air quality considerations into planning policy through a strong policy in the emerging LDF and subsequently emphasizing the links to transport planning to prevent or mitigate air pollution impact.
- Transport planning; actions involving infrastructure provision or road layout changes to reduce congestion and enable alternative mode take-up.
- Enforcement; actions where CDC has specific statutory powers that help regulate local air quality.

³⁰ <http://www.highways.gov.uk/roads/projects/4039.aspx>

³¹ Early air quality modelling associated with the HA 2005 consultation on the proposed A27 improvements suggested that the AQMA would technically cease to exist if the improvements are delivered.

³² The reviewed strategy is due for adoption late 2008.

- Education; actions enabling the provision of information to encourage environmental awareness and behavioural change.

10.0 AIR QUALITY WORKING GROUP

To maximise the possibilities offered by this Air Quality Action Plan it is imperative that WSCC and CDC work as a strong partnership. It is also key that political and community engagement is properly sought and enabled to give weight to the aspirations of this document and to ensure that the community's realistic concerns are reflected here. As such an Air Quality Working Group will be set-up to engage with the appropriate persons and to review progress in delivering the actions proposed here. The Working Party will meet thereafter on a six monthly basis (or more frequently as issues may dictate) and will include member and officer representation from both Chichester District Council and West Sussex County Council. The draft terms of reference for the group are at Appendix 7³³.

During the consultation stage of producing this document officers have met with local residents' groups and elected members from both CDC and WSCC. Chichester Residents Association Co-ordinating Group³⁴ (CRACG) have committed to ongoing engagement in delivering and developing the AQAP. Meetings are also intended with other relevant local groups such as Transition Chichester.

The air quality officer at CDC also attends the Climate Change Panel which in turn has representation on the Chichester Parking Forum. In this way future policy developments across these subject areas should embed considerations and implications from other policy areas.

10.1 Behavioural change measures

10.1.1 TravelWise Smarter Choices

Smarter Choices refers to a variety of methods and initiatives which reduce the negative impacts of travel on congestion, carbon emissions, the environment and health. It embraces many of the supporting factors which influence travel choice such as public transport, cycling and walking information, together with directly informing people about alternative modes of travel through personalised travel planning schemes.

Smarter Choices are becoming an increasingly important element in ensuring an effective system of transport in the United Kingdom. One of the challenges is ensuring that Smarter Choices are mainstreamed into transport strategies. Only in this way can transport strategies create sustainability, greater accessibility and social inclusion and a first-class integrated transport system. Initiatives include:

- Workplace and school Travel Plans
- Personalised travel planning, travel awareness campaigns and public transport information and marketing
- Car clubs and car sharing schemes

³³ The terms of reference will be discussed at the first meeting of the Group and therefore maybe subject to change.

³⁴ This group has representation from residents' groups where each of the AQMAs are situated.

- Teleworking, teleconferencing and home shopping

10.1.2 Travel Plans

Travel plans provide packages of measures and initiatives that aim to reduce the number of car journeys made, by providing people with greater choice. Aside from reducing air pollution and climate change gas emissions, other benefits include greater social interaction whilst car-sharing or walking, active travel incorporates exercise into the day, reduced fuel expenditure for individuals and enhanced corporate image.

A Travel Plan can offer real benefits not only to the organisation who adopts it and for those it targets, but it can also offer real benefits to the surrounding community. It will help to relieve local parking, congestion problems and improve public transport connections across the area.

10.1.3 Workplace travel plans

Workplace travel plans encourage employees to use alternatives to single-occupancy car-use. Such plans could include:

- Car sharing schemes
- Improved facilities to encourage cycling (secure bike parking and showers)
- Dedicated bus services
- Preferential access to reduced price parking for car sharers
- Staff bicycles to encourage local journeys to be made sustainably
- Flexible working practices such as remote working enabled by remote IT access
- Video conferencing
- Preferential rate loans to purchase bikes for commuting
- Interest free season ticket loans for public transport
- Information for staff to encourage green vehicle awareness when purchasing a car

WSCC has worked with some local employers such that they already have Travel Plans, however, important local employers such as St Richard's Hospital are yet to adopt a plan. WSCC is committed to working with St Richard's to deliver an effective travel plan at the earliest opportunity.

10.1.4 Residential and personalised travel plans

Chichester District has some significant housing developments proposed over the next few years that have potential to generate a significant additional volume of traffic. Travel planning principles applied through workplace and personal travel plans can also be utilised to influence travel behaviour at new developments. It is known that the best time to establish new patterns of behaviour is when people are at a time of change. Planning conditions can require as a condition of planning permission that a travel plan for a development is produced. All new residents should be made aware of the travel plan through the information pack they receive with their new property. Travel vouchers can be offered as part of welcome pack to new residents.

Through the planning system CDC and WSCC will be working to ensure that new developments mitigate against any potential impact through S106 contributions. CDC will explore the possibility of engaging an MSc student to look at Chichester District and recommend which parts of the community might be most responsive to travel planning and how best to deliver a behavioural change/modal shift project.

10.1.5 West Sussex County Council staff travel plan

WSCC employs in excess of 2000 staff in Chichester and elsewhere and has had a staff Travel Plan in place since 1997. The plan has reduced sole occupancy vehicle use by Chichester based employees from 55% to 37% in 2007. WSCC Initiatives under the Travel Plan that aim to encourage green travel include:

- For three-plus car sharers there are reserved free car-share parking bays³⁵.
- 640 staff have signed up to the 10% Commuter Challenge to make at least 10% of their journeys by sustainable modes or work at home.
- Pool bikes at County Hall and Power Place (Terminus Road).
- Twelve cars run on a range of sustainable fuels (LPG, hybrid and biodiesel).
- Staff car schemes rationalised.
- Free Bognor to Chichester staff bus run on biodiesel.
- Video conferencing facilities.
- WSCC also actively promote various green days.

10.1.6 Chichester District Council Staff travel plan

The current green transport plan includes the following policies:

- A pool bike.
- An increased mileage allowance for business miles cycled.
- Interest free loans for season tickets.
- Access to a computerised rail planner programme.
- Access to a car share database.
- A car lease scheme that incentivises contracts for smaller cars.

Chichester District Council is committed to reviewing its Staff Travel Plan through the newly revised Action Plan enshrined in the Climate Change Strategy (see Appendix 4). The Council employs approximately 650 people. As one of the largest employers in Chichester, staff travel mode, both to and from work, and whilst carrying out work duties has an important effect on the city's traffic. A staff travel plan commits the Council to green the travel of its staff through incentivisation, awareness raising, affecting purchasing choice and targeted campaigns.

The Government now requires the Council to report its annual reduction in NO₂ and PM₁₀ emissions from estate and operations against NI 194 (see below). This Indicator will help local authorities to quantify their emissions so as to focus on activities where emissions can be reduced.

10.1.7 National Indicator

³⁵ Twelve spaces.

In February 2008 the UK Government published its new Performance Framework³⁶ of 198 National Indicators (NI's) for Local Authorities. Three of these indicators are important in measuring the environmental performance of authorities; NI 185, NI 194 and NI 198. These indicators relate to CO₂ emission reduction, reduction in NO_x and PM₁₀ emissions and recording the transport mode by which children travel to school.

Chichester District, West Sussex County Council and LSP partners have also reflected the importance of NI 198 by making it a local priority NI through the LAA. National indicators are also reflected in Chichester District's Climate Change Strategy (see Appendix 4).

10.1.8 Use of cleaner vehicles

CDC has recently adopted a Sustainable Procurement Strategy (also see 10.1.10). The strategy includes a commitment to 'look to reduce pollution or the risk of pollution'. In this context, future vehicle purchasers will consider the environmental impact of the vehicle prior to purchase.

WSSC has available LPG refuelling facilities for WSSC and CDC vehicles. Both Councils will continue to review the situation regarding truly sustainable biofuels and their vehicle fleets.

10.1.9 WSSC Car share database

On average car sharing saves participants £1000 per year. With price of fuel being so expensive this average saving is likely to increase. Car-sharing also increases social inclusion and of course reduces total emissions by taking a car off the road and reducing congestion.

WSSC have a car-share database implemented through the LTP process. (<http://www.westsussexcarshare.com/>) which has been actively promoted to WSSC and CDC staff. WSSC and CDC (as part of its Travel Plan review) will actively promote the database to their staff and the community through integration in to campaigns such as National Liftshare Day, Green Transport Week and Travelwise Week.

10.1.10 CDC Sustainable Procurement Strategy

The CDC Sustainable Procurement Strategy aims to ensure that CDC purchases goods that minimise the social, environmental and economic impact. As part of the detailed policy considerations that make up the Strategy there are the aims to:

- Endeavour to use the least environmentally damaging products and methods.
- Look to reduce pollution or the risk of pollution.

CDC will continue to consider the environmental impact of goods purchased as part of an overall sustainable purchasing policy.

³⁶ The New Performance Framework for Local Authorities and Local Authority Partnerships, Department for Communities and Local Government, 2007.

10.2 Land use planning

10.2.1 Section 106 monies

UK Government Planning Guidance PPS23³⁷ outlines the statutory basis for applying a combination of planning conditions and legal obligations to address the environmental impacts of proposed developments. In particular, it notes that 'Section 106 Agreements can be used to improve air quality, make other environmental improvements... or offset the subsequent environmental impact of a proposed development'.

Planning conditions and obligations have been successfully employed to help mitigate the transport impacts of development by stimulating and accelerating the uptake of low emission fuels and technologies. Similarly they have been used elsewhere to support the implementation of AQAPs and to support strategic monitoring activities.

In any case developers are expected to make all reasonable efforts to reduce the emission impacts of a proposed development, firstly through appropriate design features and by proposing mitigation measures. Where site specific mitigation is not possible then S106 monies may be sought to fund low emission plans and measures to offset the impacts of the development.

10.2.2 Community Infrastructure Levy

The Community Infrastructure Levy (CIL) is being proposed for use in conjunction with existing Section 106 agreements to increase fairness and uniformity in the way developments contribute to local and regional infrastructure. Chichester District Council (CDC) will not be in a position to charge CIL until the Core Strategy of the LDF is adopted.

A major benefit from CIL would be provision of a mechanism enabling CDC to require developments in the District to contribute to large infrastructure affected by increased development. This would apply not just to WSCC projects but also to infrastructure such the wastewater treatment plants or the A27.

There would be scope for working with adjoining Districts and the County to deliver infrastructure strategically across the region.

10.2.3 Car clubs

Car clubs offer an alternative to private car ownership. A car club provides its members with quick and easy access to a car for short-term hire. Members can make use of car club vehicles as and when they need them, for as little as half an hour at a time. A car can usually be booked by telephone or internet, up to an hour before it's needed. Car club vehicles are usually parked at designated bays in urban and sub-urban streets, near where users need them.

³⁷ PPS 23 Annex 1: Pollution Control, Air and Water Quality (2001)

Car clubs achieve a significant reduction in the number of car miles driven, through changes in travel behaviour and in the number of cars on the road. The combined effect is a reduction in local air pollution and emissions of climate change gases.

Given the possibility of significant housing schemes being delivered in the coming years then the opportunity exists to build car clubs into some of these developments. Where the scale of development permits then car clubs will form part of the list of Section 106 aspirations aimed at mitigating against air pollution and climate change gas emissions arising from the development. Enshrining the principle of car clubs into policy documents such as this AQAP the LTP and the LDF (by way of an SPD and Low Emission Strategy) should help to ensure the implementation of car clubs in some new developments.

10.2.4 Real time passenger information

New housing developments offer a good opportunity to install new travel habits in the occupants when they move in. Over the next few years Chichester is to have several developments of significant numbers of houses. In large developments Section 106 contributions will be made to mitigate against impact. S106 monies can be put towards making alternative modes of transport as attractive as possible in order to maximise their uptake. Such measures include high quality weatherproof bus shelters with realtime passenger information (RTPI) systems built into them. RTPI can also be built into new developments in public spaces, for example the foyer area of commercial buildings. Introducing RTPI in this way might help kick-start RTPI across Chichester helping to make the bus service more useable and therefore increasing uptake. CDC and WSCC will continue to push for such technology through Section 106 monies.

10.3 Transport Planning

10.3.1 Parking policy - Off street parking

Chichester District Council is responsible for most of the off-street parking in the District. Currently discounted prices for monthly car-park season tickets are available for car-sharers to encourage this greener way of travelling and lessen congestion in Chichester. It is also suggested that greater season ticket discounts are made available for drivers of greener vehicles. A paper was submitted to the Parking Forum (April 08) suggesting the possibility of offering season ticket buyers differential parking rates in relation to different engine sizes or levels of pollutants emitted from vehicles. Smaller engines and environmentally friendly vehicles are given cheaper rates whilst larger vehicles pay standard or above average prices. It is possible that implementation of such a policy could follow the review of the parking strategy.

10.3.2 On street parking

WSCC are responsible for on street parking in Chichester District. There is, for limited parts of Chichester, a Controlled Parking Zone (CPZ). Within the CPZ parking permits are issued to residents and where there is capacity spare permits are sold. WSCC and CDC will work to assess the practicability of installing differential charges

for the permits depending upon selected green credentials of vehicles. This could be seen as a positive incentive to those purchasing permits to own a greener vehicle.

10.3.3 Park and Ride Schemes

Park and Ride is currently only run in the lead up to Christmas, operated from the Chichester College car park. A public consultation for one, possibly two, Park and Ride sites was carried out in 2007. Such schemes have the potential to reduce “in town” traffic levels significantly³⁸. The CDC Parking Strategy is currently being reviewed and Park and Ride may or may not feature in the revised strategy. In any case air quality will be one of the potential policy impacts weighed as part of the policy making process. The timing for Park and Ride is in any case subject to a Government decision on the A27 improvements.

10.3.4 Reducing parking congestion at school drop off points

For sizeable schools and schools situated on already congested roads, school traffic can add to congestion experienced during peak hours. St Richards School on Cawley Road in Chichester has an agreement with CDC allowing parents to park in Market Avenue car park for a short period for free, to reduce the impact on Cawley Road³⁹. A similar plan is in place for Central School on Orchard Street. Here, it is proposed that parents are given free, short-term parking at the Northgate/Theatre carpark.

Where possible similar schemes will be put in place for other schools. Such initiatives encourage walking and should have a direct impact on congestion on the Chichester inner ring road during peak hours.

10.3.5 MOVA traffic signal optimisation

MOVA⁴⁰ is an intelligent form of traffic lights that can optimise flow. WSCC and CDC will assess whether installation of such a system on roads in and around the AQMAs will benefit vehicle flow and hence lower traffic emissions.

10.3.6 Cycling

Cycling has a multitude of potential benefits to society. It is an active form of transport and so helps tackle obesity, heart disease and increases the feeling of well-being. It is emission free and so reduces air pollution and climate change gas emissions. It can reduce congestion by reducing the number of petrol engined vehicles on the road and persons commuting by bike report more predictable journey times. The Government is committed to promoting cycling and announced in January 2008⁴¹ a 500% increase in funding to Cycling England.

³⁸ studies indicate could reduce traffic volumes by 3% in Chichester

³⁹ Cawley Road cul de sac contains St Richards School, residential dwellings, St Richards Church and Cawley Road Medical Centre.

⁴⁰ Microprocessor Optimised Vehicle Actuation (MOVA).

⁴¹ A Sustainable Future for Cycling, January 2008, DfT and Cycling England.

Cycling is a particularly good option for short trips. 41% of all trips are less than two miles - a distance easily cycled in approximately 15 minutes. Nearly a quarter of all car trips are under two miles and 56% are less than 5 miles. Chichester has the added bonus of being broadly flat. Given all of the above there is significant scope for increased cycling trips and WSCC has a significant programme of initiatives to encourage cycling as outlined below.

10.3.7 Cycleways

There are several cycle ways in Chichester District; Salterns Way (Chichester to Witterings), Centurian Way (Chichester to Lavant), The Bill Way (Chichester to Selsey due for completion 2010). More can be done to promote use of these paths as viable routes both for recreational use and as potential commuter routes. Encouraging recreational cycling should in time also encourage commuter cycling.

There is also a network of routes developing throughout the district, particularly in Chichester but also in Midhurst. Work is also advancing on the National Cycle Network and the Bognor to Emsworth route is due for completion later this year.

CDC and WSCC will work in partnership to promote the use of these routes in particular in relation to National Cycling Week.

Other proposed and existing cycling initiatives can be found at 10.5.1.

10.4 Enforcement

10.4.1 Idling engines enforcement

Idling engines cause unnecessary pollution, create noise and waste fuel. By adopting and enforcing regulations⁴² CDC could help to improve local air quality. In the short-term, CDC could raise awareness about the impact of idling engines through targeted campaigns to specific categories of drivers or in areas where vehicles are found idling unnecessarily (and responding to complaints from the public) such as taxi ranks and school pick-up areas where significant pollution might coincide with public exposure. For example, eco-driving training could target bus, taxi or lorry drivers and school travel plans could also include eco-driving training for parents.

WSCC also intend to implement Civil Parking Enforcement (CPE) during 2009. This effectively transfers parking enforcement to WSCC and CDC. WSCC will work with CDC to investigate the practicability of adopting the Idling Engines Regulations. In the context of CPE it is possible to bestow the Civil Enforcement Officers⁴³ with the power to issue fixed penalty notices. This work will be completed before the end of 2009.

10.4.2 Cut engine cut pollution signage

⁴² Regulation 98 of the Road Vehicles (Construction and Use) Act and The Road Traffic (Vehicle Emissions) (Fixed Penalty) (England) Regulations 2002

⁴³ Effectively parking wardens in this context.

Such signage has been in place at level crossings in Chichester for several years encouraging drivers to switch off their engines when stationary. The scheme could be extended to deliver signage at other areas where vehicles commonly stand with engines idling. Suggested additional areas include school drop off/pick-up points, taxi ranks, bus and coach stands.

Such an initiative encourages drivers to consider their impact on the environment and human health. In still, meteorological conditions localised pollution can reach significant levels where people may be gathered and so the initiative will lessen personal exposure for those affected. The effect of signage can be strengthened through anti-idling campaigns at the relevant locations.

10.4.3 Taxi licensing

Chichester District Council licenses Hackney Carriage and Private Hire vehicles. There is currently a review of licensing conditions for these vehicles and the opportunity has arisen to amend policy to allow for the greening of the fleet. At present there are no age restrictions on the age of vehicles entering the fleets or the maximum age of vehicles once in the fleet. Likewise there is no stipulation for vehicles to be of any particular 'Euro' engine standard.

Discussions are underway at the CDC Licensing and Enforcement Committee to bring the above issues forward and enshrine them in policy by Spring 2009. This policy initiative is particularly sensitive to associated social and economic issues. In the meantime some companies and drivers have already begun to purchase greener vehicles such as Euro III compliant cars.

10.4.4 Roadside emission testing

Roadside emissions tests can be carried out by authorities who have declared traffic-related AQMA(s)⁴⁴. Authorised personnel may carry out a roadside test. Where emissions exceed the permitted level a fixed penalty notice may be issued, or the driver asked to provide a certificate showing that the vehicle has been fixed. CDC has carried out several such events in the past and will, in conjunction with the Police and Vehicle Operators Services Agency (VOSA), consider reinstatement of this work.

10.4.5 Remote sensing

There is concern that the MOT test does not reflect a vehicle's emission performance when it is actually used on the road. Vehicle emissions can now be detected remotely, alongside number plate details without the need to stop the cars. Results from the sensor can be displayed instantaneously at roadside Variable Message Signs. Drivers of the most polluting vehicles can be contacted directly offering them advice regarding the servicing of their vehicle. Such technology can be used to make drivers more aware of the impact of their behaviour and can be run in conjunction with other green campaigns. Such work could also be bought forward as a pan-Sussex initiative through the Sussex Air Quality Partnership.

⁴⁴ AQMA declared under S83 of the Environment Act 1995.

10.4.6 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 (Charts 1-3). 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 emissions coming from other background non-transport sources are listed below:

10.4.7 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 Chichester City. Active promotion is already underway through Fuel Poverty Strategy and the Climate Change strategy⁴⁵.

10.4.8 LAPPC and LAPPC enforcement

The Council continues to ensure that emissions 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 Chichester Town Centre.

10.4.9 Bonfires

CDC will continue to use its statutory powers to minimise the impact from nuisance bonfires. Repeat offenders are visited by officers of the Environmental Health Service to advise them of the impact their bonfires are having on local air quality and information is given out on alternative ways of disposing waste. Under the Clean Air Acts, emissions of dark or black smoke can be prohibited where they are found to be prejudicial to health.

10.4.10 NO_x absorbing paint and pavement

This technology could help to reduce pollution levels in the AQMAs. The technology uses the energy from sunlight to return NO_x back to nitrogen and oxygen. The product is in use in the London Boroughs of Camden and Westminster.

The overall costs and benefits of this technology are not yet clear. If the technology is shown to be beneficial then monies could be bid for through the through the DEFRA grant system to implement this technology in the Chichester City AQMAs.

⁴⁵ Schemes include <http://www.energy-smart.org.uk/> and <http://www.warmfront.co.uk/>

10.5 Education

West Sussex County Council already has a well established Safer Routes to School Team, which works with schools to produce travel plans aimed at making travel to and from school less dependent on the private car. These schemes encourage car-sharing schemes, walking buses and the use of public transport. West Sussex's work involves schools that are located in or adjacent to Air Quality Management Areas. Chichester District has indicated its willingness to work with WSCC to provide support to enhance air quality element to this work, particularly in schools that are located in or close to the Air Quality Management Areas.

Through conversations with the West Sussex County Council officers responsible for school travel plans a number of opportunities for joint working between WSCC and CDC have been identified. These will highlight air quality issues within the development of school travel plans and use the examples of schools adopting travel plans and initiatives such as walking buses, children drop-off points, 20mph zones and air quality information aimed at schools to encourage other residents to adopt non-car means of travel into the town centre. Joint initiatives at schools such as presentations are being sought through CDC offering to talk to children with regard to pollution issues.

10.5.1 Cycle to School

School travel plans include measures such as cycle training, lockers, secure cycle parking and the setting up of cycle trains and other cycling incentive schemes. The Local Area Agreement will include a target specifically relating to the predominant mode of transport used to get to school. Commitment through the LAA means that WSCC and CDC will join resources to tackle priority issues more effectively. Specific targets may be developed given this issue featuring in the LAA.

10.5.2 Cycle training

The WSCC training scheme is the local equivalent of the old Cycling Proficiency Scheme. The training provides parents and children with the necessary skills, confidence and awareness to cycle safely on today's roads.

WSCC offer cycle training for all schools within West Sussex. This initiative is mainly aimed at year 6 and 7 pupils.

10.5.3 National Bike Week

National Bike Week is a well established mid-summer week that promotes both recreational and commuter cycling. CDC and WSCC have promoted this week to their staff for many years. It is proposed that the promotional push is to extend to more widely encourage the citizens within the District to cycle during the week and beyond.

10.5.4 Bike to Work Scheme

Commuters purchasing bicycles through the Bike to Work Scheme save approximately 50% on a new bicycle. The scheme costs any subscribing employer nothing other than set-up and administration costs. As part of the Travel Plan review, CDC will consider implementing this scheme.

10.5.5 Variable Message Signage (VMS)

VMS is roadside signage which can be programmed remotely to deliver messages to drivers. Such signs can be used to ease traffic flow, for instance, by directing drivers to available spaces in local car-parks or informing drivers of poor air quality days or conveying simple travel behaviour messages. CDC and WSCC will research the impact that such signage could deliver locally the most appropriate locations and how funding might deliver such signage.

10.5.6 Web-site development

CDC's live⁴⁶ air quality data is available from the Sussex Air Quality Partnership web-site. This website will be entirely rebuilt by the Autumn of 2008. CDC's web-pages will link directly to the website providing high quality information and data for the public. We will continue to maintain our own CDC air quality website presence as a resource for documents and local news.

11.0 GOALS OF THE ACTION PLAN

In line with guidance from the Department of Environment, Food and Rural Affairs (DEFRA), this Plan includes measures that are both within and beyond the control of the District Council. DEFRA acknowledges that many of the actions needed to address air quality issues are beyond the remit of the local authority that has responsibility for local air quality management. This is particularly the case where Air Quality Management Areas are declared as a result of traffic-related emissions in areas that have a two-tier local authority structure. This is the case within Chichester District where many of the actions will fall within the remit of the transport authority, West Sussex County Council. Table 5 indicates who has responsibility for each of the measures.

This document contains a range of measures that are likely to have an impact on air quality in Chichester District. Once approved progress of the Plan will be reviewed annually.

The public and other interested parties, as well as statutory consultees were consulted on a consultation draft AQAP to inform this final version.

This version outlines the package of measures that are most likely to achieve improvements in air quality, while balancing the economic and social benefits. The outlined measures have the potential to achieve a significant improvement in air

⁴⁶ updated hourly through the daytime

quality and strive to achieve the Government standard for NO₂ within the AQMA areas.

However, air quality is influenced by the weather as well as by human factors so achievement of this standard is not absolutely certain, even where improvements are achieved through the Action Plan. Chichester will continue to undertake and publish regular reviews of air quality in the District.

12.0 MEASURES CONSIDERED BUT NOT INCLUDED IN THIS ACTION PLAN

Several additional measures were considered which did not make it to this document. Many of these arose during discussion between CDC, WSCC, elected members and the community but have been discounted for the reasons listed in Table 3 below:

Table 3: Potential suggestions considered but not adopted

Measure considered	Reasons and future likelihood
Compulsory purchase of properties so as to remove receptor locations or to alter street geometry to reduce AQMA likelihood.	Such measures are considered highly disproportionate to the air quality issues that Chichester faces.
Road closures.	No practicable road closures that would benefit air quality are currently identified. All AQMA roads carry significant volumes of traffic and no practicable alternative roads are identified that would benefit air quality.
Low Emission Zone/Congestion Charging Scheme.	Demand management measures were considered in detail in the document: The Transport for Chichester Review and Assessment of Options. All measures were considered impracticable at the current time.
Inner ring road lorry ban.	The inner ring road is a crucial artery to Midhurst and the hinterland north of Chichester.
Chichester Northern Bypass.	Such an option is beyond the power of this document and in any case considered disproportionate to the scale of the air quality issues in Chichester.
Amendments to Northgate Gyrotory junction with Orchard Street.	WSCC have previously looked at this issue and concluded that little improvement to flow would result from any scheme. Increases in traffic flow associated with new developments could necessitate such a change in the future, however this is likely to be some way off.
Rerouting traffic from the AQMA roads.	No realistic practicable options have been identified in this regard.

13.0 IMPACT ASSESSMENT OF PROPOSED MEASURES

DEFRA requires Local authorities to rank measures they have identified within their action plans 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 impracticable and technically difficult to 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 impractical were excluded during the screening stage in the previous chapter, as described in Table 3. The socio-economic benefits arising from the implementation of the proposed actions are outlined at Appendix 8.

The criteria included in the impact assessment have been chosen following discussions between CDC and WSCC. The structure of the impact assessment table is based upon the example given in the statutory guidance LAQM PG(05) for this work.

The implementation of a few actions included in the table will be affected by the new developments at Roussillon Barracks and Graylingwell NHS site and also the A27 improvements⁴⁷.

The air quality impacts of the proposed actions will be modelled using Breeze Roads air dispersion model based on the assumptions made in Table 4 below. Further more detailed modelling may be carried out over wider areas of the town depending on our ongoing air pollution monitoring results and SAQP buying a more sophisticated air pollution model⁴⁸.

Many of the actions proposed in this Action Plan are in any case generic in nature. That is to say they do not target specific vehicle types or groups of people but are aimed at the whole of Chichester or the whole of Chichester District. The impact of such measures directly on the AQMAs will be difficult to model with any accuracy.

Integration with LTP2 dictates that future air quality trajectories and targets are produced. Again, these rely on computer modelling and will be worked up in spring 2009 to inform AQAP and LTP reporting requirements.

It is extremely difficult to estimate, with any degree of accuracy or confidence, the impact that the Actions in this Action Plan will have⁴⁹. Nevertheless WSCC Transport Planners have some experience in implementing measures designed to reduce traffic flow. As such figures in Table 4 below are early estimates of the scale of change that might be achieved through the Actions contained herein. Such estimates

⁴⁷ though in any case the A27 improvements are unlikely to be delivered in entirety before 2020.

⁴⁸ SAQP intends to purchase the model known as ADMS (Air Dispersion Modelling System by CERC).

⁴⁹ Nevertheless DEFRA, in their response to the draft of this document, specifically asked that we include such figures.

are in any case required in order for trajectories to be estimated as the AQAP is subsumed into the Local Transport Plan.

In making the estimates of reductions we have chosen to estimate the impact on traffic volume rather than the direct impact on air quality. Nevertheless the reductions in traffic flow allow us to model the impact on air quality over the period of the AQAP and beyond.

Table 4: Estimated % traffic reductions arising from key Actions

MEASURE	REDUCED BY - DATE	% REDUCTION (or INCREASE)	TARGET (stated where possible)
PARK & RIDE	2018 (start date for delivery)	3 to 4% across City	
SCHOOL TRAVEL PLANS & ACTIONS	2008/9	2% of total flow (up to 30% of school trips) May do better with remote drop off scheme.	95% of all WSCC schools to have a travel plan by 2010.
WSCC & CDC STAFF TRAVEL	2009/10	1% likely (could be more (3%?) WSCC plan already reducing traffic)	CDC to review staff travel plan by 2010.
BUS/RAIL: Improved bus services etc.	2009/10 (limited effect on ring road e.g. Orchard St.)	0.5% - much more possible in City	WSCC have a target for West Sussex but it is not currently possible to disaggregate this down to District level.
Business Travel Plans	Incremental but say by 2010	1% possible	WSCC target to deliver 60 development travel plans per annum ⁵⁰ .
All other actions cumulatively inc. TravelWise/ Smarter travel	2010 (and beyond)	2% or more. Will help but hard to assess beforehand.	
TOTAL REDUCTION		6.5% to 2010	
MINUS DEVELOPMENT & GEN TRAFFIC	Traffic increases	Say 2% pa INCREASE (LES to help minimise?)	
TOTAL BY 2010		0.5% REDUCTION	
TOTAL BY 2015	(1.5% pa inc or less with P&R reductions etc.)	3.5% INCREASE on 2010 figs, but may do better.	

⁵⁰ 77 development travel plans delivered in 2007. This target is highly sensitive to economic activity and specifically the number of planning applications received.

We have been unable to estimate the impact of some of the Actions included in the Plan. This is for various reasons which include; not being able to estimate delivery timescales, or emissions only reductions Actions such as traffic flow smoothing, signal changes etc. Many of the soft measures are also very dependant upon the availability of funding, though all measures will have a positive benefit overall. As such these are not included in the reduction estimates but will in any case contribute to the overall impact on reducing traffic and pollution.

13.1 Indicators for Actions

DEFRA advise that each action or group thereof has a defined quantifiable indicator or indicators that will be the main evidence presented in statutory annual reports to demonstrate progress. For example, progress with the measures aimed at reducing or managing traffic flows in the AQMAs could be reported in terms of traffic counts or altered fleet mix.

Indicators chosen for the AQAP include percentage traffic volume reduction and the percentage of organisations achieving certain measures eg percentage of schools with travel plans. In setting these indicators we have been mindful of the NSCA (now Environmental Protection UK) guidance on setting indicators for air quality action planning and the DEFRA action planning helpdesk. The indicators are, where available, contained in Table 4.

We have also been mindful of the DEFRA suggestion that we use pollution concentration based indicators as an indicator of success⁵¹. The relationship between implementation of AQAP actions and pollution concentrations is extremely complex, this in part due to meteorology varying year on year and, as this document is finalised, the economic downturn having an impact on traffic volumes⁵². We will nevertheless report trends in air pollution data in future AQAP progress reports.

Through the LTP reporting process indicators will be drawn up in early 2009. These will then be used for both the LTP and AQAP reporting processes. We will report annually against indicators as they are fully worked up.

13.2 Targets for Actions

DEFRA advise that targets should be set for key indicators. The targets should indicate how far the actions are intended to be implemented. Targets should indicate:

The potential air quality benefits of the actions (where the quantified targets and indicators can be used in an emissions or air quality assessment).

When the action has been completed.

Such air quality targets (as described above) will be worked up in collaboration with the WSCC Transport Planners. In this way the targets will be used to report progress against both delivery of the AQAP and LTP2. It is intended that the targets will be

⁵¹ As suggested by DEFRA in their response to the draft AQAP (ref; API-203 Chichester District Council).

⁵² Traffic growth is strongly correlated to economic activity and GDP.

couched both in terms of traffic volumes and nitrogen dioxide concentrations. These will be worked up by April 2009 and are as described below:

Details of the intended traffic volume target are as follows:

Traffic volume targets are considered less nebulous than air quality targets. The target will use trends in traffic volumes through each AQMA in previous years to help inform the likely rate of growth in future years. This will allow projected traffic volumes in future years to be estimated. Likewise additional volume will be estimated that will be generated by new local developments. This calculation will be carried out for traffic flows through all three AQMAs (see Chapter 6.0). Projections of traffic volume reductions due to AQAP actions will then be deducted from the three estimated traffic volumes. These will then be hybridised to give a target based on traffic reductions across all three AQMAs. This target will be worked up for each year 2010 to 2015.

The traffic reduction targets as described above, but non-hybridised, will then be used as input data to model the impact of traffic reductions on air quality concentrations (nitrogen dioxide only). These will provide surrogate targets for the years 2010 to 2015.

Other forms of target that are not traffic or air quality based are as listed in Table 4.

In forming targets we are aware that there are many variables at play with regard to traffic volumes. Likewise there are additional variables in relation to influences on air quality concentrations. Variables influencing traffic volumes and traffic volume growth include economic activity (GDP). Air pollution concentrations are strongly influenced by local meteorology.

14.0 FUNDING THE AQAP

Ultimately the delivery of the actions listed in this document is dependent upon adequate levels of staffing resource and monies to run stakeholder engagement campaigns etc. This document is seen as the beginning of a long process and in order to maximise the benefits of such work then staffing and funding must be available into the medium and long term.

14.1 DEFRA Air Quality Grant Programme

CDC will submit a bid to the above Grant programme following the outcome of the adoption of the AQAP by the Council (intended in the Autumn of 2008). It is likely that the Action Plan measures for which grant monies will be sought relate mainly to 'smart' measures. These include; travel planning, social marketing campaigns to increase awareness, engage and work with community groups and encourage modal shift. Where possible monies will also be sought for measures such as variable message signs (VMS) and NO_x eating pavement. Grant monies have already been awarded to install an air quality monitoring station on Orchard Street. This will be installed by the end of 2008.

14.2 Funding through LTP2

Funding through the LTP is mainly to be spent on transport schemes committed until 2011. The budget for which has been allocated prior to the development of this Plan. It is not anticipated that this document will alter the current intended spend through LTP2 but the AQAP will be integrated via the annual air quality report submitted as part of the LTP process.

14.3 Section 106 monies

WSCC manages a fund of Section 106 contributions intended to mitigate the transport-related impacts of development⁵³. Such contributions will arise from developments such as those proposed in NE Chichester.

Contributions could be used to promote alternatives to the use of the private car and to fund schemes aimed at reducing instances of standing traffic, thereby reducing air quality impacts. For example, as part of the air quality actions initiated by Adur District Council, S106 monies will pay for an intelligent traffic light system to be installed in Shoreham.

14.4 Consultation and stakeholder engagement

A full public consultation of the draft AQAP was carried out for 2 months closing 6th October 2008. In carrying out the public consultation we were mindful of the advice given in the consultation guidance produced by DEFRA and the NSCA⁵⁴. This, the Council adopted version of the AQAP, reflects the comments made by all consultees.

The AQAP was developed collaboratively, and in consultation with, the WSCC Transport Planning Department and their comments have had a significant influence on determining the actions proposed by this Plan.

In any case this document is intended to be organic in nature and will in effect be subject to ongoing consultation and discussion as it evolves. Guidance on consultation relating to air quality places emphasis on the consensus building by engaging as wide a section of the community as possible. This includes residents, local community groups and businesses, (see Appendix 6). In this regard we have particularly engaged with the community groups whose areas incorporate the AQMA's. The Chichester Residents Association Coordinating Group (CRACG) have been particularly forthcoming and regular meetings with this group are intended. CRACG have suggested that they are willing to engage their entire membership to the benefit of the plan. Likewise an early meeting with Transition Chichester suggests that substantial public engagement might be possible through this group's contacts.

In the main it is anticipated that public consultation will be through:
Face to face meetings with interested groups (CRACG and Transition Chichester).
Public consultations through the local media.

⁵³ Contributions from developments are made for a variety of reasons.

⁵⁴ Consultation for Local Air Quality Management the how to guide, National Society for Clean Air.

We intend that ongoing stakeholder engagement will be an opportunity to meet to discuss the issues and feedback on the document and ongoing actions. As such the implementation of the AQAP will include the setting-up of a pan Chichester District Council/County Council officer and member-working group (the Air Quality Working Group). This will enable the implementation of the plan to be properly managed and monitored. Meetings with expert witnesses and members of the public will inform the working parties discussions (see Appendix 7 for draft terms of reference).

14.5 Implementation of the AQAP

Following adoption of the AQAP the Air Quality Working Group will meet. At that time the Group will discuss and agree appropriate terms of reference (draft terms of reference are at Appendix 7). The Group will approve and determine the priority of the air quality actions, timescales, approve a bid to DEFRA for air quality grant monies and oversee the ongoing evolution and development of the AQAP. Minutes of the Group will be sent to other relevant committees in both Chichester District Council and West Sussex County Council. At CDC the officer on the Group will also sit on the Climate Change Panel to maximise the possibility of augmenting air quality and climate change actions.

Given that the local air quality issues in Chichester are closely related to emissions from transport then actions contained herein are closely related to the Local Transport Plan 2 (LTP2). LTP2 will be replaced in 2011 and as such we are committed to review this document at that time. This should ensure that this document continues to maximise the synergies between air quality action planning and transport planning and reflects the evolving opportunities arising from new transport planning initiatives.

Air quality action achievements and successes will be reported through the statutory reporting mechanisms. This will be in the form of an annual report to DEFRA. In any case promotion of positive green initiatives, such as many of the actions in this document, is an important part of drip feeding the public consciousness on the societal changes needed to tackle the issues we face.

Meaningful community engagement is a vital factor if we are to achieve real change. The implementation of this plan will continue to build on the links to the community that we have built thus far through consulting the public in the early, pre-adoption, stages. Further detail in this regard will be worked up by the Air Quality Working Group.

Table 5: Actions impact table

Measure	Elements	AQ impact	Possible Flow reduction	Timing	Cost	Other benefits	Which LA	Rank
Traffic management								
	Variable Message Signing: Warn of poor air quality with travel options	High	Reduces traffic	2010	£15K per sign (hardware only) funding poss. through car park VMS project.	Can warn of congestion, suggest other mode use, and give info on parking or any useful public message. Could include 'Heavy Vehicles - use alternative route'.	WSCC	1
	MOVA traffic signal optimisation, suitable for pedestrian crossings, but check if benefits possible.	High	Reduces congestion/queuing not traffic flow	2008 to assess, implementation 2010	£12,000 approx	Reduces congestion on ring road, reduces CO2 emissions as well as NO2.	WSCC	1
	Speed limit changes - 20MPH at certain times may be considered as part of School	To be assessed	Will help implement travel plan - indirectly reducing school trips	Post 2010 - included in SSZ	Included in SSZ budget (warning signs per school site approx £7,000)	Improves road safety and encourages walking to school etc.	WSCC	3

	safety zone in Orchard St.							
	HGV and local direction signing investigated but not considered likely to help.						WSCC	
Park & Ride	One or more Park and Ride schemes, P&R is likely to have a significant impact on traffic levels on the A286 ring road and links to it and hence on all the AQMAs.	High	3 to 4% across City of Chichester (including the 2 AQMAs)	Public consultation on principle done 2008. Implementation after 2010, 2015 or later.	High, but not only for pollution mitigation.	Reduced congestion on A27 and in City Centre. Improved access to City & better for urban environment & economy. CO2 emissions reduction.	WSCC & CDC JOINTLY	3
Travel Plans								
	School travel plans: Prioritising implementation of these and safer routes to school plans in schools surrounding or within the management areas. Drop off point outside Orchard St. AQMA	High (30% of existing school car trips could be eliminated)	Flow reduction - to calculate	Started 2008 – in place 2009	Travel plan funding, once plan accredited, direct from DfT (£3,500 plus allocation for pupils). Other works from safer routes to school budget	Improves child health and safety at school gates, teaches travel awareness and counts as part of curriculum. Reduces congestion (will include School Safety Zones and educational initiatives.	WSCC	1

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	implemented for Central School							
	County and District Council Staff Travel Plans	High	Already in place poss. 1 to 3% further (daily ave.)	WSSC plan in place further measures 2009 onward. CDC plan to be reviewed by 2010.	WSSC plan revenue neutral. CDC plan to be reviewed.	As major local employers LA's have a large effect on peak hour travel and also on business travel. Good example to other employers. Benefits rest of West Sussex (business related & commuter trips). Significant CO ₂ reductions from authority vehicle use.	WSSC AND CDC	1
	Business Travel Plans							

	Green travel plans for single companies or whole business park/industrial estates (a car share group can be set up as required) Planning requirements in place for new development. (Both travel to work and 'in course of business' covered)	Moderate + (up to 30% reduction per business in car trips possible)	This is assessed as part of a traffic impact study if new or altered development related. Businesses self monitor, new development required to achieve targets as part of planning agreement.	Some in place. Plan numbers will be reported on 2008 onwards.	Businesses set these up & fund with basic guidance from WSCC. It is possible to save money and sets up costs are low.	Reduces congestion and emissions in the wider area, beyond AQMA boundaries. Benefits businesses. Potential long term benefit.	WSCC/ CDC (inc. use of sect 106 agreements)	1
	Hospital Travel Plan							
	St. Richards was developing a plan but this has been on hold until local NHS reorganisations have been decided on.	Mod/High	Will vary in AQMAs, important in the wider area.	May not be before 2010.	NHS self financing measures?	The Hospital is on a road that does not exceed the NO ₂ objective but AQMAs declared will be affected by related traffic.	NHS (+WSCC input)	1
	Residential travel plans, through planning	Moderate, reduces generated	Reduces impact of development	Requirements for plans already in	Development funded	Reduces congestion caused by	WSCC	1

	conditions	impact.		place (2008)		incremental traffic growth and CO2 emissions.		
Transport Awareness/ Travelwise/ Smarter Travel								
Esp. via local radio, bus back advertising etc.	A targeted intensive transport awareness campaign to help achieve modal shift to non-motorised and public transport trips for some journeys (walking & cycling routes in the City have already been improved) This will be part of the countywide initiative.	Moderate	5% may be achievable, although bigger reductions are possible in theory.	Start 2009 and build publicity though following years.	Under £10,000 per annum. Benefits are likely to be directly related to funding available. Bus back posters 1 st step	Encouraging people that regularly drive though the area to consider using other forms of transport for some journeys. Will generate increased awareness and reduced car travel across West Sussex. Backs up travel plan work by reaching other sections of the public and encouraging more walking, cycling and public transport use.	WSSCC	1
Public Transport								

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	Public transport infrastructure, including real time information at bus stops and mobile phone text messaging. Improved waiting facilities/shelters	Moderate to High	Will encourage modal shift - (see below) Est. 1%	Bus/Rail hub and improved waiting facilities 2009/10. SMS text service Scheme development Nov 2008. Matrix signs and linked SMS in place by 2010? (Depends on start date of development for these)	LTP funded text messaging-a charge to recoup cost. Development funded VMS if this agreed	Reducing congestion and CO2 emissions by attracting users of private cars	Bus Quality Partnership	1/2
	Opportunities for cleaner buses	Slight, but high profile publicity	Less emissions but no direct traffic reduction.	Underway – No.55 route all new cleaner vehicles. Will continue post 2010	Bus Co. & also development funded.	Bus use more attractive to potential users.	Bus Quality Partnership	1/2
	Opportunities for improved bus services	Moderate	Will encourage modal shift - (see below) Est. 1%	Underway - doubled major route No.60 frequency Oct 2008. Will continue past 2010. (Scale depends on start date of development)	Development funded if this agreed	Bus use more attractive to potential users.	Bus Quality Partnership	1

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	Concessionary bus pass scheme	Hlgh	Promotes journeys by bus over the private car. Potentially significant.	Ongoing	Significant	Enables non-car owners to access services.	CDC	1
	Real time travel information within developments e.g. common areas in flats	Moderate to High	Assess during plan, but has advantage of developing sustainable travel habits on moving in to property	Possible by 2010 (depends on start date of development). Scheme proposals under development.	Development funded if this agreed	Potential to develop a smarter travel lifestyle for occupants of new developments.	WSCC	2
	Car clubs, (long term)	Low to Moderate	Major reduction in personal emissions for users, take up the limiting factor	In place post 2010 (as likely to be related to development).	Development funded if this agreed	Will encourage consideration of lifestyle changes via publicity	WSCC/CDC	3
	Bus: infrastructure changes & improvements, frequency etc. Ensure cleaner vehicles used. Modal Shift/"Smart Choices"	High mode shift/ awareness value less on tech fix	Modal shift up to 11% & 2.5% traffic reduction estimated	Start 2007/08 on (full scheme 2010 on)	Mainly to be included in QBP budget	Improves public transport for everyone and makes it a more attractive alternative	Bus Quality Partnership	1
	Cleaner Taxis - proposed CDC licensing requirements	Mod/Low	Not known	Start 2008. In place 2009/10?	No cost to WSCC	Improved image for the industry	CDC	2

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	Rail use promotion – see Travelwise	Low but scope to improve	Base on rail user nos. at Chichester	Start 2009 Complete 2010	From Travelwise budget. See below.	Reduces congestion and emissions in the wider area, beyond AQMA boundaries	Southern/WSCC	1
Cycling and Walking	Cycling and walking initiatives, with health links, plus walking buses for schools. To include cycleway promotion, National Bike Week events, cycle to school and 'Bikeability'.	Moderate	Will particularly help with short more polluting trips, though traffic reduction low	Improved cycle & walking links in place. Travel awareness promotion to be done in 2009 – linked to Spring & Autumn events.	From Travelwise budget. See below.	Health benefits substantial, reduced congestion & CO2 due to switch from car use.	WSCC & CDC in partnership	1
Alternative Fuels	County Council vehicle fleet, cleaner fuel project - CDC use etc. WSCC LPG and Hybrid vehicles in place.	Emissions reduction from own vehicles high but overall affect modest.	Not measurable as traffic flow but reduces NO2 and CO2	In place now, expand during 2008 to 2010. Use of Ford Prison biofuel 2009.	LPG facilities in place, fuels cheaper although maintenance can be higher. Have made savings previously.	CO2 benefits for biodiesel used, NO2, PM10 & Co2 for LPG vehicles, electric vehicles being considered.	WSCC	1
	External promotion of both cleaner	Mod/Low, but improved	Not measurable as traffic flow but reduces pollutants	Underway (2008 & earlier), but	£2K	Benefits whole of WSCC area, reduces CO2	WSCC	1

	vehicles and fuels	availability & acceptance will help	and greenhouse gases/CO2	could do more. Ford Prison "chip fat" project in place, fuel by early 2009 (in Arun District)		emissions. Useful interim improvements until cleaner technologies fully available.		
	Personal travel planning scheme to be considered.	High for individuals but limited to the number that can be assisted	Low, but could help raise awareness more widely and be a long term improvement	Scheme running by end 2009.	Potentially high, decision on funding available required	Those that find that alternatives to private car use are of value to them may encourage more use of other modes by being 'ambassadors'.	WSCC	2
County wide Public Car Share Database (promote locally)								
	Free car share service to public plus special groups for local businesses, industrial estates, teachers, hospital staff, and local authorities. Expand in	Moderate	Assess during plan	System already in place. Establish usage in 2009.	Already in place, promote through TravelWise.	Improves accessibility for disadvantaged groups as well. Publicity will have impact on the wider area as well.	WSCC	1

	regard to local developments coming forward.							
Enforcement/ Planning Guidance								
	Enforce the powers optionally available to local authorities on penalties for excessive vehicle engine idling. Possibility of engine idling enforcement (linked to parking regime),	Low, but high awareness value	Assess during plan	Late 2009 if good experience with Shoreham pilot.	Included in LAPE costs	Local enforcement will have an impact on encouraging better vehicle maintenance and hence fewer emissions in the wider area as this will target "gross polluters"	WSCC	1
Cleaner vehicle parking	Differential parking charging for cleaner vehicles, off street (CDC) and on street (WSCC).	Low initially	Assess during plan	By end 2009	Included in LAPE costs	Encourages purchase of cleaner vehicles which will be used county wide & beyond, as well as locally	Chichester DC and WSCC	1
	Improvements to taxi stock,	Should reduce gross polluters	Emission rather than flow reduction.	2009	Will be a licensing requirement		CDC	2

Land Use Planning	LDF policy, supplementary planning guidance, highway authority guidance on air quality assessment & mitigation. Infrastructure changes, e.g. Northgate Gyratory may be implemented through agreements. Low emissions strategy. (Including consideration of the impact of current development proposals),	High, but potentially negative if AQ issues overruled	Potential to make a significant difference, but developments will still generate extra traffic	WSCC guidance in place. CDC policy work being progressed by 2009.	No direct cost – risk of extra legal expenses	Encourage more sustainable development proposals.	CDC/WSCC	1
	Planning and S106 agreements, Community Infrastructure Levy (CIL)	High	Case by case	2008 on. Several agreements in negotiation	Developer contributions to fund	Encourage more sustainable development proposals.	WSCC/CDC	1

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	Minor road works to smooth traffic flow, (investigate if any possible),	Case by case	Case by case	Post 2010	Largely from above contributions	Encourage more sustainable development proposals.	WSCC/CDC	3
	Possibility of a low emission zone or similar, (very unlikely without charging),	High	Indirectly reduces	Post 2010	High	Less congestion, more attractive urban environment. Significant CO2 reduction	WSCC	3
	Possibility of congestion charging, (long term), see below.	High	Substantial reduction	Post 2010	High	Less congestion, more attractive urban environment. Significant CO2 reduction	WSCC	3
Pollution Mitigation & Awareness	Forecasting air pollution airALERT & airalert - 4-Schools to assist and inform vulnerable people	Reduction of existing health impact	Indirectly helps as linked to school travel plans as raises awareness.	Started 2007. Relaunched May 2008 for year round scheme. This to be continued.	Sussex Air pilot funded, looking for sponsor. (Private and poss. NHS)	Intended to help mitigate existing air quality effects but helps raise profile of air quality and plans to improve it. Helps individuals & reduces hospital	WSCC, CDC & Sussex Air (SAQP)	1

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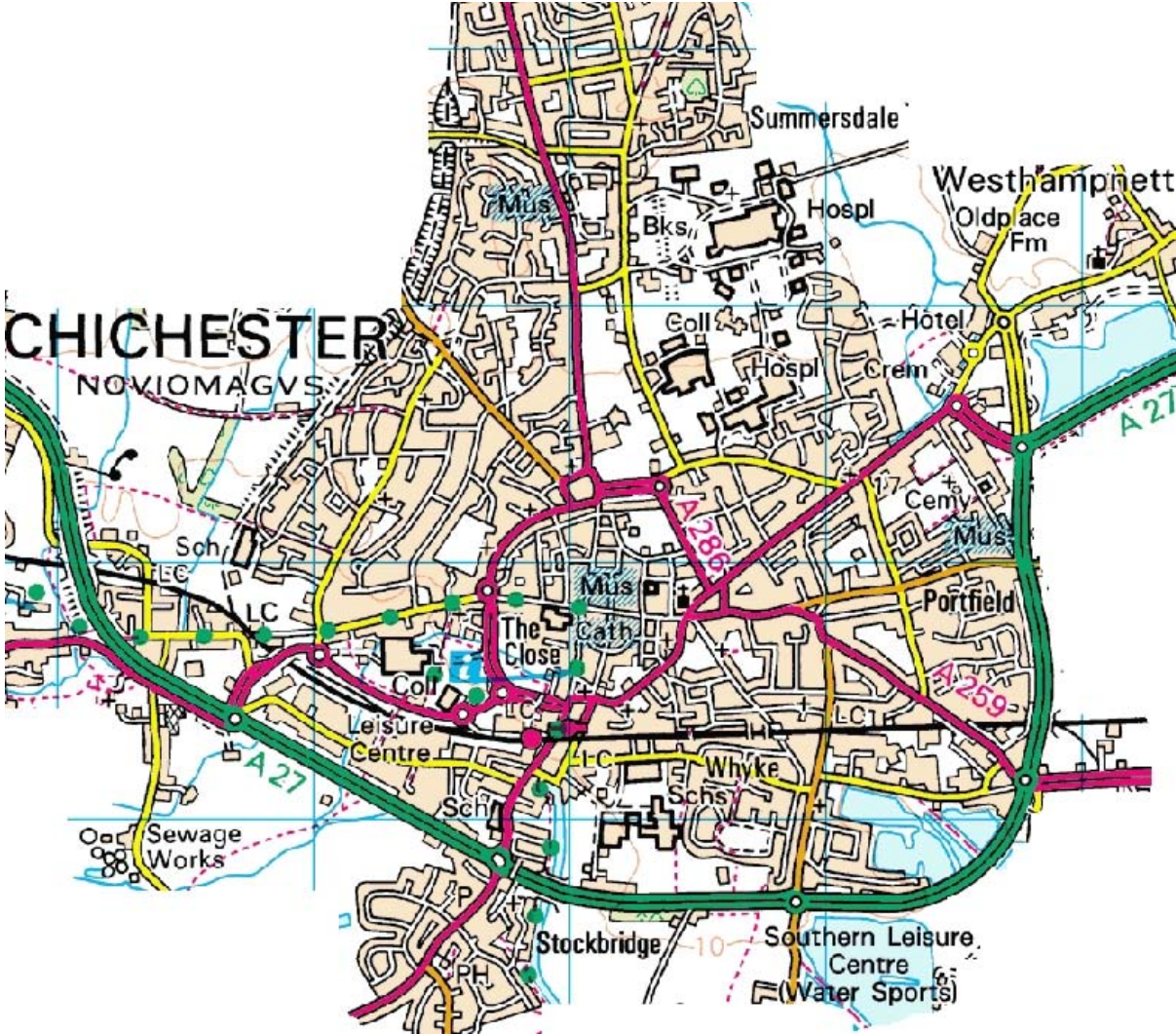
						admissions and NHS costs.		
On-going monitoring of traffic and air pollutants								
	Use for publicity and to monitor progress	Essential, but may also have some + impact	N/A on own but display of figures may assist mode shift	2006 ongoing. Traffic counters 2006 No _x real time in place (by CDC) Oct 2008.	Capital (05/06) £12000 ongoing £7,000 AQ & Traffic.	Backs up Travelwise work, will help focus on best action plan/strategy elements or in modifying these.	WSSC and CDC	1
A27 Chichester Bypass Improvements	Changes to the A27/Stockbridge roundabout junction are proposed as part of a larger scheme. HA however gives mitigation of AQMA here low priority.	High	Will reduce pollution due to queuing at Stockbridge AQMA	Post 2010. Predicted in place by 2018	High - (£M's)	Reduces use of less suitable routes and hence reduces risk of accidents. Will include and assist with P&R schemes.	Highways Agency	3

Measures considered but not currently being progressed; Low emission zone and congestion charging (for the present). HGV 'traditional' signing

N.B. These measures are looking at the Chichester City area and environs as a whole although 3 AQMAs are involved, the A27 Stockbridge Roundabout, Orchard St and St Pancras in the City of Chichester.

DATE 6/11/08

Appendix 1: Map Of Chichester City Showing Major And Minor Road Network



Appendix 2: West Sussex Local Transport Plan 2006 – 2016 Countywide Air Quality Strategy Actions

The above Strategy embedded within the Local Transport Plan 2 states that:

We intend to

Continue to work closely with all councils, including those that are neighbours to West Sussex, and with the primary health care trusts, the Environment Agency, Highways Agency, Sussex and Brighton Universities and the Sussex Air Quality Steering Group;

Assist district councils and surrounding counties in their air quality assessments;

Take full allowance of the air quality effects that could result from transport schemes;

Promote good practice for larger organisations and businesses by running a fleet of vehicles that pollute the atmosphere as little as possible. Biofuel LPG vehicles in the first instance, with consideration of all alternatives, taking account of practicality, availability and cost;

Promote the provision of alternative fuels on garage forecourts across West Sussex, primarily LPG but also CNG, LNG, and biofuels. Look at provision of public electric recharging points if electric vehicle use is to be promoted;

Promote fuel-efficient practises in haulage companies and by drivers through formal or informal freight partnerships (See plan section on freight);

Seek developer contributions towards air pollution control measures where these may be needed. Developers may often be required to produce an air quality impact assessment as well as traffic impact assessment;

Assess our own major schemes on air quality and climate change (CO₂) impacts in line with our air quality strategy, through our sustainability framework and use of government guidance (e.g. NATA);

Include enforcement of excessive engine idling legislation through new decriminalised parking arrangements in each major West Sussex town. Engine emission testing and emissions standards enforcement will be considered in any Air Quality Management Areas that are declared within West Sussex during the life of the 2nd West Sussex Transport Plan;

Continue with our air quality forecasting and warning system to inform the public and improve their awareness of air quality issues and less polluting means of travel;

Consider use of Low Emission Zones (LEZs) as part of our developing policies on environmental access controls for town centres, which will be geared to local circumstances,;

Implement parking incentives for alternatively fuelled vehicles of all sizes, (4,3 or 2 wheeled) electric vehicles and other environmentally friendly vehicles. (See also freight & economy strategy for cleaner HGV's);

Work with the National Society for Clean Air (NSCA), within SAQSG and with our French partners to understand more about the mechanics of Ozone pollution and what we can do about it. This is a particular problem for SE England & Northern France. (ARMO Air Rives Manche Ozone project);

Continue to include "Air Awareness" as part of the County Travelwise and Travel Plan campaign in order to improve public awareness of transport issues and how they are linked to the reduction of pollution and climate change.

Address specific public concerns, by continued provision of accurate information via our website and other media;

Amass air quality data from all sources, local and national in order to monitor the quality of the county's air;

Produce proposals to manage traffic in areas where air pollutants fail to meet government targets and consult the public on these. (See AQMA section);

Ensure that all other strategies take account of air quality and implementation of these avoid negative impacts on local pollution levels and seek to enhance it where possible;

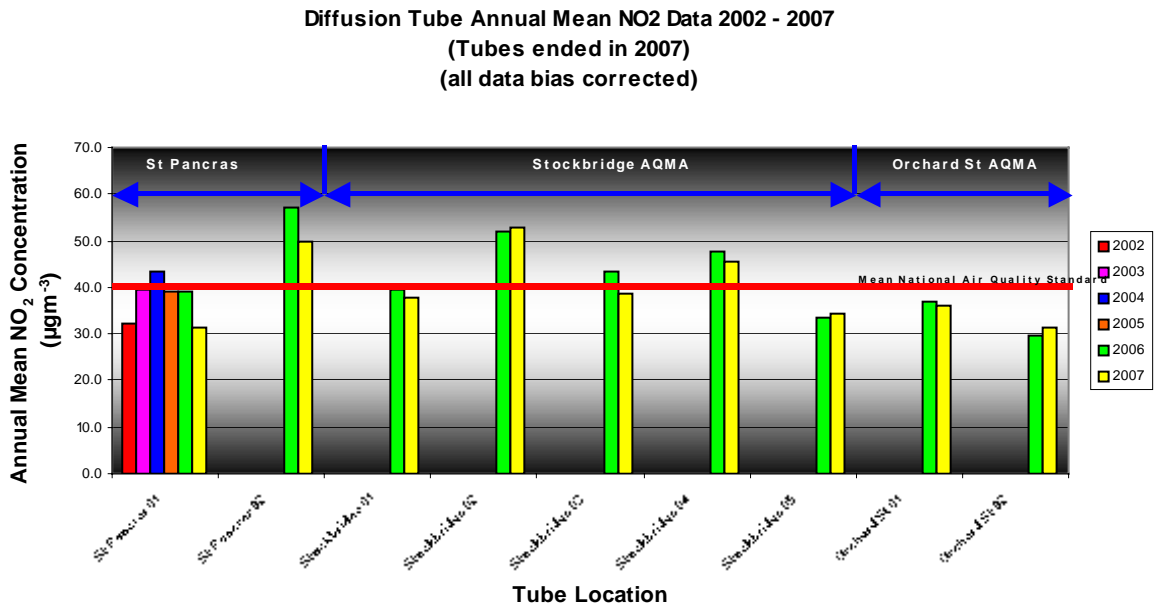
Ensure contracts with contractors and other organisations working for the County Council require that these organisations follow County Council policy on this issue. A new corporate contract sustainability/environmental screening system is now in operation;

Design, test and implement innovative methods of traffic signing and management to alleviate air pollution problems at specific sites.

Measuring the benefits of our strategic countywide strategy:

Reduction in traffic growth, congestion and other indicators of progress in achieving our objectives are set out in appendix 5. Monitoring of air quality area action plans will give more detailed information on progress as pollution levels and traffic flows need to be measured in detail in order to make sure pollution concentrations are falling. However, it is not practical to carry out such intensive monitoring across the whole county. We can however estimate pollution levels using national data and our own (SAQSG) pollution emissions inventory.

Appendix 3: Diffusion Tube Annual Mean Data 2002 – 2007 (AQMA relevant data only)



Appendix 4: Chichester District Council Climate Change Strategy 2008 – 2013

Section 1 – Objectives

To raise awareness amongst individuals and organisations about climate change impacts, adaptation measures and greenhouse gas reduction measures.

To reduce greenhouse gas emissions through energy conservation and use of renewable energy, and to reduce water use, in the Council's own activities.

To use the Council's powers and influence to work with other organisations to reduce greenhouse gas emissions and water use in the District as a whole.

To work with other organisations in the District to encourage others to take measures in order to adapt to predicted climate change.

5. To recognise and reward good climate change practice in the District, and to promote such examples to others. (new objective)

Ref	Action	Target (if any)	Timescale	Any new resources needed?	Suggested lead departments and officers	Relates to...
Corporate Policy, Issues and Targets						
P2	Set an energy reduction target for CDC operations (buildings and transport fuel)	15% saving in energy used compared to 2003-04. (Current performance for buildings only is a 4% saving by 2006-07)	By 2013	Carbon Management Action Plan (CMAP) capital implementation, fleet management initiatives. Invest to save fund	Employment and Prosperity/ Chichester Contract Services (CCS) Paul Over	NI 185

CDC Corporate Energy Use						
C7	Develop a staff travel plan including a review of Council transport requirements, in order to incentivise reduced business fuel use and mileage.	To be set as part of any Staff Travel Plan review	By 2010	Yes, considerable officer time would be required both centrally by ESU and also across the authority.	ESU/Corporate Policy/Health and Community Wellbeing Tom Day Stephen Kane Simon Ballard	NI 194
C9	Set Council target for reduction of business fuel use in Council vehicles. This could include driver training, route restructuring and more fuel-efficient vehicles as part of fleet renewal programme.	5-10% in average MPG of the fleet compared to 2007/08 baseline.	By the end of 2013	Should be made part of the 'invest-to-save' mechanism.	CMT / Environment and Greener Living Rod Darton	NI 185, NI 194
Transport and Air Quality						
T1	Improve off-road cycle networks	2 new routes	2015	WSSC and S106 funding	Design and Implementation / WSSC Lone Le Vay	NI 186
T2	Working with WSSC write and implement an Air Quality Action Plan (AQAP)	To implement the Air Quality Action Plan.	AQAP in place by end 2008	Once the AQAP is delivered then a bid for DEFRA grant monies can be made.	Health and Community Wellbeing / WSSC Simon Ballard	Statutory requirement NI 186

**Appendix 5: Local Transport Plan Contribution To Air Quality Improvements
(Other Than Specific Air Quality Strategy/Air Quality Action Plan actions).**

Encourage higher levels of walking & cycling
Reduce speed limits through villages
Improving air quality through reducing congestion & promoting sustainable transport choices
(Achievement of AQ standards – see AQ Strategy)
Promotion (internally & externally) of cleaner fuels
Promotion of sustainable travel through school and business travel plans
(encouraging walking, cycling, public transport use and car sharing)
Health promotion & links with “Healthy Schools” programme
Provision of transport to access health facilities
(Main 2006 LTP p16)

Developing pedestrian routes that are more pleasant & safer
Cycle schemes
Walking schemes & better pedestrian access to facilities etc.
Safer routes to school
Maximise environmental contributions from schemes (through design etc.)
General travel awareness schemes (Travelwise)
Improve accessibility for people to local services, rail stations, bus stations & bus stops
Encourage use of local facilities such as shops & post offices especially in rural & suburban locations
Reduce the need to travel and transport goods by encouraging the purchase of local products
(Main LTP p82)

Gatwick Transport Strategy
Demand Management measures – town centres
Increasing travel choice
Efficient use of the transport network e.g. Intelligent Transport Systems (VMS etc.)
Traffic information centre (inc. real time info)
Freight strategy - delivery & transport innovations
Coastal Expressway and enlarged Crawley Fastway
Parking Strategies and controls
Additional bus and rail services
Demand responsive bus & taxi services expanded
Accessibility by non car modes
Accessibility for walkers cyclists/horse riders directly from built up areas avoiding need to travel first.
Personal journey planning & marketing
Motorcycling (PTW) policy on reducing congestion – cleaner PTWS coming forward
Safer roads, safer routes to school, pedestrian & cycle training at schools (improves confidence in walking/cycling), speed management, separation of pedestrian from road traffic (inc. other non parallel routes), traffic management benefiting non polluting modes
Accessibility and disadvantaged communities (air quality traffic congestion and road safety are closely linked to this)

Congestion reduction on major routes and town centres (measured - see targets LTP2, LTP4, and LTP6 on area wide and urban traffic in flow and mode share of journeys to school and work)

Rights of way improvement plan. (Improvements that will allow easy attractive access to local destinations by foot in urban or rural areas.

Integrated Transport Measures which will benefit Air Quality in West Sussex (*from LTP table 7.10*)

Minor Network Efficiency Schemes (indirectly)
Shoreham Harbour Access Schemes (minor)
Pupil concessionary fare scheme (indirectly)
Pilot School Bus Scheme (indirectly)
All schools to have stage 1 Travel Plan
School travel advisory scheme (indirectly)
Purchase of vehicles (indirectly)
Traffic & air quality data collection
Coastal Expressway
Public transport marketing
Personalised travel planning
Travel plan development and promotion
School travelwise programme
AQMA remedial schemes (action plans – set up & development)
AQMA actions – running and maintenance

Other measures which could make a difference (*in table - appendix 7*)

Environmental Access Control (Chichester initially)
Decriminalised Parking Enforcement Programme
Car park VMS – Chichester (reduces drive round pollution)
Rail improvements
Horsham Park & Ride improvements
Chichester Park & Ride
Worthing P&R
Traffic & information control centre
Real time bus information
Bus priority measures (Worthing, Chichester)
Bus/Rail major interchange improvements
Completion of major cycle networks (Removal of small gaps to produce through routes increases cycle use significantly & encourages modal shift)
Haywards Heath, Worthing & Shoreham town centre pedestrian enhancements (plus other locations), Also footway, lighting and pedestrian signing improvements all of which will encourage walking and modal shift & reduced pollution.
Accessibility improvements to existing non-private car mode schemes.

Appendix 6: Groups Consulted on the draft AQAP

Method	Date of Action
Present draft report at Exec Board	8 th July 2008
Put draft report on Virtual Members Room and EP website	15 th July 2008
Post report to Statutory Consultees; WSCC, HA, DEFRA, Chichester City Council	15 th July 2008
Email to neighbouring authorities, SAQP members,	15 th July 2008
Post to local groups; Chichester Transition Town, Chichester Society, Chichester Chamber of Commerce, PEP publication,	15 th July 2008
Post to residents' groups; Orchard Street and Old Somers Town, St Pancras and Stockbridge/Southgate	15 th July 2008
Deliver letter to all residents and businesses within each AQMA	15 th July 2008
Meeting with Chichester Residents Association Coordinating Group (CRACG)	8 th October 2008
Initial meeting with Transition Chichester	11 th November 2008
Set up first meeting of Air Quality Working Group	After Executive Board 2 nd December 2008
Report responses to Exec Board	2 nd December 08

Appendix 7: The Air Quality Working Group – Draft terms of reference⁵⁵

The following is an overview of the structure and activities of the Working Group.

Standing members of the group will include

An elected member of Chichester District Council (CDC) and West Sussex County Council (WSSC).

An officer from CDC (air quality specialist) and WSSC (air quality and transport planning specialist).

Chairperson

The Group will have a rotating chairperson being one of the elected members.

Meeting Format

Frequency: Meet every half year (or more often as issues demand).

Standing items on the agenda will include:

Apologies for absence.

Minutes from the last meeting.

Reviewing progress on delivery of Actions according to an agreed timetable.

Review the AQAP progress report (every other meeting).

Minutes will be produced by one of the officers present. Minutes will include actions clearly assigned to individuals for actioning.

Agree and prioritise delivery plans for air quality actions.

Continue to develop and evolve the AQAP, e.g. through the implementation of best practice ideas.

Call in 'expert witnesses' to inform discussions and ongoing evolution of the AQAP.

Be in communication with local residents groups.

The Group may wish to consider its terms of reference during the initial meeting.

Implementing priorities

The group has been established in order to encourage implementation of the action plan in the two authorities and recommend that measures are taken forward and funded, particularly in regard to section 106 or Community Infrastructure Levy allocation in the light of the priorities for action and at a level appropriate to the scale of problems identified.

Engaging the community

Officer members of the group will continue the contacts made with the residents groups (initiated in the development of the AQAP).

Develop community engagement initiatives and publicity related material.

Minutes

Minutes will be produced by one of the attending officers and circulated in draft form by email for comment.

Previous minutes will be agreed as correct by the following meeting.

Minutes will note action points and who will take these forward.

⁵⁵ Subject to discussion, possible amendment and agreement when the Working Group first meets.

Minutes will be sent to the Chichester District Council Environmental Review Forum, Climate Change Panel, the Healthy Chichester Partnership and to any West Sussex County Council body deemed appropriate.

Appendix 8: Socio-economic impact assessment of proposed measures

Measure	Elements	Socio-economic benefits
Traffic management		
	Variable Message Signing: Warn of poor air quality with travel options.	Minimise hunting for car parks saving money and travel time. Heighten public awareness of pollution issues through making them more immediately apparent. Help people choose cleaner transport options.
	MOVA traffic signal optimisation, suitable for pedestrian crossings, but check if benefits possible.	Optimise and smooth traffic flow. Minimising pollution and fuel consumption. Lessening journey delay, related costs and driver stress.
	Speed limit changes – 20mph at certain times may be considered as part of school safety zone in Orchard St.	Enhance the feeling of security for pedestrians and cyclists. Promotes the possibility of modal shift growth in the town and signposts to the community the change needed. Deprioritises the car over more sustainable forms of transport. Improves safety for parents & children crossing the road & makes it more likely that walking to school will be a preferred option.
	HGV and local direction signing investigated but not considered likely to help (traditional metal signage).	VMS message better than fixed signage due to local lorries not obeying fixed signs and the use of Satellite Navigation overriding fixed sign directions. Aim would be to reduce perception/actual risk of physical threat and pollution from large vehicles to residents, pedestrians & cyclists.
Park & Ride	One or more Park and Ride schemes, P&R is likely to have a significant impact on traffic levels on the A286 ring road and links to it and hence on all the AQMAs.	Will remove traffic from the town centre. This in turn should improve the environment in the town centre to enhance the possibility of accelerated uptake of more sustainable forms of transport. Better environment (less noise, fumes, visual intrusion), will improve shopping environment and help improve local economy. Easy access to town centre by non-car modes much improved.
Travel Plans		
	School travel plans: Prioritising implementation of these and safer routes to school plans in schools surrounding or within the	Could significantly reduce traffic levels and create a sense of social change. This in turn should embed better travel habits for children and adults alike pushing modal shift uptake. Possibility for good PR here for schools showing best practice.

	management areas. Drop off point outside Orchard St. AQMA in place for Central School.	
	County and District Council Staff Travel Plans	Initiatives delivered through the travel plans should let both Councils lead the community by example. This should reduce peak hour traffic, through the AQMAs especially, and enhance modal shift. Helps to breakdown existing ingrained travel habits.
	Business Travel Plans	
	Green travel plans for single companies or whole business park/industrial estates (a car share group can be set up as required) Planning requirements in place for new development. (Both travel to work and 'in course of business' covered).	Enhance modal shift and sustainable travel modes across the business community. It has been shown that businesses can save money in the case of business travel and potential essential skilled employees who would otherwise not be able to work at some business locations could be employed because of car share and other initiatives as part of plans.
	Hospital Travel Plan	
	St. Richards was developing a plan but this has been on hold until local NHS reorganisations have been decided on.	St Richards hospital is a major employer in Chichester. Maximising the uptake of modal shift will reduce the car based traffic and parking pressures associated with St Richards and help staff, outpatients, visitors and others to travel there sustainably, (An important aspect is the need for patients to arrive for outpatient appointments in time).
	Residential travel plans, through planning conditions.	Will help to mitigate against the impact of traffic growth through development. Will also help to persons moving to Chichester to develop sustainable travel behaviour at the outset.
Transport Awareness/ Travelwise/ Smarter Travel		

esp. via local radio, bus back advertising etc.	A targeted intensive transport awareness campaign to help achieve modal shift to non-motorised and public transport trips for some journeys (walking & cycling routes in the City have already been improved) This will be part of the countywide initiative.	Will continue to promote the message to the public that some journeys can be made by modes other than the car without inconvenience and to promote healthy transport options such as walking and cycling. Raise awareness of the benefits for all in travelling more sustainably.
Public Transport		
	Public transport infrastructure, including real time information at bus stops	Will make bus travel more attractive and help increase the number of persons travelling by bus.
	Opportunities for cleaner buses	Will directly reduce air pollution and lead to opportunities for positive PR.
	Opportunities for improved bus services	Will make bus travel more attractive and help increase the number of persons travelling by bus.
	Real time travel information within developments e.g. common areas in flats	Will make bus travel more attractive and help increase the number of persons travelling by bus.
	Car clubs, (long term)	Will allow car-ownership to be reduced whilst still allowing access to cars when needed.
	Bus: infrastructure changes & improvements, frequency etc. Ensure cleaner vehicles used. Modal Shift/”Smart Choices”	Will make bus travel more attractive and help increase the number of persons travelling by bus.
	Cleaner Taxis - proposed CDC licensing requirements	Shows that CDC takes green issues seriously at all levels, pushing for better environmental standards through licensing. Economic impacts on drivers require careful consideration before proceeding.
	Rail use promotion – see Travelwise	Part of promotion of sustainable transport for work and leisure use. See above plus initiatives such as walk by rail for leisure purposes

	Travelwise	rail for leisure purposes.
Cycling and Walking	Cycling and walking initiatives, with health links, plus walking buses for schools. To include cycleway promotion, National Bike Week events, cycle to school and 'Bikeability'.	Will help to emphasise the cross-benefits of green travel through tackling obesity and promoting exercise.
Alternative Fuels	County Council vehicle fleet, cleaner fuel project and external promotion of cleaner fuels, CDC use etc	Good PR opportunities for promoting new technologies that cut pollution. Care in CO ₂ reduction policy implementation needed to ensure bio-fuels are truly sustainable (e.g. used vegetable oil) and also provide air quality benefits.
	External promotion of both cleaner vehicles and fuels	Encourages greater cleaner option awareness choices for those planning to buy new or second-hand vehicles (companies or individuals, and with the potential to save money).Has potential impact on overall vehicle fleet emissions in the wider area.
	Personal travel planning scheme to be considered.	This is shown to be a powerful way to influence travel behaviour and reduce unnecessary journeys.
County wide Public Car Share Database (promote locally)		
	Free car share service to public plus special groups for local businesses, industrial estates, teachers, hospital staff, and local authorities. Expand in regard to local developments coming forward.	A valuable tool for all and able to reduce inequalities in transport access for those unable to access jobs and services without a personal vehicle. Good PR opportunity to enhance car sharing and hence reduce the number of cars on the road.
Enforcement/ Planning Guidance		

	Enforce the powers optionally available to local authorities on penalties for excessive vehicle engine idling. Possibility of engine idling enforcement (linked to parking regime),	Protects residents and especially vulnerable ones (with existing health problems) from unnecessary pollution that could affect their health.
Cleaner vehicle parking	Differential parking charging for cleaner vehicles,	Encourages greener car ownership and increases the green car market.
	Improvements to taxi stock.	As above in this table.
Land Use Planning	LDF policy, discussions on possible supplementary planning guidance, highway authority guidance on air quality assessment & mitigation. Infrastructure changes, e.g. Northgate Gyratory may be implemented though some time off. Low emissions strategy. (Including consideration of the impact of current development proposals).	Should help ensure that air quality is a material consideration for all relevant planning applications. Will help to shape travel behaviour related to specific developments.
	Planning and S106 agreements	Increased monies for environmental initiatives.
	Minor road works to smooth traffic flow, (investigate if any possible),	Reduces journey times and fuel usage (unlikely to be significant). Would also be used to improve safety and reduce risk of accidents, e.g. through reduced traffic speeds.
	Possibility of a low emission zone or similar,	Would aid in managing traffic through demand management measures. Could reduce traffic volumes through the AQMAs and more widely. In turn this might

	(very unlikely without charging).	enhance the possibility of walking and cycling in the town. Would enhance the town environment for shoppers and visitors, making it more attractive and increase trade as a result.
	Possibility of congestion charging, (long term), see below.	Would aid in managing traffic through demand management measures. Could reduce traffic volumes through the AQMAs and more widely. In turn this might enhance the possibility of walking and cycling in the town. Would enhance the town environment for shoppers and visitors, making it more attractive and increase trade as a result.
Pollution Mitigation & Awareness	Forecasting air pollution airALERT & airalert-4-Schools to assist and inform vulnerable people.	Helps those with respiratory conditions who are vulnerable to the impacts of air pollution better manage their condition (through behaviour modification). Will reduce hospital admissions and help people and schools make informed choices in their everyday lives and activities.
On-going monitoring of traffic and air pollutants		
	Use for publicity and to monitor progress	Helps to raise the profile of air pollution and the reasons why we are implementing the actions in the Plan.
A27 Chichester Bypass Improvements	Changes to the A27/Stockbridge roundabout junction are proposed as part of a larger scheme. HA however gives mitigation of AQMA here low priority.	Reduces local congestion and pollution and allows for measures such as out of town Park and Ride to be implemented effectively. Helps deal with the conflict between local traffic flows and long distance strategic traffic. Augments benefits of County and District, measures substantially.

Appendix 2

Consultation responses

The following responses are a precis of the responses that have been received. A full copy of the consultation responses is available on request.

Residents Groups' responses

- Welcome the initiatives being taken to address air quality problems in the District and strongly supports them.
- Welcomes the installation of the forthcoming realtime monitoring station on Orchard Street.
- Notes the dust problem at the two in-town AQMA's in addition to the nitrogen dioxide issues.
- Expresses concerns regarding projected increases in traffic.
- Strongly supports Park and Ride.
- Suggests redesign of road layout and priority to help traffic flow better from Orchard Street onto Northgate.
- Expresses the opinion that the benefits of a northern bypass are greatly underestimated.
- Notes the possibility of the A27 improvements exacerbating traffic volumes on the western sector of the ring road.
- Expresses strong support for Park and Ride as part of the solution.
- Suggests that vehicle routing agreements are made through the planning process.
- Suggests review and improvements in the way S106 contributions are managed.
- Supports engine idling enforcement and real-time information for bus-stops and the level crossings.
- Does not support discounted parking tickets or season tickets.
- Supports intelligent traffic lights.
- Supports school drop-off points.
- Supports cycling promotion.
- Recommends publicising some of the facts in the AQAP.

DEFRA response

- DEFRA congratulate CDC on 'a very thorough plan' and state that 'with minor revisions/additions to the plan as it progresses to the final version, it could potentially be recommended as an example of best practice'.
- Requested that more detail is added to define the activities of the Air Quality Working Party.
- Requested that the Actions proposed in the Plan are broken down into component sub-actions with timescales.
- Requested that Actions are assessed for their socio-economic impacts.
- Requested that each action, in as far as is possible, has a definable quantifiable indicator. Reporting of progress should be against indicators.
- Requested more detail on consultation activities.

- Requested an implementation plan.
- Concluded that 'CDC is advised to have regard to and act on the comments above in order to have an excellent action plan'.

CDC Councillors response

- Noted as a well thought out Strategy, though air quality objectives are unlikely to be met by 2010.
- Noted that the St Richards Hospital lack of a Travel Plan is disappointing.
- CDC's Travel Plan by implication requires review.
- Support for car clubs.
- Support for Park and Ride.
- Support for the WSCC/CDC officer/member air quality working group.
- Concern that much of the plan is deliverable by WSCC this leaves CDC vulnerable on delivery of the actions in the plan.
- Concern at the dismissal of some potential solutions as they have not been thought of in the round.

WSCC response

WSCC gave a detailed response which, in part, was in response to a letter from John Kingdon (Director of Community Health & Wellbeing) to Deborah Urquhart (Cabinet Member for Environment and Economy).

- WSCC positively support the actions in the document.
- WSCC agree and commit to the formation of an air quality working group. The Group will have member and officer representation from WSCC and CDC.
- Note that Park and Ride would reduce peak hour flows of traffic by 3%.
- Supports the proposed push for greener hackney carriages and private hire vehicles.
- Notes that there is no additional funding available through the LTP.
- Thanks CDC for the close working partnership in producing this document.

Highways Agency (HA) response

- The HA were consulted as a statutory consultee and despite an email chasing their response did not comment on the plan. A verbal update will be given to the Board should a response be received in the interim.

Climate Change Panel response

The Panel discussed the draft AQAP at its meeting of the 3rd September 2008. The following is a summary the comments received (as noted in the minutes of the meeting):

- That the emerging car parking strategy must have regard to and enhance the objectives of both the AQAP and Climate Change Strategy. A member of CC Panel will now attend the Chichester Parking Forum.
- That a close working relationship with WSCC is imperative to ensure that the AQAP is taken forwards.

Environment Review Forum

The Forum discussed the draft AQAP at its meeting of the 1st September 2008 and the following is a summary of the comments made:

- Consider the option of introducing a congestion charge for Chichester city coupled with park and ride facilities around the city.
- The development and use of cycle ways for transport rather than solely for recreation.
- Deploy information signs at the city's level crossings advising drivers about the likely length of their wait and the fuel cost of idling engines, thereby encouraging them to turn off their engines.
- Consider the feasibility of cycle-taxi services, which would be attractive to students, and cycle-banks as used abroad.
- Create public transport pick-up points for major Goodwood events at extra locations to the existing one at Chichester railway station e.g. Petersfield to help reduce congestion on the A286.

CDC Internal Departments' responses

Consultation comments were received from Planning Policy, Environmental Strategy Unit and Corporate Policy.

Many of the comments relate to rewording relevant parts of the document though the meaning of the document remains substantially as for the draft version.

- Notes that there are direct linkages between the AQAP, the Climate Change Strategy and the Parking Strategy. Furthermore that it is necessary for these plans to complement and have regard to the objectives of one another.
- Notes the predicted increase in traffic flows.
- Notes that hard changes to roads could result in improved flow.
- Recommends the development of a long-term vision for Chichester City regarding integrated transport.
- Suggests the review of traffic light timing to facilitate better traffic flow.
- Suggests that schools in and around the AQMAs take greater responsibility in ensuring higher rates of car sharing, cycling and walking.
- Supports the use of variable message signing.
- Suggests a levy on car parking ticket prices to fund transport related initiatives.
- Suggests the use of number plate recognition technology to facilitate variable parking charges in relation to CO2 emissions of vehicles.
- Supports and welcomes the AQAP.

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