



Colchester Borough Council

Local Air Quality Management –
Draft Air Quality Action Plan

September 2007



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EXECUTIVE SUMMARY

This Air Quality Action Plan is the culmination of the second round of local air quality review and assessment for Colchester Borough Council (CBC). The process of Local Air Quality Management (LAQM) review and assessment has been set down in Part IV of the Environment Act 1995, which forms part of the Government's response to European Directives on Air Quality to which the UK Air Quality Strategy responds.

Between 1999 and 2002, CBC undertook its first round of review and assessment of air quality. The first round assessments concluded that Air Quality Objectives would be met at all locations except a 'street canyon' location in Mersea Road where there were predicted exceedences of the annual mean Objective for nitrogen dioxide (NO₂). An Air Quality Management Area (AQMA) was declared in May 2001 along the length of this street canyon and an Air Quality Action Plan is in place.

The first phase of the second round of review and assessment, the Updating and Screening Assessment (USA), was completed in October 2003 and this provided an update with respect to air quality issues within the Borough of Colchester. The USA concluded that a detailed assessment was required for nitrogen dioxide (NO₂) due to road traffic emissions from the A12 London Road at Marks Tey, Cowdray Avenue and Brook Street. The second round of review and assessment Detailed Assessment (2004) concluded that there was a risk of exceedences of the NO₂ annual mean Objective at the nearest receptors to Brook Street. CBC has declared an AQMA along Brook Street in January 2006 and road traffic emissions were identified as the major source of nitrogen oxides (NO_x) emissions in the AQMA.

Brook Street is currently an important strategic link in the Essex Road Hierarchy, and will remain so for the foreseeable future. It already operates above capacity at certain times of the day and, this pressure will only intensify with an increase in traffic flows in the area due to forthcoming development. Achieving the necessary reductions in traffic on this street to achieve the NO₂ annual mean objective/EU Limit value by 2010 is therefore considered challenging. The Further Assessment indicated that in 2010, without local intervention, exceedences were still likely to occur at the northern (street canyon) section of Brook Street.

In compiling this Action Plan, Government guidance LAQM.PG (03) and guidance from the National Society for Clean Air has been referred to, alongside guidance provided by the Department for Environment, Food and Rural Affairs through its Air Quality Action Plan Help Desk.

The aim of this Action Plan is to identify how CBC will use its existing powers and work together with other organisations in pursuit of the annual mean Air Quality Objective for nitrogen dioxide. Measures are proposed to improve air quality both within the AQMA and throughout the Borough as a whole.

Essex County Council (ECC) is responsible for the traffic management of Brook Street and as such has an important role in the consideration of direct actions proposed for the AQMA in order to reduce road traffic emissions. CBC will work together with the relevant transport authority, ECC, and other relevant stakeholders to improve air quality within the AQMA and throughout the Borough.

This is the second draft Action Plan to be consulted on, following comments from consultees on the first draft. The results of the previous consultation exercise have led to the inclusion of new Direct Measures to be investigated, which are considered

as having the potential to lead to significant air quality improvements. Other measures which are expected to achieve lesser, more indirect measures have been incorporated into the General Measures section.

The direct measures proposed for the Brook Street AQMA include:

- Investigate traffic management improvements for Brook Street;
- Investigate the use of Traffic Regulation Orders in Brook Street;
- Investigate the use of NO_x reducing paving and paints in the north end of Brook Street;
- Investigate the reduction in street canyon effects in the Brook Street AQMA.

The general measures to improve air quality across the whole Borough include:

- CBC will continue to work with ECC and other partners to deliver the regeneration programmes in Colchester;
- CBC will continue to work with ECC and other partners to deliver and promote Park and Ride and "Park and Rail" Schemes;
- CBC will continue to work together with ECC and the bus operators to improve public transport services and encourage the use of more sustainable transport modes;
- CBC will continue to work together with ECC to deliver and promote the planned improvements to the A133 Colchester Central Corridor;
- CBC will continue to implement and review the Colchester Borough Council Travel Plan and encourage uptake of sustainable modes of transport. CBC will continue to work together with ECC, the LSP and other partners to encourage the uptake of Employer and School Travel Plans within the Borough, and particularly where likely to impact on the Brook Street AQMA;
- CBC will continue to work with ECC and other partners to deliver improvements in emissions standards, where practicable;
- CBC will continue to work with ECC and other partners to deliver a comprehensive package of parking measures for Colchester;
- CBC will continue to work together with ECC and other partners to deliver and promote the improvement of key interchanges;
- CBC will continue to work with ECC and other partners to deliver improvements in freight management;
- CBC will continue to work with ECC and other partners to improve the facilities for cycling and walking within Colchester and encourage greater uptake;
- CBC will continue to work with partners to actively support and promote the Essex-wide car share and Colchester2020 car share schemes, to encourage greater uptake;
- All relevant CBC Departments, including Environmental Control, Planning Policy and Development Control, will continue to work closely to ensure that air quality is taken into account in the planning process when considering future land uses, particularly with sites in or close to AQMAs or in areas marginally below air quality objectives;
- CBC will continue to work together with developers to improve sustainable transport links serving new developments and secure travel plan agreements;
- CBC will consider developing, through the Essex Air Quality Consortium, planning guidance to assist with air quality assessments of development proposals;
- CBC will continue the commitment to undertake local air quality monitoring within the Borough to ensure a high standard of data is achieved to assess against air quality objectives;

- CBC will make details of the Action Plan measures and annual progress reports available on its Website to ensure accessibility to the consultation and implementation process;
- CBC will continue to work together with the Essex Air Quality Consortium on air quality studies within the County to raise the profile of air quality in Colchester and Countywide;
- CBC will continue to proactively enforce industrial control and nuisance legislation to minimise pollutant emissions from these sources in Colchester;
- CBC will continue to work together with the Essex Energy Efficiency Advice Centre to promote and implement energy efficiency measures in Colchester.

The proposed actions will help work towards meeting the NO₂ annual mean objective/ EU Limit Value. Further Assessment scenario testing suggests that significant intervention would be required to improve air quality in the northern section of the AQMA sufficiently for the air quality objective and EU Limit to be met by 2010. It has not been possible to assess the air quality impacts of the main direct measures to improve air quality within this Plan, through detailed modelling, as these require further investigation and feasibility studies. It is therefore not possible at this stage to confirm whether the implementation of the measures proposed in the Action Plan will achieve the air quality objective and EU Limit to be met by 2010. The impacts of direct measures proposed will be considered through further investigation studies and reported through future progress reports.

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1 INTRODUCTION AND AIMS OF THE ACTION PLAN

1.1 Project Background

CBC has drawn up, with the assistance of Bureau Veritas, a Local Air Quality Management Action Plan for the Brook Street Air Quality Management Area within Colchester, identified through the second round of review and assessment of air quality. The Action Plan is required to be undertaken as part of the local authority's statutory duties as defined within Part IV of the Environment Act, 1995.

Bureau Veritas has undertaken previous review and assessment reports for CBC, which includes the Further Assessment (2007).

1.2 Legislative Background

Part IV of the Environment Act, 1995, places a statutory duty on local authorities to periodically review and assess the air quality within their area. This involves consideration of present and likely future air quality against air quality standards and objectives. Guidelines for the 'Review and Assessment' of local air quality were published in the 1997 National Air Quality Strategy (NAQS) ¹ and associated guidance and technical guidance. In 2000, Government reviewed the NAQS and set down a revised Air Quality Strategy for England, Scotland, Wales and Northern Ireland² (AQS). This set down a revised framework for air quality standards and objectives for seven pollutants, which were subsequently set in Regulation in 2000 through the Air Quality Regulations 2000³. These were subsequently amended in 2002⁴.

Where it appears that the air quality objectives will not be met by the designated target dates local authorities must declare an Air Quality Management Area (AQMA) and develop action plans in pursuit of the air quality objectives. Following the declaration, CBC is required to develop an Action Plan for the Brook Street AQMA in Colchester within 12 – 18 months.

Policy Guidance LAQM.PG(03) was published by the Government in 2003, which included guidance on the development of action plans. The NSCA have published guidance 'Air Quality Action Plans (2000)' and 'Air Quality: Planning for Action (2001)'. These guidance documents have been taken into account in development of this Action Plan for CBC, alongside guidance provided by the Department for Environment, Food and Rural Affairs through its Air Quality Action Plan Help Desk, which provides examples of best practice and an Action Plan appraisal checklist.

1.3 Scope of the Action Plan

The purpose of the Action Plan is to provide the means through which a local authority through joint working with relevant stakeholders, such as ECC and other relevant organisations, can deliver viable measures that will work towards achieving the Air Quality Objectives within an AQMA. The aim is also to encourage active participation in the achievement of action plan measures by consulting the local community and raising awareness of air pollution issues.

¹ DoE (1997) The United Kingdom National Air Quality Strategy The Stationery Office

² DETR (2000) The Air Quality Strategy for England, Scotland, Wales and Northern Ireland – Working together for Clean Air, The Stationery Office

³ DETR (2000) The Air Quality Regulations 2000, The Stationery Office

⁴ Defra (2002) The Air Quality Strategy for England, Scotland, Wales and Northern Ireland: Addendum, The Stationery Office

Local authorities are required to prepare a written Action Plan for an AQMA, setting out the action plan measures they intend to take forward and the potential costs and benefits of these measures. The Further Assessment provides the technical backup for the measures to be included within the Action Plan. The Action Plan should refer to the findings of the Further Assessment in terms of source apportionment (i.e. where emissions are coming from) so that action plan measures are targeted appropriately.

The Action Plan should contain simple estimates of the costs and benefits and timescales for implementing the proposed action plan measures, so that measures can be prioritised for implementation and subsequently monitored. The Action Plan should also indicate how far the measures will work towards achieving the Objectives.

1.4 Reporting of Action Plan

The Brook Street AQMA has been declared due to road traffic emissions of nitrogen oxides.

ECC is the relevant transport authority for Brook Street (AQMA) and will work jointly with CBC on transport and other measures within the Borough. County Councils have a duty under section 86 (3) of the Environment Act 1995 to put forward proposed actions which they themselves can implement to work towards meeting the air quality objectives in AQMAs. ECC should include these measures within the air quality section of the Local Transport Plan (LTP).

The Action Plan reflects the relevant organisational responsibilities for actions within the AQMA and proposed measures (Section 6) are reported as:

- Direct actions proposed for the Brook Street AQMA (responsibility of CBC and ECC);
- Indirect measures Borough-wide to improve air quality throughout the Colchester area, including the AQMA (responsibility of CBC and ECC).

2 OVERVIEW OF AIR QUALITY IN COLCHESTER

The main source of air pollution in the Borough is road traffic emissions from major roads, notably the A12, A133 and A134 as well as a number of strategic urban roads through Colchester town centre. An Air Quality Management Area (AQMA) was declared in May 2001 along a 'street canyon' in Mersea Road where there were predicted exceedences of the annual mean Objective for nitrogen dioxide (NO₂). Other pollution sources, including commercial, industrial and domestic sources, also make a contribution to background pollution concentrations.

A summary of CBC's second round of review and assessment of air quality, which commenced in 2003, is shown in table 1. The individual stages are summarised briefly with respect to outcome below:

- *Updating and Screening Assessment*

The Updating and Screening Assessment (2003) was the first phase of the second round review and assessment. Similar to Stage One of the previous round, there was consideration of the seven pollutants of concern to health and an assessment was made as to whether Air Quality Objectives for these pollutants would be met. CBC completed this in October 2003, with the conclusion that a Detailed Assessment was required for NO₂ due to emissions from road traffic at the A12 London Road at Marks Tey, Cowdray Avenue and Brook Street. All other Air Quality Objectives were expected to be met.

- *Detailed Assessment*

The Detailed Assessment (2004) considered the nitrogen dioxide (NO₂) annual mean objective at the three locations identified in the Updating and Screening Assessment, through dispersion modelling using ADMS-Roads and additional monitoring undertaken at relevant receptor locations.

The results showed that there were predicted exceedences of the NO₂ annual mean Objective identified at the nearest receptors to Brook Street in Colchester.

The Detailed Assessment concluded that CBC should consider declaring an Air Quality Management Area (AQMA) at Brook Street on the basis of the potential exceedences in the assessment area as highlighted in the Detailed Assessment Report where exposure criteria were fulfilled. The Department for Environment, Food and Rural Affairs (DEFRA) accepted the Detailed Assessment conclusions.

CBC declared Brook Street as an AQMA in January 2006.

- *Further Assessment*

The results of the source apportionment for the Further Assessment indicate that road traffic emissions are the main source of NO_x concentrations in the AQMA (87%). The light duty vehicle class (LDV) is the most significant source of traffic NO_x (55%). However, the heavy duty vehicle (HDV) class vehicles are contributing disproportionately to NO_x concentrations in the AQMA area;

contributing almost half of the NO_x concentrations, but being only a small proportion (4%) of the vehicle fleet within the Brook Street AQMA.

Source apportionment of NO_x at the façade with maximum predicted concentrations within the Brook Street AQMA

NO _x concentrations 2006	%	µg/m ³
Background	13.1	27.7
Road traffic	86.9	184.2
HDV*	39.4	83.5
LDV*	47.5	100.7

*As proportion of road traffic emissions contribution

In the air quality model baseline year, 2006, within the Brook Street AQMA, a reduction is required in both NO_x and NO₂. For NO_x, a reduction of 53% is necessary at the façade, equivalent to a drop of 211.9 µg/m³. For NO₂, a reduction of 37% is needed, from 63µg/m³ to 40µg/m³, a drop of 23µg/m³. This would bring NO₂ levels down to the UK Government target of 40µg/m³.

By 2010, the EU Limit Value target date, the NO_x/NO₂ concentrations are predicted to reduce due to expected improvements in background concentrations and vehicle fleet emissions, through the implementation of national policies. In 2010, the maximum NO_x reduction required within the Brook Street AQMA at the façade is 173.6 µg/m³ (equivalent to a 41% improvement in NO_x) and NO₂ reduction is 15.1µg/m³ (equivalent to a 27.4% improvement in NO₂).

Consequently, the formulation of an Action Plan should aim to reduce the levels of NO_x/NO₂ within the AQMA by this amount.

Scenario Testing:

The Further Assessment model results have shown that, without intervention, exceedences of the annual mean NO₂ objective/EU Limit Value are predicted to occur at the northern (street canyon) section of Brook Street beyond 2010. Scenarios have undergone initial modelling to examine what measures could potentially reduce concentrations to below the EU Limit Value in 2010.

2010 Scenarios:

1. Restriction of vehicles through Traffic Regulation Orders (HGV restrictions)
2. Overall reductions in traffic levels in Brook Street by 50%
3. Open up the north section of Brook Street to improve dispersion, by reducing street canyon effects

NO ₂ Annual Mean concentrations 2010 in µg/m ³	Do Nothing 2010	Scenario 1 (remove HGVs)	Scenario 2 (remove 50% traffic)	Scenario 3 (Remove canyon effects)
13 Brook Street: Modelled Receptor with maximum predicted concentration (in the baseline model)	55.1	45.0	42.5	37.1

The modelled results indicate that significant intervention measures are required to achieve the EU Limit by 2010. Scenarios 1 and 2 show significant reductions in NO₂ concentrations, but would be insufficient on their own to achieve the EU Limit Value in 2010. Scenario 3 clearly shows the influence of the street canyon effects at the north section of Brook Street and the benefits of opening up this section to improve dispersion. However, even under Scenario 3, exceedences are still predicted to occur at receptors directly adjacent to the East Hill junction (1, 2, 3 and 5 Brook Street) due to increased emissions from stop/start movements at the junction. Introduction of traffic management measures to reduce queuing and improve traffic flows would help mitigate this.

Additional air quality modelling work will be undertaken for the key direct measures proposed in this Action Plan to further consider the potential air quality improvements that could be gained.

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Table 1: Summary of the second round review and assessment process for CBC

Source	Updating and Screening Assessment (2003)		Detailed Assessment (2004)	Further Assessment (2007)
Road Traffic	SO ₂		Exceedence of the annual mean NO ₂ Objective resulted in declaration of the Brook Street AQMA in Colchester in January 2006, due to road traffic emissions.	Further assessment of NO ₂ in AQMA. Support for continuance of the AQMA – Action Plan required.
	NO ₂	→		
	PM ₁₀			
	Carbon monoxide			
	Benzene			
	1,3 Butadiene			
	Lead			

3 EXISTING POLICIES AND STRATEGIES TO IMPROVE AIR QUALITY

There are a number of related policies and strategies at the local and regional level that can be tied in directly with the aims of the Air Quality Action Plan, and will help contribute to overall improvements in air quality across the Borough.

3.1 Draft East of England Plan (Regional Spatial Strategy) (December 2004)

The Draft East of England Plan was drawn up by the East of England Regional Assembly (EERA) to take account of the key factors that are likely to drive the scale and location of development over the next 20 or 30 years. Specifically, with respect to Colchester, the number of dwellings proposed for the borough is 17,100 up to 2021, the largest allocation in this sub-region.

To assist with this, provision will be made in Colchester for the following transport schemes:

- A significantly enhanced level of public transport service provision to, from and within the Regional Interchange Centres (including Colchester);
- Improvements to the A12 (Colchester to M25);
- A120 improvements (Braintree to Marks Tey);
- Improvements to the A133 corridor;
- Colchester to Shenfield rail improvements and an assessment of the potential for new railway stations and parkways at, amongst other locations, Marks Tey.
- A quality bus corridor between Stansted and Colchester.

The Plan contains the following policy with respect to air quality:

Policy ENV7: air quality

Local development documents and local transport plans, having regard to the increased levels of development and associated infrastructure proposed across the region, will include objectives, proposals and policies that seek to:

- Reduce or reverse the growth of motor traffic;
- Encourage infrastructure for cleaner transport fuels such as liquefied petroleum gas (LPG) and compressed natural gas (CNG);
- Ensure that new development does not exacerbate air quality in existing and potential air quality management areas (AQMA's);
- Pay particular attention to any potential effects on wildlife, where potentially polluting development, increased motor traffic or intensive agricultural facilities producing ammonia, are expected close to sensitive habitats such as Sites of Special Scientific Interest (SSSIs);
- Seek to mitigate existing and potential air quality pollution problems.

Following consideration of responses to the draft consultation stage, the Secretary of State is expected to publish the final East of England Plan by autumn 2007 at the earliest. This will be accompanied by a summary of public consultation, a statement of reasons for any further changes made, including how the Sustainability Appraisal (and consultation responses) was taken into account, and a statement of the measures to be taken to monitor significant environmental effects.

3.2 Colchester's Draft Sustainable Community Strategy (May/June 2007)

At the beginning of 2007, the Government challenged Local Strategic Partnerships to turn their existing community strategies into "sustainable" community strategies by developing a stronger focus on integrating social, economic and environmental issues and by tackling the longer-term and global impacts on communities.

Colchester2020 (the Local Strategic Partnership for Colchester) has recently completed a consultation on Colchester's draft Sustainable Community Strategy, which can be viewed on the Colchester2020 website www.colchester2020.com. The results of the consultation are being considered and the Sustainable Community Strategy will be launched at Colchester2020's bi-annual Assembly Meeting in October. An action plan will be produced to support this document.

The Draft Sustainable Community Strategy sets out the long-term vision for Colchester. One of the key priorities in the Draft Sustainable Community Strategy is Transport [A much improved transport system providing more choice and less congestion]. With respect to transport, the aspiration for 2020 and beyond is that *"Colchester will have a sustainable transport system the envy of other towns. Access and transit for people and commerce will be facilitated and enhanced with choices developed to provide the incentives for habit change, which will enable the aspiration to make the Town Centre a "car free" zone become reality. Transport generated carbon will have significantly reduced."*

Actions set out for Colchester2020 in the Draft Strategy for the first few years with respect to transport include the following:

- Influence the programme to create a network of Park & Ride sites for Colchester;
- Press for the earliest introduction of our first Park & Ride site;
- Press for improvements needed to the A133 transport corridor;
- Promote a campaign for significant improvements to the main transport gateways into Colchester and historic centre, including rail stations, whilst protecting heritage and culture;
- Work to re-energise and expand the Colchester Travel Plan Club;
- Promote initiatives to secure a 'car free' Town Centre in due course by encouraging development of choices.

3.3 Colchester Strategic Plan (2006 - 2009)

The Colchester Strategic Plan has identified 4 key areas for regeneration. The regeneration will bring about some additional development traffic flows, but will also lead to improvements in traffic management and investment in public transport and other modes of transport.

<p style="text-align: center;">North Colchester</p> <ul style="list-style-type: none"> • 1,500 new homes • up to 3,500 jobs • 10,000 seater community stadium and • new home for Colchester United • regional conference centre • new district general hospital • new junction on A12 • park and ride scheme • new school 	<p style="text-align: center;">Garrison</p> <ul style="list-style-type: none"> • new 21st century garrison • 5,000 direct jobs in Colchester • largest Private Finance Initiative scheme in the UK • land released for new 'urban village' with 2,600 homes • new community and sporting facilities • new school • improved town rail station and service
<p style="text-align: center;">East Colchester</p> <ul style="list-style-type: none"> • research park at university • more than 1,500 new homes • up to 3,500 new jobs • tidal barrier to retain high water in river • maritime trail • community facilities 	<p style="text-align: center;">St Botolph's Quarter</p> <ul style="list-style-type: none"> • contemporary visual arts facility • new cultural quarter • new retail development of up to 350,000 square feet • new magistrates' court complex • new and improved bus station • 500,000 extra visitors each year

The key projects identified in the Plan which CBC is giving financial and resource priority to are:

- Community Stadium and conference centre
- Park and Ride at Stanway and Cuckoo Farm
- Rail improvements for east Colchester
- St Botolph's – including the bus station and Visual Arts Facility
- University research park
- Western by-pass

A new partnership between CBC and ECC called Colchester Renaissance was launched in 2004. It will support over £1.5 billion of new private sector development in these 4 key regeneration projects in Colchester and aims to bring about closer links between the two Council's work on regeneration.

3.4 Colchester Borough Council Local Development Framework

The Government has introduced a new national planning system which has seen Local Plans replaced by Local Development Frameworks (LDFs) which will comprise of a series of Local Development Documents (LDDs). These documents will be more concise than current local plans and include a Core Strategy. All authorities are expected to have the new plans in place by 2007. The new proposals are intended to speed the plan making process up by producing more focused, flexible, and slimmer plans. These include undertaking a Strategic Environmental Appraisal/Sustainability Appraisal that needs to be undertaken alongside plan preparation, and the need to prepare a Statement of Community Involvement. This Statement will identify how the Council intend to consult on the plan; in particular with those groups that are traditionally hard to reach. A Local Development Scheme (LDS) report (May 2005) has been produced, which sets out how CBC intends to produce the LDF.

Over the next 15 years the Borough of Colchester needs to meet ambitious housing growth targets, help create new jobs, deal with the impact of climate change, and

improve "green" transportation. These challenges, and others, are being addressed in Colchester Borough Council's Local Development Framework (LDF). The key part of the LDF is the Core Strategy which sets out how the Council would prefer to meet these challenges and the consultation on the Amendment of the Preferred Options of the Core Strategy ended on 9 July 2007. The Council will be seeking to submit the final Core Strategy for Government review in November 2007.

The policies in the Core Strategy, as set out below, provide the overarching policy direction for the Local Development Framework, and for the delivery of development, infrastructure, facilities and services in Colchester to 2021. Policies relating to sustainable development and transport will be key policies with respect to ensuring that impacts on air quality of development proposals are minimised.

Sustainable Development

The Strategy establishes a Settlement Hierarchy to guide development towards the most sustainable locations. These development locations will be coordinated with transport infrastructure and the provision of community facilities, shopping, employment and open space to create sustainable communities.

Centres and Employment

Achieving a prestigious regional centre and sustainable communities requires the enhancement of our Town Centre as well as other local centres. The Core Strategy establishes a hierarchy that secures the important role of the Town Centre and encourages the regeneration of Urban Gateways to Colchester (e.g. North Station).

The Core Strategy also promotes the enhancement of District and Local Centres to support communities with local employment, shops and services.

Strategic Employment Zones have also been identified to accommodate business development at locations to the north, east and west of Colchester Town that are well supported with infrastructure.

Housing

Colchester Borough needs to accommodate 17,100 homes between 2001 and 2021, and an additional 1,660 homes by 2023. Over two-thirds of this housing is already accounted for through existing allocations, permission and completions. In broad terms, the majority of housing development in the Borough will be accommodated at the following locations:

- Town Centre (2000)
- North Growth Area (4000) plus greenfield allocations (2200)
- East Growth Area (2600)
- South Growth Area (3000)
- Stanway Growth Area (1000) plus greenfield allocations (800)

Housing developments will need to provide 35% affordable housing and provide a mix of housing to meet the diverse needs of the community.

Community Facilities

The Core Strategy seeks to provide excellent health, education, culture and leisure facilities to meet the needs of Colchester's growing community. Major community facilities (including the University of Essex and the Colchester General Hospital) will form key components of the growth areas and will be better connected by Transit Corridors. The Strategy also seeks to deliver new community facilities, including the Visual Arts Centre and Community Stadium.

Urban Renaissance

The Core Strategy seeks to maximise the potential of the existing regeneration areas and stimulate a broader urban renaissance throughout the Town Centre. The Core Strategy also seeks to protect the historic character of the Borough whilst also securing high standards of urban design in new developments.

Public Realm

Creating a high quality public realm, including parks, squares and streets, is integral to the success of sustainable communities, and is therefore a key element of the Core Strategy.

The Strategy seeks to improve the street environment and calm traffic in urban areas to attract residents to local shops, schools, parks and bus stops.

Existing parkland and green links will be enhanced, and new open space will be acquired at appropriate locations, to meet the recreational needs of Colchester's growing community.

Transport and Accessibility

The key aims of the transport strategy and policies are to improve accessibility and promote sustainable travel behaviour. Improved access to shops, employment and services can be achieved through a long-term strategy of coordinating land use and transport. The Strategy seeks to coordinate the following elements in order to improve accessibility and create sustainable communities:

- Support development at accessible locations to reduce the need to travel.
- Create people-friendly streets and encourage walking and cycling.
- Improve the public transport network with Transit Corridors, Park and Ride, and quality gateways/interchanges.
- Improve the strategic road network and manage car traffic and parking in urban areas.
- Support rural communities with demand responsive transport services.

Natural Environment and Rural Communities

The natural environment, countryside and coastline will be conserved to protect the Borough's diverse history, archaeology, geology, and biodiversity. Development will be directed away from sites of landscape and conservation importance and land at risk from flooding.

Energy, Resources, Waste and Recycling

Establishing sustainable communities in Colchester requires careful management of our energy, resources and waste. The Strategy will promote environmentally sustainable developments that are designed to:

- Utilise renewable energy sources
- Reduce household energy and water consumption
- Encourage the recycling of waste

3.5 Adopted Review Colchester Borough Local Plan (2004)

The adopted Local Plan, which forms part of the overall development plan for Colchester up to 2011, details the land use planning policies and proposals for the Borough. A review of the Local Plan has begun in anticipation of the proposed changes to the planning system as required by the new Planning Compulsory Purchase Act.

It is fundamental to the achievement of the aims of the Air Quality Action Plan to have a Local Plan that recognises the importance of air quality in terms of the environmental impact of development and the need for sustainable transport measures. Colchester Borough Local Plan incorporates relevant policies with respect to air pollution through Policy P1 as shown below.

P1 Development will not be permitted where either it or any ancillary activities, including vehicle movement, are likely to harm the amenities of people living nearby by reason of:

- (a) noise;
- (b) vibration;
- (c) smell;
- (d) fumes;
- (e) smoke;
- (f) ash;
- (g) dust;
- (h) grit;
- (i) light;
- (j) lack of adequate drainage facilities;
- (k) likelihood of pollution of surface or underground waters;
- (l) air pollution or any other forms of pollution.

New development will not be permitted that is likely to be significantly affected by any of the relevant forms of pollution listed above.

Any proposed development involving the manufacture, storage or use of materials potentially hazardous to public health and safety will be approved only when fully adequate safeguards have or will be taken to reduce likely risks to the surrounding area.

It may be appropriate, in the light of an environmental assessment, to require a scheme of mitigation covering matters of planning concern to be approved before any built development is allowed to be undertaken.

3.6 Second Local Transport Plan for Essex (2006 – 2011)

The second Local Transport Plan (LTP) for Essex (2006-2011) was submitted to the government on 31st March 2006. The LTP describes the long-term 'vision' for transport in Essex which is:

“create safe, healthy, diverse and sustainable communities that are open and welcoming to all; where people want to live, work and visit; where people and communities take charge of their lives through active citizenship; where heritage is valued and innovation thrives; where people can travel easily, both locally and through making the most of excellent access to London, the rest of England and Europe ”

The 2nd LTP reviews the strategies set out in the original LTP and lays out additional strategies and priorities designed to create a better, more integrated sustainable transport system for Essex. Existing and new initiatives include Traffic Management Strategy, Safer Routes to School, Sustainable Travel Plans, bus priority schemes and Quality Partnerships between the local authority and transport operators. Regional Interchange Centres (RICs) such as Colchester are highlighted as of particular importance, in terms of delivering improved public transport services.

The 2nd LTP includes improving air quality as one of four shared priorities along with; tackling congestion, improving road safety and accessibility. The 2nd LTP describes the co-ordination between ECC and the Essex Air Quality Consortium in order to improve air quality through reducing traffic emissions with particular relevance to the AQMAs declared in Essex.

The proposed schemes for Colchester within the 2nd LTP focus on Quality Bus Partnerships, Park and Ride, A133 corridor improvements (including bus priority). It also includes measures to support Travel Plans including Safer Routes to Schools and workplace travel plans, new cycle routes, the implementation of a walking strategy, improved interchanges and circulation and parking improvements in the town centre.

Relevant proposed LTP schemes likely to have direct and indirect impacts on local air quality within the Brook Street AQMA are referred to where relevant within this Action Plan.

3.7 Colchester's New Transport Strategy (2001)

Colchester's New Transport Strategy provides the long term vision and strategy for transport in Colchester, in the light of expected traffic growth and proposed new areas of development.

Policies included within the Strategy likely to contribute to air quality improvements include:

- Encouraging uptake of school and business Travel Plans;
- Supporting and promoting a regional parking policy that encourages less car use;
- Introducing car-free and reduced-car use zones for new development proposals;
- Investigating charges to motorists, such as charges for on-street parking, increased charges for long stay parking and workplace parking charges;
- Promotion of alternatives to the car through integrated transport solutions and implementation of "Green Transport Corridors" for main strategic routes into Colchester;
- Encouragement of walking and cycling through improvement to routes to town and local centres and increased priority over other modes of transport;
- Bus Quality Partnerships and bus priority measures;
- Implementation of a comprehensive Park & Ride system in Colchester;
- Improvement of public transport interchanges; and
- Promotion and development of the Historic Core Zone concept in the town centre, with entry limited to essential traffic and priority to greener modes.

3.8 Transport for Colchester (2004)

Transport for Colchester (TfC) provides an updated transport strategy for Colchester which identifies measures to be put in place by 2011, aimed at accommodating the transport needs of Colchester until 2020, taking into account the key regeneration schemes in the area. This document has assisted with the formulation of the 2nd Essex Local Transport Plan (LTP) 2006 – 2011.

The key transport issues in Colchester include:

- Traffic growth and the dominance of the car as the main mode of travel which will be exacerbated by the extent of new development proposed. Traffic levels in Colchester are expected to grow by between 22% - 36% by 2011 if no action is taken;
- Congestion along the main access routes during the peak and at other times of the day as a result of any disruptions to the network caused by road works, accidents or other emergencies.

Brook Street is recognised in the strategy as a local distributor route where volume exceeds capacity, with predominantly local vehicle movements.

The key elements of TfC likely to contribute to local air quality improvements in the Borough include:

- Park and Ride scheme proposals located on key radial routes
- Bus priority corridors
- Network of Quality Bus Partnerships, (QBPs)
- Development of a new bus station and improved bus infrastructure
- Promotion and greater uptake of cycling, walking and Travel Plans
- The implementation of the proposed Historic Town Centre Improvements

These elements are considered further, later in the Action Plan, with respect to proposed action plan measures for the Brook Street AQMA and Borough-wide.

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4 FINANCING

The Essex 2nd Local Transport Plan has allocated funding to a number of schemes in the Borough of Colchester that tie in with Action Plan measures to improve air quality in the area, such as new park and ride schemes, bus and rail interchange enhancements and encouraging the uptake of travel plans.

Annual funding for Quality Partnerships, Safer Routes to School, Cycle Strategy and Walking Strategy has been made available through the LTP. CBC will work together with ECC to review current schemes for the area in the light of the findings of the review and assessment of air quality. Additional schemes will be implemented where possible to secure further improvements in air quality.

Other measures to improve air quality in the Brook Street AQMA and Borough wide will be funded by CBC, such as air quality monitoring and promotional activities, or by developers through the use of S106 contributions from developments in the Brook Street area and potentially those further afield, if the generated traffic is shown to negatively impact here.

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5 CONSULTATION

Under Schedule 11 of the Act, Local Authorities are required to consult on their draft LAQM Action Plan. It is important for the success of the Action Plan to have involvement by all local stakeholders including local residents, community groups and local businesses in the drawing up the Action Plan in addition to their active participation in achieving the action plan measures. The Action Plan has been drawn up for consultation with relevant representatives from CBC and ECC, through the Brook Street AQMA Air Quality Steering Group.

This is the second draft Action Plan to be consulted on, following comments from consultees on the first draft. The results of the previous consultation exercise have led to the inclusion of new Direct Measures to be investigated, which are considered as having the potential to lead to significant air quality improvements. Other measures which are expected to achieve lesser, more indirect measures have been incorporated into the General Measures section.

The following is a list of statutory and non-statutory consultees to which this draft Plan will be sent:

- The Secretary of State
- The Highways Agency
- The Environment Agency
- Essex County Council
- Primary Care Trusts
- CBC Councillors and Officers
- Neighbouring local authorities
- Local residents within and bordering the AQMA
- Relevant local businesses, community groups and forums
- Other relevant local stakeholders

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

6 PROPOSED MEASURES

The following section outlines a number of proposed measures; those directly related to the Brook Street AQMA and those more indirect general measures which aim to improve air quality throughout the Borough.

Direct measures (DM) aim to reduce NO₂ concentrations within the AQMA, concentrating on the dominant sources of emissions – road traffic. Some of these measures will be considered within the context of the longer term transport strategy for the area. Other direct measures are targeted at reducing exposure to traffic emissions in the Brook Street AQMA.

General measures (GM) target those emissions within a more general area, and aim to further reduce background levels of pollution above and beyond that likely to be achieved by existing national and international agreements and policy.

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6.1 Proposed Direct Measures for the Brook Street AQMA

The following provides the outcome of discussions with CBC, and ECC with respect to a number of direct action plan measures. These have been considered for further investigation with respect to NO_x/NO₂ emissions reductions in the AQMA in pursuit of the NO₂ annual mean Air Quality Objective and EU Limit Value.

Brook Street is a key strategic route in Colchester and therefore achieving the necessary reductions in traffic on this street to achieve the NO₂ annual mean objective/EU Limit value by 2010 is considered challenging, especially in light of the four key regeneration areas in Colchester.

The Further Assessment modelling has predicted that by 2010, exceedences of the air quality objective would still occur at the north end of Brook Street where properties close to the road are creating street canyon effects and reducing pollutant dispersion. Direct measures to improve dispersion in this part of Brook Street and reduce exposure to pollution have therefore also been considered in addition to traffic management measures.

The inclusion of the proposed direct measures means that the feasibility of these will now be investigated further (within the next 12 months). This further work will be used to establish the best combination of measures to achieve the necessary reduction in pollutant concentrations. The solution to the air quality problem in the Brook Street AQMA is likely to be through the implementation of a package of measures, with individual measures being insufficient on their own to achieve the NO₂ annual mean Air Quality Objective and EU Limit Value.

DM1: Investigation of Traffic Management Improvements for Brook Street

A number of Traffic Management measures could be considered for use on Brook Street. The introduction of signals at the north end of Brook Street and revisions to, the timings of signals at the south end could be considered as a potentially cost-effective traffic management solution. This would enable the prioritisation of traffic exiting Brook Street reducing queuing and consequently NO_x emissions in the AQMA (notably in the street canyon section at the junction with East Hill). More radical Traffic Management options could also be investigated, such as bus-only lanes, peak hour restrictions, or implementation of a one-way-only restriction.

Objective	To reduce queuing traffic through the introduction of, or improvements to, signalisation at junctions on Brook Street in order to reduce emissions from stop, start driving. Should tackle congestion hotspots.
Responsibility	ECC /CBC
Air Quality Impacts	High
Non Air Quality Impacts	Improvements in journey times
Perception	Likely to be perceived as positive
Cost-effectiveness & Feasibility	Cost-effectiveness & Feasibility to be investigated.
Funding	TBC
Timescale	TBC

DM 2: Investigation of Traffic Regulation Orders for Brook Street

The Road Traffic Regulation Act 1984 gives traffic authorities extensive powers to make traffic regulation orders (TROs). These can prohibit, restrict or regulate traffic or particular types of vehicle. They may apply to part of a road, a single road, or a number of roads. They may be in force all the time or only for specified periods. Traffic authorities may exempt some classes of vehicle or permit holders.

With respect to Brook Street, as a key route into Colchester, a TRO would have to take into account the potential for increase in traffic on other routes. It may be possible to restrict access at peak times, for heavy goods vehicles, for instance, without unduly affecting other areas. The Further Assessment identified heavy duty vehicle (HDV) movements as contributing disproportionately to NO_x emissions in the AQMA and therefore targeting HDV movements would lead to potentially significant air quality benefits. However, the Further Assessment also notes that light vehicles have a significant impact. The potential for TROs should be looked at with regards to the ECC Road Hierarchy Strategy, taking into account where vehicles using Brook Street are going and the implications for the likely alternative routes, especially in light of the pressure on the surrounding network. This includes the potential implications for the current bus routes. It is also noted that the possibility exists that any traffic diverted may lead to the emergence of AQMAs in other areas.

Objective	To reduce NO ₂ concentrations at peak times, through restriction on access to certain vehicle classes
Responsibility	CBC
Air Quality Impacts	High
Non Air Quality Impacts	Reduction in congestion and noise; better quality environment.
Perception	Likely to be perceived as positive by residents, but potentially negative by local businesses using this route for deliveries
Cost-effectiveness & Feasibility	Cost-effectiveness & Feasibility to be investigated.
Funding	TBC
Timescale	TBC

DM 3: Investigate the use of NO_x reducing paving (Noxer Blocks) and paints in the north section of Brook Street

Noxer blocks are blocks of cement mortar with a 5-7mm thick surface layer of Titanium(IV)oxide (titanium dioxide) on it. Titanium(IV) oxide is a photocatalyst that uses sunlight to absorb and render oxides of nitrogen (NO and NO₂) harmless by converting them to nitrate ions (NO₃⁻), which are then either washed away by rain or soaked into the concrete to form stable compounds. The active principle—basically a blend of titanium dioxide that acts as photocatalyzer—can also be incorporated into paints.

The close proximity of sensitive receptors to the adjacent road network (emission source) means that creating an effective barrier between the source and the receptor is not feasible. However, emerging technological innovations such as NO_x reducing paving and paint materials may warrant consideration if potentially cost-effective as a solution.

London boroughs Camden and Westminster are currently trialling nitrogen oxide (NO_x) removing paving within their Clear Zone and the City of London is trialling NO_x busting paint. The initial results of the Camden paving trial which commenced in 2006 were considered inconclusive. Positive impacts in terms of NO_x reduction were measured (up to 12%), but similar reductions were recorded at other sites without the paving in place. Similarly, the City of London trial has not shown conclusively that measured improvements were due to the paint. Earlier trials in Italy and Japan have had much more positive and conclusive measured impacts (50% NO_x reduction). It is considered that the impacts of both the paving and painting is improved where there is very poor dispersion (low turbulence), as may be found in a street canyon environment.

Further investigation is required to assess the appropriateness of the use of such technology in the Brook Street AQMA and to understand the optimum extent and location for effectiveness.

Objective	To reduce NO ₂ concentrations at existing residential properties in Brook Street
Responsibility	CBC
Air Quality Impacts	Trials are currently ongoing in the UK.
Non Air Quality Impacts	-
Perception	Likely to be perceived as positive, as part of an environmental improvement scheme for the area
Cost-effectiveness & Feasibility	Cost-effectiveness & Feasibility to be investigated. Costs: 1000m ² paving is approx £60,000
Funding	TBC
Timescale	TBC

DM 4: Investigate the reduction in Street Canyon Effects in the Brook Street AQMA

The north section of Brook Street, approaching the junction with East Hill, suffers from emissions of queuing traffic exacerbated by poor dispersion due to street canyon effects. Properties in this section line both sides of the road with facades within 2m of the kerb. The poor dispersion is a major contributor to exceedences of the NO₂ annual mean objective in this section of Brook Street and as a result significant traffic volume reductions would be required to achieve the annual mean objective and EU Limit value. By 2010, exceedences of the annual mean objective are still likely to occur within this street canyon section.

The opening up of this section to allow for increased pollutant dispersion could lead to significant air quality improvements and health benefits, in addition to other environmental benefits, such as the creation of open spaces and the potential for planting of street trees. To enable these improvements to this section of Brook Street, CBC will investigate the potential for compulsory purchase of a number of properties within this section of Brook Street. This could, for instance, be undertaken through voluntary agreements with residents or through purchase of properties as they become available on the market place. It is however noted that, despite the potential benefits, a number of sensitive issues arises out of such a radical proposal, as well as significant cost implications.

Objective	Improve pollutant dispersion and reduce exposure to elevated pollutant concentrations
Responsibility	CBC
Air Quality Impacts	High
Non Air Quality Impacts	Better quality environment through creation of open spaces and tree planting
Perception	Potentially negative perception by residents in the AQMA. Likely to be more positive if part of the whole regeneration initiatives in Colchester and if purchase occurs as properties become available on the market place.
Cost-effectiveness & Feasibility	Feasibility and cost-effectiveness to be investigated. However, it should be noted that there are currently no LDF proposals for large-scale regeneration of the Brook Street area.
Funding	Moderate
Timescale	TBC

This option was considered in addition to the options DM1 to DM3 but after limited consultation with residents in Brook Street this proposal has been rejected in favour of the positive traffic management proposals.

A Summary of the direct measures for the Brook Street AQMA is shown in Table 2.

The ranking of options has been based on professional judgement through the assessment of a number of considerations; including the costs and benefits of all the options, feasibility and acceptability, and whether they will achieve the Air Quality Objective. It is likely that the NO₂ annual mean Objective will only be achieved through a combination of measures.

At this stage the impact assessment is qualitative. Quantitative air quality impact assessment of the principal measures will be undertaken when relevant information on the detailed schemes becomes available.

The costs are provided as:

- 'Low' (up to £1 million);
- 'Moderate' (between £1 million – £5 million); and,
- 'High' (greater than £5 million).

The air quality benefits are provided as:

- 'Low' (<0.2µg/m³);
- 'Moderate' (between 0.2 – 1 µg/m³); and,
- 'High' (greater than 1 µg/m³).

Direct Measures considered but dismissed on the grounds of cost-effectiveness and/or feasibility at this stage

CBC will continue to monitor progress and best practice on these and other measures and work in partnership with ECC and other partners to investigate their potential for implementation to improve air quality and the environment in general.

Low Emission Zone (LEZ) or Clear Zone

A Low Emission Zone (LEZ) is a geographic zone defined for an area where vehicles of an acceptable emissions standard (currently Euro III) can enter and move around. The concept is held widely as a way of achieving air quality objectives within large urban area where economies of scale can be achieved with respect to set-up and operating costs.

A Clear Zone is a defined urban area, usually a City, which exploits new technologies and operational approaches to improve quality of life and support economic growth, whilst minimising the adverse impacts of its transport systems.

Both could be considered as part of the Historic Town Centre Improvements (HTCI) (previously the Historic Core Zone) proposals to remove through traffic from the town centre. Investigation on potential EU funding is currently underway and will be taken forward with partners if appropriate.

Road User Charging or Workplace Parking Levy

The Transport Act 2000 gave local authorities powers to introduce road user charging or workplace parking levy schemes. The revenue generated from such schemes would be used to improve local transport in the area.

The costs of introducing a road charging scheme can be offset by the revenue that is generated. Area wide charging is likely to be more costly to introduce than a designated route. The feasibility of area wide schemes is discussed in the East of England Plan and it is unlikely that they will be introduced in the short term to achieve the air quality objective. Road User Charging is not being pursued by Essex County Council. Any consideration to potential schemes in Colchester would need to be compatible with a regional scheme. Also, any scheme would need to be part of an overall package and promoted as such to highlight the range of benefits, countering any negative arguments.

Based on charging workers for parking at their place of work, the implementation of a workplace parking levy could reduce the number of private vehicles entering Colchester. An area-wide parking levy could be investigated for the future but there are already organisations in Colchester who are charging their staff and/or students/visitors to park in conjunction with promotion of alternatives as part of their Travel Plans. This is likely to grow both in terms of the level of charging and the organisations implementing it as the 2020 Travel Plan Club incorporates more organisations and more are required through the planning process.

Roadside Emissions Testing

Under new powers of authority (Roadside Vehicle Emissions (Fixed Penalty) Regulations 2002) local authorities are able to undertake roadside emissions testing of vehicles. The aim is to identify those vehicles that make a disproportionate contribution to emissions through poor maintenance with on-the-spot fines for those that fail. The scheme of a formal roadside emissions testing programme is not

considered viable for stand-alone authorities and has therefore been dismissed as a possibility for inclusion in the current action plan.

Idling Engine Emissions

The Road Traffic (Vehicle Emissions)(Fixed Penalty) (England) Regulations 2002 permit all English local authorities to take action against drivers who leave their vehicle engines running unnecessarily when parked. The local authority can issue a fixed penalty (£20) to any driver blatantly running their engine unnecessarily and who refuses all reasonable requests to switch off.

Idling emissions from parked vehicles are not considered a significant issue in the AQMA to warrant introducing specific measures with necessary resource implications. The proposal has therefore been dismissed on the ground of cost-effectiveness.

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6.2 Proposed General Borough-wide Measures to Improve Air Quality

There are general measures that can be implemented by CBC, or which CBC can feed into, aimed at improving the air quality throughout the Borough. These are contained within adopted policy documents, or those currently under development and a number have funding secured. These will reduce background pollution concentrations and indirectly will work towards achieving the Air Quality Objectives within the AQMA. Of those included below, a number have the potential to have greater, albeit still potentially only low, impact on improving air quality through the ability to concentrate efforts in certain areas e.g. Brook Street. These measures will not have specific further investigation undertaken on them directly as part of this process, although the designation of Brook Street as an AQMA should afford it extra consideration when further work is done to implement them over the coming years.

6.2.1 Improvements to Traffic Management through Regeneration

Regeneration proposals in Colchester are expected to deliver environmental improvements and investment in improvements to traffic management in the Colchester area. Nevertheless, the additional development is expected to lead to increased traffic growth, which could negatively impact on the Brook Street AQMA.

Historic Town Centre Improvements:

A reduction in town centre traffic is currently being considered as part of the Historic Town Centre Improvements (HTCI) (formerly the Historic Core Zone) proposals. This scheme looks at improving the Town Centre environment, giving increased priority to cyclists, pedestrians, buses and taxis, and deterring through traffic. A possible consequence of the implementation of such a proposal could be increased flows on alternative routes and adjacent streets, including Brook Street. Addressing the Brook Street AQMA with direct measures to revise traffic flows could assist with the implementation of the HTCI proposals.

St Botolphs Quarter Regeneration:

Brook Street is in the vicinity of the St Botolphs Quarter masterplan proposal, one of the key areas of regeneration in Colchester. The Magdalen Street development proposals are part of the St Botolphs Quarter area, but have been subject to a separate development brief.

As part of the development proposals, the St Botolphs Roundabout will be remodelled to improve traffic flows and public transport, cycle and pedestrian facilities. This will help ease congestion and could potentially have benefits for both AQMAs declared in Colchester (Mersea Road and Brook Street). However, increased traffic generation could lead to negative impacts.

East Colchester Regeneration:

Brook Street is also likely to be influenced by the East Colchester development proposal, another key area of regeneration in Colchester. The Masterplan for East Colchester Regeneration is currently being finalised, but is expected to deliver 1500 new homes and up to 3500 new jobs.

The East Colchester Regeneration includes proposals for housing, employment and leisure. CBC will assist implementation of the University Research Park to secure

high value jobs for Colchester and contribute to retention of graduates. The proposals also include provision of improved transport links for all modes within the area to the town centre and beyond.

The development proposals are expected to lead to increased flows in the Brook Street AQMA. Although improvements to traffic management and facilities for other transport modes are proposed, it is likely that these will only help to reduce the impacts of future traffic growth rather than leading to a significant overall reduction in emissions.

GM1: CBC will continue to work with ECC and other partners to deliver the regeneration programmes.

6.2.2 Introduce New Park and Ride Schemes

Park and Ride for Colchester has been proposed within the 2nd Local Transport Plan. The delivery of Park and Ride will tie in with the proposals for the overall parking policy for Colchester town centre, including reductions in surface area car parks.

In addition, improvements to the parking, bus and cycle facilities for “Park and Rail” along the Clacton Branch Line are proposed to encourage greater uptake of rail travel into Colchester.

GM2: CBC will continue to work with ECC and other partners to deliver and promote Park and Ride and “Park and Rail” Schemes.

6.2.3 Develop Quality Bus Partnerships

The 2nd Local Transport Plan includes proposals to develop further the Quality Bus Partnerships (QBPs) with transport providers in Colchester, through a programme of inter-urban bus service improvements.

Further QBPs are proposed to be introduced in the Colchester area to improve accessibility of services and centres to the community and the quality of public transport. These schemes will be supported by better rail and bus station integration e.g. Colchester Station and the provision of the new bus station. The schemes will provide support for the planned regeneration in the area. Measures to improve bus services include bus priority measures, real-time information, and provision of modern buses.

ECC has signed Quality Bus Partnership Agreements with the three main bus operators in Colchester. The principal routes affecting Brook Street are the First services 64/64A which operate on a ten minute frequency in each direction along Barrack Street/Magdalen Street between terminal points at Greenstead and Layer Road together with Network Colchester service 1 running on a ten minute frequency along East Street/East Hill between its terminal points at Greenstead and Shrub End. In these agreements the operators sign up to the use of Ultra Low Sulphur Diesel fuel and to use modern buses compliant with EU emissions legislation.

It should be noted, that whilst ECC is able to and does specify low-emission buses on its main contracted services, its influence on the bulk of bus services which are commercially operated is limited to voluntary partnership working whereby roadside infrastructure is provided by the Council on routes where the operators have agreed to run modern buses, as mentioned above. The potential for active financial involvement by the Council in bus operators' fleet renewal programmes for competitive commercial services is constrained by competition legislation.

GM3: CBC will continue to work together with ECC and the bus operators to improve public transport services and encourage the use of more sustainable transport modes.

6.2.4 Introduce A133 Colchester Central Corridor Improvements

The A133 Corridor is a key radial route into Colchester and suffers at peak times from congestion. The 2nd Local Transport Plan proposes junction and link capacity improvements along this corridor and includes bus priority measures. These priority measures are expected to improve bus service reliability and help encourage modal shift to public transport.

With respect to Brook Street (AQMA), the proposed improvements to the Ipswich Road junction will be of particular significance to improvements in traffic flows.

GM4: CBC will continue to work together with ECC to deliver and promote the planned improvements to the A133 Colchester Central Corridor.

6.2.5 Encourage Uptake of Travel Plans

A Travel Plan is a general term for a package of tailored measures to encourage the use of sustainable methods of transport and reduce the reliance on the private car, particularly single occupancy travel. They can be for one or a group of organisations and involve the development of a set of mechanisms, initiatives and targets that together can reduce the environmental and health impacts of travel. Using alternative fuels and home working can also be included. Travel Plans are also being developed for schools, residential developments and area-wide, including mixed use developments.

Employer Travel Plans

Colchester2020 Travel Plan Club

The Local Strategic Partnership, Colchester2020 formed a Travel Plan Club in July 2004 as part of their commitment to tackle congestion in Colchester through encouraging habit change via Work Place travel plans.

The Travel Plan Club is made up of six major employers within Colchester, ECC, CBC, Essex University, Colchester Garrison, Colchester Primary Care Trust and Essex Rivers Healthcare NHS Trust who all committed to introducing a Travel Plan within their organisation. The Travel Plan Club members meet on a monthly basis and employ a central Travel Plan Coordinator to research new initiatives and assist the club members in implementing and developing their travel plans. This ensures that the Travel Plans introduced are consistent across all organisations.

The members have introduced a number of initiatives, schemes and marketing information individually and as a group to encourage staff in their organisations to consider alternative transport modes to the single occupant car.

Parking Constraint

Charges to park for staff have been introduced at CBC, Essex University and Essex Rivers Healthcare NHS Trust as a means of discouraging driving and as an income generator to invest in Travel Plan initiatives to encourage habit change. CBC charges 50p a day, Essex University charge a registration fee that is a % of salary and 5p an hour during term time, and Essex Rivers have introduced a % of salary charge. By implementing a pay as you go scheme, CBC and Essex University give staff more incentive to use other forms of transport combined with travelling to work by car.

Bus Travel

2020 organisations and First jointly subsidise Colchester Borough Card inner and outer zones and First season tickets providing a discount to staff of 50%. This is on offer at CBC, Essex Rivers Healthcare Trust and the PCT. The University has its own discounted travel pass arrangements with First called the Uni card. The Travel Plan club have also developed a commuter bus map that is available publicly as well as to members.

Train Travel

CBC has recently introduced a train discount of 35% off season ticket passes for staff jointly funded with 'one' The scheme has the potential to be rolled out to other member organisations.

Season ticket loan schemes

CBC have introduced an interest free season ticket loan scheme to encourage staff to commit to using public transport through purchasing longer season tickets. Other members are considering the introduction of the scheme.

Sharing transport

The Travel Plan Club have their own secure car share matching website at www.colchester2020traveltogether.com The site can also be used to find walking, cycling and taxi buddies and is available to the public as well.

Cycling

Free adult cycle training is offered in all of the member organisations, and all provide a range of facilities to support cyclists such as secure parking, showers, lockers, maps and information. The University has an active Bicycle User Group. National Bike Week is promoted every year amongst the member organisations and the public. It is anticipated that the government tax scheme for obtaining discounted bicycles will be implemented at CBC, Essex University and Essex Rivers in the near future.

Travel Information

The University, CBC and Essex Rivers provide Travel Information to their staff through intranet sites, notice boards, newsletters, and e.mail distribution lists. ECC in partnership with Essex Rivers have introduced a bespoke website dedicated to help people access travel information for getting to and around the hospital, www.getthereontheweb.org. A personal travel plan evaluation service is available to all members on request.

Targets

Targets across Colchester2020 Travel Plan Club member organisations are being considered. CBC have targets that are now up for review.

Expansion of the club

The intention is to encourage other employers within Colchester to join the club and implement Travel Plans so that promoting sustainable transport and habit changes reaches a wider range of people and becomes a key part of organisations' culture.

The Colchester Local Plan also requires major development which would significantly increase travel to produce travel plans. This is considered further in the land use planning section below.

School Travel Plans

In September 2003 the Government published 'Travelling to School: An Action Plan' which set out its aims of reducing car use on the school run, and to promote walking, cycling, car sharing and bus travel. The Government also set local authorities a target for all schools in their areas to have a School Travel Plan by 2010.

The 2nd LTP Objective is for all schools to have a school travel plan and increase the number of children walking and cycling to school by the end of the 2nd LTP period (2010/11). Annual funding allocations are made to support the 'Safer routes to school' schemes and support school Travel Plans. A School Travel Plan Co-ordinator has been appointed by Essex County Council to support schools with implementation of their Travel Plans.

The schools in closest proximity to Brook Street are discussed below:

- St James Primary School is the closest school to Brook Street. This school does not currently have a Travel Plan. The car journey data suggests 22 car journeys being made out of a total 81 travel journey replies received. However, this data is not 100% complete as non Travel Plan schools are not requested to submit travel mode data via the school census.
- St Thomas More Primary School (Priory Street) submitted a Travel Plan in 2005. There are 120 car journeys, out of the total 185 travel journeys recorded. A target was set to reduce car journeys from 36% to 30% by July 2006. Data is not currently available to confirm whether this target has been met.
- St Georges Junior School (Canterbury Road) submitted a Travel Plan in 2006. There are 90 car journeys, out of the 256 travel journeys recorded. A target has been set to reduce car journeys from 16% to 10% by November 2007 and to 6% by November 2008.
- St Georges Infant School (Barrington Road) submitted a Travel Plan in 2007. The car journey data suggests 21 car journeys being made out of the 83 travel journeys recorded, but this data is not 100% complete, as the Plan was not listed as submitted at the time of the school census. A target has been set to increase % of pupils walking and cycling by 5% by 2008.

GM 5: CBC will continue to implement and review the Council Travel Plan and encourage uptake of sustainable modes of transport. CBC will continue to work together with ECC, the LSP and other partners to encourage the uptake of Employer and School Travel Plans within the Borough, and particularly where likely to impact on the Brook Street AQMA.

6.2.6 Improve Emissions Standards for Council Fleet and Public Service Vehicles

This measure would lead to reductions in emissions of NO_x by improving emissions standards of vehicles in the public service sectors.

Bus Quality Partnerships

Bus Quality Partnerships are proposed to be further developed in Colchester through the 2nd Local Transport Plan. The potential to explore improvements in emissions standards through Quality Bus Partnerships is potentially high, such as through increased fleet renewal. In these agreements the operators sign up to the use of Ultra Low Sulphur Diesel fuel and to use modern buses compliant with EU emissions legislation.

However, it should be noted, that whilst ECC is able to and does specify low-emission buses on its main contracted services, its influence on the bulk of bus services which are commercially operated is limited to voluntary partnership working whereby roadside infrastructure is provided by the Council on routes where the operators have agreed to run modern buses, as mentioned above. The potential for active financial involvement by the Council in bus operators' fleet renewal programmes for competitive commercial services is constrained by competition legislation.

Taxis

With respect to taxi emissions, consideration could be given to setting minimum emissions standards for taxis through a review of the current licensing system.

CBC currently licence 131 Hackney Carriages (operating from ranks and can be hailed in the street) and 507 Private Hire vehicles (pre-booked bookings). These trades have been recognised as being part of the Public Transport infrastructure by the Department for Transport. Hackney Carriages rank at the Colchester North Railway Station, in the High Street and at the bus station in Queen Street, because of the direction of flow of traffic around the town they have to use East Hill, Brook Street, Queen Street and St Botolph's Street in order to access the western, eastern, southern and western sides of Colchester. Hackney Carriage trade will additionally be operating from taxi ranks to be provided at the new bus station and Colchester Town railway station when the redevelopment of the St Botolph's Street area takes place.

CBC has recently renewed their vehicle conditions which now include a condition:-
"All newly registered or re-registered vehicles, with the exception of limousines or vintage cars, must run on unleaded fuel, or an alternative environmentally fuel such as LPG or diesel."

All vehicles to be licensed by CBC have to pass an initial inspection to VOSA MOT plus standards and are further inspected to the same level once, twice or three times a year dependent on their age.

Council fleet and contractor vehicles

The scope for improvements in the Council fleet and for contractor vehicles can be investigated through the Council Travel Plan and contract renewal/review. The Government is keen for local authorities to demonstrate their commitment to delivering cleaner air by leading by example and therefore the implementation of the Council Travel Plan and improving the Council's fleet emissions are key measures to take forward in the Plan.

With respect to the Council fleet emissions, Colchester's New Transport Strategy, July 2001; T25 under 'New Technology' states:

"Standards of air quality, better than the minima prescribed by the Government, will be sought initially by the use of clean engines and possibly new fuels in Council vehicles, all vehicles contracted to the council, and private vehicles used on Council business. Incentives may be given for the use of new fuels, for example subsidised parking in the Council's car parks for alternative fuel users, and bus operators required to meet the most recent adopted air quality standards. Particular attention will be paid to the enforcement of statutory controls."

Every effort is made to ensure the best environmental option with respect to the Council fleet. The fleet uses bio diesel and as with most large fleets the most advanced diesel engines are preferred. Suitable alternatives for LGV vehicles are as yet to be made available.

GM 6: CBC will continue to work with ECC and other partners to deliver improvements in emissions standards, where practicable.

6.2.7 Review of Parking Policy within Colchester

The review of parking policy for Colchester Town Centre is tied in with the regeneration in the area and introduction of the proposed new Park and Ride schemes for the town. The review includes reduction in surface area car parks in the Town Centre and parking charges.

As part of the St Botolphs Quarter regeneration town centre surface parking will be closed and redeveloped. Options to provide some temporary replacements are under consideration. In the medium to long term the town's public parking stock is likely to increase to cater for the planned growth in residents and visitors. Included in this are the plans for park and ride sites to serve the town.

As part of the LDF process, consideration will be given to appropriate levels of parking in all areas and across all land uses.

GM 7: CBC will continue to work with ECC and other partners to deliver a comprehensive package of parking measures for Colchester.

6.2.8 Improve Interchange Facilities

The 2nd LTP includes proposals to improve access to railway stations, interchanges and links to towns within the County. This is to ensure increased access to services and encourage use of more sustainable transport modes.

In Colchester, improvements will be secured through the 2nd Local Transport Plan funding bids in addition to funding from the major developments proposed in Colchester. This will include the redevelopment and relocation of Colchester bus station. Improvement of Colchester's main rail station and Hythe station are also proposed.

GM 8: CBC will continue to work together with ECC and other partners to deliver and promote the improvement of key interchanges.

6.2.9 Implementation of the Colchester Freight Strategy

Colchester Borough and Essex County Councils commissioned the Colchester Town Centre Freight Study to consider all aspects of freight and servicing requirements of Colchester's town centre businesses, including the possibility of changes to the town's loading times, shared loading areas and better information for delivery drivers.

As part of this work businesses were asked for details about their deliveries to see what needs to be done to improve the situation for them and help improve the town centre environment. This will involve organisations working together to help make the improvements happen and implement the recommendations of the Study.

ECC have also produced a Route Management Strategy, which provides a traffic route hierarchy for freight to help minimise the impact on the environment, especially through sensitive (residential) areas of which Brook Street can be considered as relevant in this regard. The functional route hierarchy is available on the ECC website www.essexcc.gov.uk. Brook Street is designated as a link road, while the A134 corridor is designated as a radial feeder, which is considered as a higher class of road.

With respect to construction vehicles, there is no overarching construction traffic route hierarchy policy in Colchester. However, the routes for HGV traffic with respect to the construction phase of new development are determined by Essex County Council on a site by site basis. With respect to Brook Street, this is considered as a sensitive route and therefore where development is further afield (where development is directly served onto Brook Street, access would be required), alternative routes are considered. It should be noted that consideration to impacts on other routes also needs to be made when making such decisions.

GM 9: CBC will continue to work with ECC and other partners to deliver improvements in freight management.

6.2.10 Cycle and Walking Strategies

Regional and County strategies are in place as well as local policies to improve cycling and walking facilities throughout the Borough and increase uptake. CBC and ECC are working to enhance and expand the pedestrian and cycle route network and

associated facilities, with funding from the 2nd Local Transport Plan and developers to encourage more journeys to be made by these modes.

Quality cross town cycle routes serving key land uses will be provided, adding to the existing network, and improving the level of maintenance of this. Particular consideration will be given to improvements to the pedestrian network, especially to and within the town centre.

The uptake of cycling is encouraged through the provision of information for the public e.g. through the development of a Cycling in Colchester map to provide whole-route information and cycle training. Cycle training is provided through ECC Road Safety and School Travel Plan development, in addition to training provided through the Colchester2020 Travel Plan Club for member organisations using Cycle Training East (www.cycletrainingeast.org.uk) and the nationally recognised three tier standard. Bike maintenance classes are also provided.

The 2020 car share scheme below also has a walking and cycling buddy facility.

GM 10: CBC will continue to work with ECC and other partners to improve the facilities for cycling and walking within Colchester and encourage greater uptake.

6.2.11 Car Share Schemes

Both the Essex-wide car share scheme, www.essextravelBUdi.com, and Colchester-based scheme, www.colchester2020traveltogether.com, allow the public along with staff/visitors/students of Colchester2020 member organisations to securely search for people to share their car journey with. Both also have facilities to search for matching journeys on foot, by bike and taxi, aim to encourage and enable more efficient travel and transport. .

GM 11: CBC will continue to work with partners to actively support and promote the Colchester2020 car share scheme and ECC will continue to support and promote the Essex-wide and Colchester2020 schemes, to encourage greater uptake.

6.2.12 Land Use Planning

Section 3.1 summarises the main Colchester Local Plan (2004) policies which will contribute to securing air quality improvements. These will be considered within CBC's emerging LDF.

GM 12: All relevant CBC Departments, including Environmental Control, Planning Policy and Development Control, will continue working closely to ensure that air quality is taken into account in the planning process when considering future land uses, particularly with sites in or close to AQMAs or in areas marginally below air quality objectives.

Land use planning has a key role in delivering sustainable transport systems within the area by considering and influencing the accessibility, location, scale, density, design and mix of development and encouraging alternative modes of travel. The Local Plan requires major development which would significantly increase travel to implement travel plans.

The table below shows the most recently signed Section 106 planning applications with a travel plan condition attached in Colchester. ECC are working closely with Colchester Zoo, who are developing a voluntary travel plan for their staff and visitors.

The threshold for a commercial development over which Travel Plans are required is 50 employees or more, or where the proposal is considered as likely to cause a significant impact on the highway network. Annual monitoring is undertaken by ECC to assess progress with Travel Plan implementation. A non-refundable charge of £3000 is now made for annual monitoring and a dedicated member of staff is being employed for this purpose.

Agreement Reference	Common Name	Date Signed
COL000901	Colchester Garrison	30-Jun-03
COL101903	Tufnell Way,	07-May-04
COL104203	Land to the East of Cuckoo Farm	07-May-04
COL130602	Former Albany Laundry site at Distillery Lane	10-Feb-04
COL170102	Colchester General Hospital, Turner Road	30-Jun-04
COL201702	Land at London Road, Stanway	23-Sep-04
COL215603	land at Ballantyne centre, Hawkins Road	19-Aug-05
COL089106	Part of the land known as Stane Park, Stanway	13-Jun-06
COL205606	Land at Tollgate West, Stanway	03-Jan-07
COL205706	Land at London Road/Tollgate West, Stanway	03-Jan-07
COL000607	Watercress Hall, Fossetts Lane, Fordham	12-Jan-07
COL023307	Colchester Institute of Higher education	23-Feb-07

Residential developments of over 10 dwellings require each household to be provided with a travel information pack. The cost for ECC to produce the pack is £20 otherwise an equivalent standard of pack must be provided by the developer. This pack includes maps of the nearest bus stops and cycling/walking routes, in addition to a voucher for a free season ticket (usually for local bus services for a minimum of 1 year). Residential developments in Colchester that ECC has produced packs for includes Mersea Homes (Horkesley Green and Wellhouse Green), Weston Homes Plc (Hawkins Road) and Knight Developments Ltd (Linnet Mews).

GM 13: CBC will continue to work together with developers, ECC and other partners to improve sustainable transport links serving new developments and secure travel plan agreements.

To provide support to local plan policies, the development of supplementary planning guidance for air quality assessments of developments and, in particular, for development which may impact on an AQMA is recommended in the Policy Guidance LAQM.PG (03). CBC currently uses the available NSCA guidance for assessing air quality impacts of developments. The Essex Air Quality Consortium, of which CBC is a member, are considering developing a County-wide planning guidance document for air quality and development control.

GM 14: CBC will develop, through the Essex Air Quality Consortium, supplementary planning guidance to assist with air quality assessments of development proposals

6.2.13 Local Air Quality Management and Pollution Control

6.2.3.1 Air Quality Monitoring

The air quality monitoring network in CBC provides more accurate information and understanding of air quality within the Borough. Continuous monitoring stations are installed at three sites within the Borough which monitor nitrogen dioxide (NO₂) (3 sites) and particulate (PM₁₀) (1 site) concentrations. A continuous NO₂ monitor was installed in the Brook Street AQMA in February 2007, which will provide more accurate information on annual mean concentrations in the AQMA as Action Plan measures are implemented. The continuous monitoring is supplemented by NO₂ passive diffusion tubes, a large number of which are within the Brook Street AQMA.

GM 15: CBC will continue the commitment to undertake local air quality monitoring within the Borough to ensure a high standard of data is achieved to assess against air quality objectives

6.2.3.2 Promotion and Education

It is important that information on air quality is provided in a clear and accessible way. The Council web site <http://www.colchester.gov.uk/> provides details on air quality within the Borough and LAQM Review and Assessment Reports are available for viewing.

GM 16: CBC will make details of the Action Plan measures and annual progress reports available on its Website to ensure accessibility to the consultation and implementation process.

CBC is a member of the Essex Air Quality Consortium (EAQC) which is made up of representatives from the County Council, District and Borough Councils, Unitary Authorities, University of Essex, the Environment Agency, Essex Strategic Health Authority and BAA Stansted. The Consortium has launched a website which provides detailed information about air quality in Essex <http://www.essexcc.gov.uk/microsites/airessex/about.htm>.

The Consortium co-ordinates a county-wide air quality monitoring network, the Essex Air Quality Network, which is funded in partnership with all the Essex District authorities. The EAQC represents the views of Essex at regional and national Air Quality Management Groups. The EAQC is also involved in a number of European air quality studies, including investigations into indoor air quality.

A State of the Air report has been produced which summarises the results of the Review and assessment work being done around the County. A more general leaflet about air quality has also been produced.

GM 17: CBC will continue to work together with the Essex Air Quality Consortium on air quality studies within the County to raise the profile of air quality in Colchester and County-wide.

6.2.3.3 Pollution Control

Prescribed Industrial Processes are regulated by CBC and the Environment Agency under the Environmental Protection Act 1990 Part I A & B and subsequent Pollution Prevention and Control Regulations 2000. There are 51 prescribed Part B/A2 Processes in Colchester regulated by CBC and one A1 Processes regulated by the Environment Agency.

With regard to nuisance emissions from unregulated processes, Statutory Nuisance is enforced by Environmental and Public Health Services under the Environmental Protection Act 1990 Part III and this controls smoke, dust, fumes or gas emissions from commercial and domestic premises which are causing a nuisance or are prejudicial to health. CBC has an Enforcement Policy in place to ensure that, where the Local Authority has jurisdiction, effective measures are enforced against persons responsible.

GM 18: CBC will continue to proactively enforce industrial control and nuisance legislation to minimise pollutant emissions from these sources in Colchester.

6.2.14 Energy Management

6.2.4.1 Domestic energy use

CBC is working in partnership with the Essex Energy Efficiency Advice Centre to promote increased energy efficiency in residential properties in the Borough. The Essex Energy Efficiency Advice Centre is an independent, non profit making agency offering free, impartial, and locally relevant energy efficiency advice to all home-occupiers.

The Essex Energy Efficiency Advice Centre offer free energy efficiency advice to small and medium sized businesses throughout the county. They can signpost suitable companies to grants/interest free loans of up to £50,000.00 to enable energy saving measures being installed to cut fuel bills.

Their aim is to reduce carbon emissions by assisting in identifying practical and economical ways of eliminating fuel poverty and energy waste, and enable access to real sources of help and funding to enable implementation of those measures.

Project management resources are available both to private and social landlords to partner energy efficiency strategies in insulation and heating, including CHP and Solar.

Their work includes:

- DIY Home Energy Checks (HECs) and reports;
- Bespoke presentations;
- Training in energy efficiency;
- Promotional and marketing material;
- Advice on national and local grants, offers and Energy Saving Trust (EST) initiatives;
- Co-ordination of events and seminars promoting home energy efficiency.

Affordable Energy is the new Grant Scheme for Private Households in the Eastern area. It is run by Essex Energy Efficiency Advice Centre in conjunction with Local Authorities and brings discounted heating and grant assisted insulation to householders who would not normally qualify for a grant.

Affordable Energy has pre-negotiated discounted schemes for Heating, Insulation and Solar Hot Water systems with local installers and has obtained discounts and grant funding. All of the Installers are accredited and offer guaranteed work at greatly reduced prices. This scheme is available for home owners and tenants.

6.2.4.2 Building Control

Building Control can contribute to the development of policies for air quality improvement through the promotion of emission-reducing technologies in new developments and buildings.

The Building Control Service has a statutory responsibility to ensure that new building works within the Borough meet minimum technical standards in relation to health, safety, welfare and energy conservation, as prescribed under the Building Regulations 1991. The Legislation sets out substantive requirements and technical guidance to achieve minimum standards. This technical guidance is contained in Approved Documents giving general guidance as well as practical guidance about some of the ways of meeting the requirements of the Regulations. Approved Document L, "Conservation of Fuel and Power" requires reasonable provision to be made for the conservation of fuel and power in buildings by:

- limiting the heat loss through the fabric of the building;
- controlling the operation of the space heating and hot water systems;
- limiting the heat loss from hot water vessels and hot water service pipe work;
- limiting the heat loss from hot water pipes and hot air ducts used for space heating; and
- installing in buildings artificial lighting systems, which are designed and constructed, to use no more fuel and power than is reasonable in the circumstances and making reasonable provision for controlling such systems.

Revisions to this document were introduced in April 2002. The key changes were:

- much more stringent requirements with regard to the thermal insulation of all building elements;
- new requirements in respect of controls, boilers and lighting;
- a separation of requirements in respect of domestic and commercial buildings; and with effect from October 2002, the testing of structures for air leakage.

GM 19: CBC will continue to work together with the Essex Energy Efficiency Advice Centre and other partners to promote and implement energy efficiency measures in Colchester

A summary of the proposed general Borough-wide measures to improve air quality is provided in Table 2.

Table 2 Summary Table of Action Plan Measures

Action	Description	Organisation responsible	Date to be achieved by	Cost/Funding	Air quality improvement in AQMAs	Other potential impacts	Performance Indicator	Rank (based on cost-effectiveness)*
Direct Measures for the Brook Street AQMA								
DM1	Investigate traffic management improvements for Brook Street	ECC/Developers	12 months to investigate feasibility and develop implementation programme	TBC	High	Reduction in congestion; improved journey times; better quality environment	Outcome of feasibility study introduction of improvement schemes	1=
DM2	Investigate the use of Traffic Regulation Orders	ECC/CBC		TBC	High	Reduction in congestion and noise; better quality environment	Outcome of feasibility study Introduction of TRO	1=
DM3	Investigate the use of NO _x reducing paving and paints in the north section of Brook Street	CBC		Low (Funding TBC) 1000m ² paving £60,000	Trials ongoing	N/A	Introduction of NO _x reducing paving and/or paint scheme	3

The costs are provided as: 'Low' (<£1 million); 'Moderate' (between £1 million – £5 million); and, 'High' (greater than £5 million).

The air quality improvements are provided as: 'Low' (<0.2µg/m³); 'Moderate' (between 0.2 – 1 µg/m³); and, 'High' (greater than 1 µg/m³).

The timescales are provided as: short term (1-2 years), medium term (2-5 years), long term (>5 years)

Table 2 (Continued) Summary Table of Action Plan Measures

Action	Description	Organisation responsible	Date to be achieved by	Cost/ Funding	Air quality improvement in AQMAs	Other potential impacts	Performance Indicator
General Measures to Improve Air Quality Borough-wide							
GM1	CBC will continue to work with ECC and other partners to deliver the regeneration programmes in Colchester.	ECC/ Developers	2021	Developer	Low	Reduction in congestion; improved journey times; better quality environment	Implementation of the regeneration schemes
GM2	CBC will continue to work with ECC and other partners to deliver and promote the Park and Ride and "Park and Rail" Schemes.	ECC	Park & Ride 2010 onwards	High LTP Major	Low	Potential reduction in noise; reduced congestion; safer roads; improved town centre environment	Implementation of the Park and Ride and "Park and Rail" Schemes. Modal shift from Private car for whole journey to use of P&R
GM3	CBC will continue to work together with ECC and the bus operators to improve public transport services and encourage the use of more sustainable transport modes.	ECC/Public transport operators	Ongoing	Moderate LTP/ Developer	Low	Potential reduction in noise; reduced congestion; safer roads; increased public transport use	Implementation of the improvement schemes. Passenger numbers.
GM4	CBC will continue to work together with ECC to deliver and promote the planned improvements to the A133 Colchester Central Corridor.	ECC	Implementation of Short term measures 2009-11, long term post 2010 following further modelling, submission for funding to Government, confirmation of and consultation on preferred options.	High LTP Major	Low	Potential reductions in journey time for public transport users; reduced congestion; better quality environment	Completion of the improvement scheme. Journey time/modal split of journeys along and across the corridor.
GM5	CBC will continue to implement and review the Council Travel Plan and encourage uptake of sustainable modes of transport. CBC will continue to work together with ECC, the LSP and other partners to encourage the uptake of Employer and School Travel Plans within the Borough, and particularly where likely to impact on the Brook Street AQMA	CBC/ECC	Ongoing (LTP Target: all schools by 2010/11; 60 largest employers)	Moderate LTP/ Developer	Low-Moderate	Potential reduction in journey time, through reduced congestion and increased walking, cycling and public transport uptake	Number of new travel plans in place. Modal split of employees/resident s/students etc in areas covered

The costs are provided as: 'Low' (< £1 million); 'Moderate' (between £1 million – £5 million); and, 'High' (greater than £5 million). The air quality improvements are provided as: 'Low' (<0.2µg/m³); 'Moderate' (between 0.2 – 1 µg/m³); and, 'High' (greater than 1 µg/m³). The timescales are provided as: short term (1-2 years), medium term (2-5 years), long term (>5 years)

Table 2 (Continued) Summary Table of Action Plan Measures

Action	Description	Organisation responsible	Date to be achieved by	Cost/ Funding	Air quality improvement in AQMAs	Other potential impacts	Performance Indicator
GM6	CBC will continue to work with ECC and other partners to deliver improvements in emissions standards, where practicable.	CBC/ECC/ Public transport operators	Ongoing	TBC	Low - moderate	Socio-economic implications of increased costs to transport operators, contractors and CBC.	Number of new/improved vehicles within fleets
GM7	CBC will continue to work with ECC and other partners to deliver a comprehensive package of parking measures for Colchester.	CBC/ECC/ partners	Ongoing	TBC	Low - moderate	Potential reduced congestion; Socio-economic implications of increased charges.	% reduction in surface area parking; reduction in parking permit applications
GM8	CBC will continue to work together with ECC and other partners to deliver and promote the improvement of key interchanges.	CBC/ECC/ public transport operators	Ongoing	Low LTP/ Developer	Low	Potential reduction in noise; reduced congestion; safer roads; better quality environment	Implementation of the improvement schemes. Customer numbers and/or satisfaction.
GM9	CBC will continue to work with ECC and other partners to deliver improvements in freight management.	CBC/ECC/Tow n Centre Partnership/ other partners	Ongoing	TBC	Low	Potential reduction in noise; reduced congestion; safer roads	New freight management measures in place.
GM10	CBC will continue to work with ECC and other partners to improve the facilities for cycling and walking within Colchester and encourage greater uptake.	CBC/ECC	Ongoing	Low LTP	Low	Reduced congestion; health benefits; better quality environment	% modal shift to car share/public transport/ walking/ cycling Number miles new cycle lanes/ routes. Amount of additional cycle parking.
GM11	CBC will continue to work with partners to actively support and promote the Essex-wide car share and Colchester2020 car share schemes, to encourage greater uptake.	CBC/ECC/ Colchester 2020	Ongoing	Low CBC existing budgets	Low	Reduced congestion	Number new joiners to share schemes
GM12	All relevant CBC Departments, including Environmental Control, Planning Policy and Development Control, will continue working closely to ensure that air quality is taken into account in the planning process when considering future land uses, particularly with sites in or close to AQMAs or in areas marginally below air quality objectives.	CBC	Ongoing	Low CBC existing budgets	Low	Health benefits for residents in new development proposals	Number planning applications with air quality conditions/ assessments

The costs are provided as: 'Low' (up to £1 million); 'Moderate' (between £1 million – £5 million); and, 'High' (greater than £5 million).

The air quality improvements are provided as: 'Low' (<0.2µg/m³); 'Moderate' (between 0.2 – 1 µg/m³); and, 'High' (greater than 1 µg/m³).

The timescales are provided as: short term (1-2 years), medium term (2-5 years), long term (>5 years)

Table 2 (Continued) Summary Table of Action Plan Measures

Action	Description	Organisation responsible	Date to be achieved by	Cost/ Funding	Air quality improvement in AQMAs	Other potential impacts	Performance Indicator
GM13	CBC will continue to work together with developers to improve sustainable transport links serving new developments and secure travel plan agreements.	CBC/ECC/developers/transport providers	Ongoing	Low CBC existing budgets	Low	Reduced congestion	Number new travel plans, no of homes within 400m of a bus stop and frequent bus route
GM14	CBC will consider developing, through the Essex Air Quality Consortium, planning guidance to assist with air quality assessments of development proposals.	CBC	TBC	Low	Low	Reduction in nuisance complaints	Completion of planning guidance
GM15	CBC will continue the commitment to undertake local air quality monitoring within the Borough to ensure a high standard of data is achieved to assess against air quality objectives.	CBC	Ongoing	Low CBC Existing budgets	Low	Enable effective monitoring and evaluation of progress	Number monitoring sites % data capture
GM16	CBC will make details of the Action Plan measures and annual progress reports available on its Website to ensure accessibility to the consultation and implementation process.	CBC	Ongoing	Low CBC Existing budgets	Low	Improve awareness	Availability of recently published reports on the Website
GM17	CBC will continue to work together with the Essex Air Quality Consortium on air quality studies within the County to raise the profile of air quality in Colchester and County-wide	CBC	Ongoing	Low	Low	Improve awareness	Number promotional activities undertaken with the Consortium
GM18	CBC will continue to proactively enforce industrial control and nuisance legislation to minimise pollutant emissions from these sources in Colchester.	CBC	Ongoing	Low CBC Existing budgets	Low	Reduction in nuisance complaints	BVPI for upgrade of permitted industrial processes
GM19	CBC will continue to work together with the Essex Energy Efficiency Advice Centre to promote and implement energy efficiency measures in Colchester.	CBC	Ongoing	Low	Low	Improve energy efficiency; reduce costs	% improvement in energy efficiency Standard Assessment Procedure rating

The costs are provided as: 'Low' (< £1 million); 'Moderate' (between £1 million – £5 million); and, 'High' (greater than £5 million).

The air quality improvements are provided as: 'Low' (<0.2µg/m³); 'Moderate' (between 0.2 – 1 µg/m³); and, 'High' (greater than 1 µg/m³).

The timescales are provided as: short term (1-2 years), medium term (2-5 years), long term (>5 years)

7 IMPLEMENTATION AND MONITORING

CBC will work jointly on the action plan measures with its partners including ECC, transport operators, schools and local businesses. To secure the necessary air quality improvements there must be involvement by all local stakeholders and CBC will actively work to encourage community participation in the process.

The implementation and effectiveness of the Action Plan will be carefully monitored through monitoring of nitrogen dioxide at relevant receptor locations within the AQMA. In addition, traffic flow changes on the key roads will also be assessed through the review and assessment process, and the uptake of local measures such as Travel Plans will be monitored. Indicators have been provided for the general measures to be undertaken by the Council to monitor progress annually.

Targets and indicators have also been established through the 2nd Local Transport Plan. The below are those specific to the air quality shared priority, although other indicators relating to congestion and accessibility shared priorities will also be of relevance.

- Air quality (Shared priority) Pollution levels in declared AQMAs (LTP8)
Target: No AQMAs by 2010/11 based on 59 sites
- Proxy indicator: Change in area wide vehicle km (LTP2)
Target: Limit to 20% increase by 2010/11

There will be regular review and assessment of the action plan proposals to evaluate progress and this will be reported annually, including through LAQM and 2nd Local Transport Plan progress reports.

Over the next 12 months an Implementation Programme will be developed in partnership with ECC. This programme will further investigate Direct Measures, including further environmental modelling of the options, further traffic assessment (including traffic flow and queue length profiling), along with identification of a 24 hour profile of local air quality and which Direct Measures to implement.

Traffic growth assumptions used in the Further Assessment will also need to be revisited, with sensitivity testing being undertaken before any measures are implemented.

The programme will also identify key milestones, funding sources and responsibilities in advancing the Brook Street Air Quality Action Plan.

8 DEFRA ACTION PLANNING REQUIREMENTS COMPLIANCE CHECKLIST

WORK AREA	CONSIDERED/INCLUDED	LOCATION ACTION COMMENTS	IN PLAN/
Adherence to Guidelines and Consideration of Policies			
Statutory Consultees consulted?	Yes	Page 19	
Consulted with other Local Authorities and internal departments?	Yes	Page 19	
Statement of Pollutant causing AQMA?	Yes	Page 6	
Principle sources of pollutants identified?	Yes	Page 6	
Have other local authorities' plans and policies been considered?	Yes	Page 10	
Options timetable included?	Yes	Pages 40 - 43	
Have options been costed?	Yes, where possible at this stage	Pages 40 - 43	
Have the impacts been assessed?	Yes, where possible at this stage	Pages 40 - 43	
Checklist of Measures			
Have options been considered?	Yes	Pages 40 - 43	
How many options considered?	4 Direct; 19 General	Pages 40 - 43	
Transport impacts assessed?	Yes, where possible at this stage	Page 7	
Have air quality impacts been assessed modelled or measured?	Yes, where possible at this stage	Page 7	
Have socio-economic impacts been assessed?	Qualitatively	Pages 40 - 43	
Have other environmental impacts been assessed?	Qualitatively	Pages 40 - 43	
Have costs been considered?	Yes, where possible at this stage	Pages 40 - 43	
Appropriateness and Proportionality			
Do measures seem appropriate to the problem?	Yes, but further investigation required		
Have the measures been assessed?	Yes	Pages 40 - 43	
Are the measures likely to succeed?	Further investigation required		
Have wider impacts been assessed?	Qualitatively	Pages 40 - 43	
Was the costing method appropriate?	Costing methodology as per guidance LAQM.PGA (05)	Page 24	
Is it likely that the AQMA objective will be met?	Further investigation required	Page 3	
Do the chosen options comply with Government Policies?	Yes		
Implementation			
Are measures realistic?	Yes, but further investigation required		
Have responsibilities been assigned to the relevant party?	Yes	Pages 40 - 43	
Does the assigned party have the necessary powers?	Yes		
Is the financing secure and identify who pays?	Funding to be identified for direct measures	Page 18	

9 GLOSSARY OF TERMS

Abbreviation	Full name
AQMA	Air Quality Management Area
AQS	Air Quality Strategy
BAT	Best Available Technology
CBC	Colchester Borough Council
DEFRA	Department for Environment, Food and Rural Affairs
DETR	Department for Transport and Regions
DOE	Department of the Environment
ECC	Essex County Council
HDV	Heavy Duty Vehicles
HGV	Heavy Goods vehicles
HTCI	Historic Town Centre Improvements
LAQM	Local air quality management
LDD	Local Development Documents
LDF	Local Development Framework
LDV	Light Duty Vehicles
LEZ	Low Emission Zone
LGV	Light Goods Vehicles
LSP	Local Strategic Partnership
LTP	Local Transport Plan
NAQS	National Air Quality Strategy
NO ₂	Nitrogen dioxide
NO _x	Oxides of nitrogen
NSCA	National Society for Clean Air
PM ₁₀	Fine particle matter less than 10µm diameter
ppb	Parts per billion
SO ₂	Sulphur dioxide
µg/m ³	Micrograms per cubic metre
UTMC	Urban Traffic Management Control
VMS	Variable Message Signage

10 REFERENCES

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DEFRA (2003) Policy Guidance LAQM.PG(03)

DETR (2000) The Air Quality Strategy for England, Scotland, Wales and Northern Ireland – Working together for Clean Air, The Stationery Office

DETR (2000) The Air Quality Regulations 2000, The Stationery Office

DOE (1997) The United Kingdom Nation Air Quality Strategy, The Stationery Office

Colchester Borough Council (2002) Colchester Borough Local Plan (2004)

Local Strategic Partnership (Colchester2020) (May/June 2007) Colchester's draft Sustainable Community Strategy

Colchester Borough Council (2005) Colchester Strategic Plan 2006 - 2009

Colchester Borough Council (2001) Colchester's New Transport Strategy

Colchester Borough Council and Essex County Council (2004) Transport for Colchester

EERA (2004) East of England Plan (Regional Spatial Strategy)

Essex County Council (2001) Local Transport Plan 2001/2 – 2005/6

Essex County Council (2006) Local Transport Plan 2006– 2011

NSCA (2000) Air Quality Action Plans

NSCA (2001) Air Quality: Planning for Action

APPENDIX I CONSULTATION OUTCOME

Consultation with internal Departments within CBC and with partners ECC, have led to the formulation of this Action Plan. Discussions through the Brook Street AQMA Air Quality Steering Group have led to further changes to the draft Plan and have been incorporated directly into the document.

The following provides a summary of the responses to the initial round of external consultation on the draft Plan in 2006, been which has taken into account in the development of the Plan where possible.

Consultee	Summary of commentary provided
Department for Environment, Food and Rural Affairs	<p>“- The final Plan should include a clear indication of timescales, costs and funding sources for all measures.</p> <p>- The completion of the ranked table of measures, particularly in combination with feedback from the consultation, would be a useful addition for inclusion in the final Plan.</p> <p>- It would be useful for the final Plan to include details from the Further Assessment, showing the current level of exceedence, how far the proposed measures will go to achieve the objectives in the AQMA, and whether the LAQM objectives are likely to be met.</p> <p>- The results of the consultation and any changes made to the Plan will need to be considered and incorporated where appropriate into the final version.</p> <p>- Overall, this is a well structured draft plan which, with the addition of some further information on the extent and causes of the air quality problem and how this ties in with the proposed measures, should provide a useful mechanism towards improving air quality. The final report should include the results of the consultation exercise, and some further details on the overall levels of pollutant reduction expected due to the measures outlined, plus an assessment of whether the LAQM objectives and Directive objectives are expected to be met as a result of the proposed measures.”</p>
ECC Social Services	<p>Concern raised by Health and Safety Representative regarding symptoms being experienced by staff at the ECC premises, Pinetree Coffee House, on Brook Street. Symptoms such as sore eyes, headaches, tiredness and lethargy are considered to be linked to the traffic fumes within the AQMA.</p>
Member of Public – Mr Justin Carroll	<p>“As a resident of Brook Street, I found the proposals to improve air quality along Brook</p>

Consultee	Summary of commentary provided
	<p>Street very disappointing. Only a couple of the direct measure proposals had the potential to achieve moderate to high air quality. The widely held assumption that those using cars are going to opt for public transport instead is in my opinion wildly optimistic....</p> <p>Brook Street desperately needs some form of traffic calming measures to be implemented.</p> <p>The only way I can see a reduction in pollution is to change the usage of the road.”</p>
Member of Public –Mr and Mrs Phillips	<p>Concern raised regarding the level of traffic in Brook Street and potential growth in future. Would like to see HGVs to be stopped from using Brook Street at a cut through.</p>
Member of Public –Mr John Cutting	<p>“One of the immediate steps to reduce traffic would be to have double yellow lines all the way from the Wimpole Road junction back to the railway bridge in Brook Street...This would allow less queues going up Brook Street towards the traffic lights. Although there are two lanes often only one can queue due to parked cars. This would reduce the length of queues and waiting time for traffic. Another way to reduce traffic would be weight limits, therefore reducing lorries.”</p>
Member of Public –Mr J Green	<p>Suggestions to improve air quality:</p> <ul style="list-style-type: none"> - A charge could be made for using Brook Street - A flyover constructed from Magdalen into Barrack Street -To ease extra traffic flow, the bus lane at the bottom of Hythe Hill could be opened for all traffic again - Only eco-friendly cars allowed to use Brook Street
Member of Public –Mr M Coles	<p>Suggestions to improve air quality and reduce traffic flow:</p> <ul style="list-style-type: none"> - Block through access along Brook Street to all vehicles except emergency vehicles. This could be undertaken near the entrance to the Brooklands estate or across the bridge that spans the rail link to Colchester Town Station. - Make the street one way, and provide residential parking on one side of the street
Member of Public –Mr & Mrs Hughes	<p>Highlights historic schemes that have been considered previously to alleviate traffic problems:</p>

Consultee	Summary of commentary provided
	<ul style="list-style-type: none"> - Widen lower Brook Street on the western side - Build a road from St Botolphs to run alongside the railway line to Greenstead Road.
Member of Public –Mr Ray Rushton	<p>Concerns raised regarding health implications and pedestrian safety for residents in Brook Street.</p> <p>Concern also raised as to the timescales for which action is planned – by 2010. Urgent action is required now.</p>
Member of Public –Ms M Hodges	<p>Considers the only improvement in air quality will be a greatly reduced volume of through traffic and this does not appear to be addressed.</p> <p>Request for a public meeting for residents to voice their opinions. Asks the timescale for improving air quality and what will happen if the improvement is not met.</p>
Member of Public –Ms S Davis	<p>Suggestions to improve air quality:</p> <ul style="list-style-type: none"> -Diversion of through traffic to relieve congestion -Speed control and enforcement (speed cameras). <p>Concern raised regarding fumes, noise and safety issues in Brook Street.</p>