REPORTS FOR DECISION BY THE CABINET MEMBER FOR ENVIRONMENT

Date Issued: 25 November 2010

			Page Nos.
K	1.	Report of the Director of Change, Planning and the Environment - Approval of finalised Air Quality Action Plan for submission to Defra	1 - 163

K = KEY DECISION

A Record of Decision will be issued following the conclusion of 5 clear working days from the date of issue of the Report

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MAIDSTONE BOROUGH COUNCIL

CABINET MEMBER FOR THE ENVIRONMENT

REPORT OF ASSISTANT DIRECTOR OF ENVIRONMENTAL SERVICES

Report prepared by John Newington
Date Issued: 25th November 2010

1. **Approval of finalised Air Quality Action Plan for submission to Defra**

1.1 Key Issue for Decision

1.1.1 To consider adopting the Maidstone Town Air Quality Action Plan and approving it for submission to Defra in accordance with the statutory responsibility placed on the Council.

1.2 Recommendation of the Assistant Director of Environmental Services.

1.2.1 That the Maidstone Town Air Quality Action Plan 2010 presented in Appendix A is approved for adoption and submission to Defra.

1.3 Reasons for Recommendation

1.3.1 Maidstone Borough Council has a statutory duty to periodically review air quality within its area – a process known as Local Air Quality Management (LAQM). This process involves the assessment of both current, monitored air quality levels and future predicted air quality levels. To date, LAQM has identified the main source of air pollution in the borough is attributable to road traffic emissions due to traffic flows and congestion on key areas within the local road network, notably the M2, M20, A20, A229, A249, A26 and A274. To date 5 hotspot areas have been confirmed as exceeding the NO_2 annual mean air quality objective. In 2001 a single hotspot area along the M20 was identified, a further hotspot in and around the town centre was identified in 2005. Since then a further three hotspots have been confirmed at the Well Road/Boxley Junction, the Fountain Lane/Tonbridge road junction and the Loose road/Sutton Road (Wheatsheaf) junction.

1.3.2 To address the issues related to these five confirmed of exceedence an Air Quality management Area (AQMA) was declared in August 2008. Since then the Further Assessment (FA), which is the technical support for the Air Quality Action Plan (AQAP), has been undertaken and submitted to Defra. An Update and Screening Assessment and a

progress report have also been produced and submitted to Defra. Both the FA and USA have been used to help develop the air quality action plan (the subject of this report) which identifies measures and actions required to manage air quality within the AQMA and specifically the hotspot areas.

1.3.3 The FA and USA also identified 3 further sites potentially exceeding the annual NO_2 objective and a further and two sites which are currently being investigated for the exceedence of the hourly NO_2 objective.

1.3.4 In order to reduce pollutant levels below the Air Quality Objective levels required by European legislation, areas like Upper Stone Street requires an 88% reduction in NO2 concentrations and the Loose road/ Sutton Road junction requires a 51% reduction, whereas some junctions like the Tonbridge Road and Fountain Lane junction only require a 4.8% reduction in NO_2 concentrations to fall below the acceptable annual mean level for NO_2.

1.3.5 The AQAP sets out a series of measures which target hotspot areas in order to reduce NO_2 emissions by the required amount. However, the Council is not in a position to address these issues as many of the contributing factors are managed and influenced by other agencies. Since the declaration of the AQMA in August 2008 the Council has continued to work in partnership with internal and external stakeholders through the Air Quality and Transport Steering group. This has enabled the Council to produce annual progress reports to Defra. The proposed finalized action plan incorporates all of the schemes that are already underway and has identified new partnerships and new opportunities.

The AQAP sets out which external partners (stakeholders) are involved in the delivery of each measure and provides indicators for assessing progress in achieving the Air Quality Objectives and reporting progress annually (to both Defra and internally). As well as setting out measures specific to the AQMA, the AQAP also sets out measures for Borough wide air pollutant emissions reductions in line with the Council's sustainability aims outlined in the Sustainable Community Strategy and in support of the Council's carbon emissions reduction targets.

1.3.6 The AQAP (Appendix A) has been written with the support of the Maidstone Air Quality and Transport Steering group, many of whom are key stakeholders and partners who will need to take action to deliver this challenging programme of measures.

1.3.7 The AQAP also supports the Council's Carbon aspirations and statutory responsibilities as many measures to reduce air quality pollutants, also reduce carbon emissions.

1.3.8 The draft AQAP was approved for submission to Defra and for public consultation on the 15th April 2010 and was subsequently sent to Defra. Between April and September, The Environment and Transport Overview and Scrutiny Committee, Members, Stakeholders and public were consulted on the draft. Their responses have been collated (see Appendix 2 of the AQAP) and included in the document where appropriate. The amendments are minor and show considerable support for this action plan.

1.3.9 An update of progress regarding the Maidstone Town Air Quality Action Plan was presented to the Environment and Transportation Overview and Scrutiny Committee on the 19th October 2010. They recommended that:

a) A lead officer be included in the action plan for each action;
b) The possibility for tougher actions, including the introduction of low emissions zones, traffic orders and other tools be explored alongside the potential for bids for funding of these actions;
c) Dates of new planning documents covering air quality, such as an Air Quality Supplementary Planning Document, be notified to the Committee when known; and
d) That the final version of the plan be circulated to the Committee.

1.3.10 It is recommended that a) is rejected for practicality reasons. There are 37 lead officer from a range of external organizations and internal departments and although it may be possible to obtain consent from all of them to publish the table of measures with lead officer contact details included, it is likely that this list will be out of date as soon as it is published due to the frequency of organizational and personnel changes that take place. Therefore, it is proposed that the Maidstone air quality and transport steering group, managed by environmental health's pollution control team, be used for accessing lead officers as they are all either members of the steering group or in regular contact with the steering group. Lead Officers for measures can then be approached directly through this mechanism.

Recommendation b) has been included in measure 1.

Recommendation c) and d) will be implemented as soon as the information is available for circulation.

1.3.11 Table of changes

	Page number	Final Maidstone Town AQAP
1	1	Title Page & headers changed: "draft" removed
2	14	Section 3 Considerably redrafted to reflect planning policy changes since draft of April 2010, namely removal of the South East Plan. Updated Climate Change section to include MBC's recent involvement with the Carbon Trust's Local Carbon Management Programme.
3	22	Section 5 added sentence giving example of how the cost benefit matrix works
4	22	Replaced section 5.1 "Scenario testing of potential traffic measures in the AQMA with " Quantification of the Action Plan"
5	22	Updated Section 5.2 Health Impact Assessment
6	26	Paragraph 2 regarding the High street redevelopment - added sentence highlighting the redevelopment opportunities for air quality initiatives.
7	31	Reworded measure 31 to include walking as well as cycling
8	33	Strengthened wording for actions associated with measure 1.
9	33	Included recommendation b) from October 19th Overview and Scrutiny meeting.
10	35	Measure 10 removed reference of procurement strategy which has been approved. Strengthened actions by requiring target setting for fleet engines.
11	42	Strengthened Measure 26 by adding extra action to action to "develop quantifiable baseline statistics for both KCC & MBC"
12	40	Measure 29: removed KCC from lead Authority Column.
13	41	Measure 30 - Updated lead authority column based on comments from relevant statutory consultee.
14	50	Filled in Appendix 1
15	53	Added details of consultations in Appendix 2
16	Appendix 3	Included Final version of the Health Impact Assessment as Appendix 3
17	Appendix 4	Included copies of the public consultation leaflet and questionnaire as Appendix 4

1.4 Alternative Action and why not Recommended

1.4.1 To refuse the approval of the draft Air Quality. This is not recommended as a draft Air Quality Action Plan is due for submission

to Defra by the end of April and any refusal would delay this submission which would need to be explained to Defra.

1.4.2 Propose a different set of actions at this stage, however this is not recommended as this version has been agreed with all the key stakeholders and would result in considerable delay in driving the Action Plan forward.

Once this finalised Air Quality Action has been submitted to Defra, any changes or suggestions can be incorporated at any time through the Air Quality and Transport Steering Group and be reported to Defra in the Annual Progress report. Therefore this should not be a reason for delaying the decision.

1.5 Impact on Corporate Objectives

1.5.1 The development and implementation of the air quality action plan is an action under the key objective (2010/11): reduce carbon emissions across the borough and improve air quality

1.6 Risk Management

1.6.1 If the Air Quality Action Plan is not approved and submitted on time there could be reputational damage to the Council from Defra and key stakeholders

1.7 Other Implications

1.7.1

1.	Financial	X
2.	Staffing	X
3.	Legal	
4.	Equality Impact Needs Assessment	
5.	Environmental/Sustainable Development	X
6.	Community Safety	
7.	Human Rights Act	
8.	Procurement	
9.	Asset Management	

1.7.2 Financial

The budget for Air Quality work within Environmental Health needs to remain at present levels in order to carry out the measures proposed in the Action Plan and to enable the LAQM statutory function to continue to be carried out. However, the majority of actions within the plan are for key stakeholders to undertake. Should any specific elements of the plan require additional funding then a separate report will be made to the cabinet member.

1.7.3 Staffing

Staffing resources required for implementing the action plan will be managed within current staffing levels.

1.7.4 Environmental/Sustainable

The Action Plan will help reduce air pollutant concentrations in key hotspot areas and will also play an important role in reducing air pollutant emissions across the Borough. It is an action within the Strategic plan and also compliments the carbon emissions reduction targets.

1.8 Conclusions

1.8.1 The production of an AQAP which has been through statutory and public consultation is a statutory requirement. The Maidstone AQAP has been produced in close consultation and agreement with both internal and external stakeholders, members, community groups and the public. This finalized version should be submitted to Defra within 6 months of the draft which was submitted at the end of April 2010.

1.9 Relevant Documents

1.9.1 Appendices

Appendix A: Maidstone Town Air Quality Action Plan

1.9.2 Background Documents:

None

IS THIS A KEY DECISION REPORT?

Yes

If yes, when did it first appear in the Forward Plan?

June 2010
……..

This is a Key Decision because: It affects the Borough.

Wards/Parishes affected: All wards/Parishes.

How to Comment

Should you have any comments on the issue that is being considered please contact either the relevant Officer or the Member of the Executive who will be taking the decision.

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MAIDSTONE TOWN AIR QUALITY ACTION PLAN – APPENDIX 3.

HEALTH IMPACT ASSESSMENT OF DRAFT AIR QUALITY ACTION PLAN

TECHNICAL REPORT NO: AGGX2283747/BV/AQ/2649

October 2010

Document Control Sheet

Issue/Revision	Issue 1	Issue 2	Issue 2	
Remarks	Final Draft V1	Final	Final_V2	
Date	12 July 2010	06 August 2010	04 October 2010	
Submitted to	Sarah Jane Edwards-Bonner / John Newington	Sarah Jane Edwards-Bonner / John Newington	Sarah Jane Edwards-Bonner / John Newington	
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Signature				
Approved by	Richard Maggs			
Signature				
Project number	2283747	2283747	2283747	
File reference				

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CONTENTS

LIST OF TABLES

LIST OF FIGURES

GLOSSARY OF TERMS

Adapted and Expanded from WHO

Assessment (Appraisal) Assessment follows on from the scoping stage of a HIA, where the potential health impacts which have been identified are assessed and evaluated using the available evidence base.

Best Available Evidence Conclusive evidence of the links between, for example, socio-environmental factors and health or the effectiveness of interventions is not always available. In such cases, the best available evidence (that which is judged to be the most reliable and compelling) can be used, but with caution.

Community Participation Involving the community in an activity such as the planning of projects or carrying out a HIA.

Community Severance Existence of:

- *Physical barriers* - such as the introduction of new traffic infrastructure;
- *Psychological* or *perceived barriers* - such as traffic noise or road safety fears; and
- *Social impacts* - such as the disruption of 'neighbourhood lifestyle' or inhibition of social interaction.

Comprehensive (Maxi) HIA
A comprehensive HIA is a much more detailed rigorous exercise than a rapid or intermediate HIA. It usually involves the participation of the full range of stakeholders, an extensive literature search, secondary analysis of existing data and the collection of new data.

Concurrent HIA Concurrent HIA is carried out whilst a policy, programme or project is being implemented.

Decision Making The process of reviewing the findings and recommendations of a HIA and making choices about how they should be taken forward.

Determinants of Health Determinants of health are factors which influence health status and determine health differentials or health inequalities.

Health A state of complete physical, mental and social well-being and not merely the absence of disease or infirmity.

Health Equity Equity in health implies that everyone should have a fair opportunity to attain their full health potential and that no one should be disadvantaged from achieving this potential if it can be avoided.

Health Impact A health impact can be positive or negative. A positive health impact is an effect which contributes to good health or to improving health. A negative health impact has the opposite effect, causing or contributing to ill health.

Health Impact Assessment
A combination of procedures, methods and tools by which a policy, programme or project may be judged as to its potential effects on the health of a population, and the distribution of those effects within the population.

Health Inequality Differences in health status or in the distribution of health determinants between different population groups. Some health inequalities are

	attributable to biological variations or free choice and others are attributable to the external environment and conditions mainly outside the control of the individuals concerned.
Health Inequity	Health inequity has a moral and ethical dimension, resulting from avoidable and unjust differentials in health status.
Impact Assessment	Impact assessment is about judging the effect that a policy or activity will have on people and places.
Intermediate HIA	An intermediate HIA may combine a workshop with key stakeholders followed by desk based work to build up a more detailed picture of the potential health impacts than those which would be identified during a rapid HIA. It may involve a limited literature search, usually non-systematic, and is mostly reliant on routine, readily available data.
Mental Health	Describes either a level of cognitive or emotional wellbeing or an absence of a mental disorder.
Partnership	A group of people or organisations brought together with a common purpose.
Prospective HIA	Prospective HIA is carried out before any action has been taken, either in terms of drafting a policy, putting together an action plan or implementing it so that steps can be taken, at the planning stage, to maximise the positive health impacts of a policy, programme or project and to minimise the negative effects.
Rapid (mini) HIA	A rapid HIA is completed quickly. It may be a desktop exercise, reliant on information which is already available, or through a short workshop with key stakeholders. In either case, there is usually a minimum quantification of the potential health impacts which are identified.
Retrospective HIA	Retrospective HIA is carried out after a programme or project has been completed. It is used to inform the ongoing development of existing work.
Scoping	Scoping refers to the process of identifying the potential health impacts of a policy, programme or project before they are quantified, as in a rapid HIA. It may include reviewing the relevant literature and evidence base and collecting the views of key stakeholders, followed by the tabulation of the potential health impacts.
Screening	In relation to HIA, screening usually refers to an initial step being taken in order to determine whether a policy, programme or project should be subject to a HIA. The criteria used for this process may include, for example, the size and cost of the activity in question, the extent of any obvious or immediate health effects or the perceived extent of longer term effects.
Social Cohesion	'All that which brings people together' (European New Towns Platform) - encompasses: material conditions, passive relationships, active relationships, inclusion and equality.
Traffic Congestion	Characterised by slower speeds, longer trip times, and increased queuing.
Workshops	Workshops involve bringing together a group of people for a specific purpose. In HIA, this might include, for example, identifying key stakeholders' health concerns in relation to the policy, programme or project being addressed.

1 INTRODUCTION

1.1 Background

Part IV of the Environment Act 1995 places a statutory duty on local authorities in the UK to periodically review and assess the current and the future air quality within their area - a process known as Local Air Quality Management (LAQM). The air quality objectives that apply to LAQM are defined in Air Quality Regulations 2000[1] and Air Quality (England) (Amendment) Regulations 2002[2] for seven pollutants: benzene, 1,3-butadiene, carbon monoxide, lead, nitrogen dioxide, sulphur dioxide, particulates (PM_{10}).

Where the results of the review and assessment process highlight that problems in the attainment of health-based objectives for air quality will arise, the authority is required to declare an Air Quality Management Area (AQMA): a geographic area defined by high levels of pollution and exceedences of AQS objectives. Section 84 of the Environment Act 1995 imposes duties on a local authority with respect to AQMAs. The local authority must carry out a Further Assessment and draw up an Air Quality Action Plan (AQAP) specifying the measures to be implemented within the AQMA, and the time-scale for doing so, in order to move towards attainment of the air quality standards and objectives.

The review and assessment carried out by Maidstone Borough Council has resulted in the entire urban centre of Maidstone town to be declared as an AQMA for two pollutants, nitrogen dioxide (NO_2) and particulate matter (PM_{10}). Consequent to the declaration of AQMA, the council started the process of drawing up an AQAP for the area. In parallel to the development of draft AQAP, the council commissioned Bureau Veritas to undertake a Health Impact Assessment (HIA) for the measures and actions proposed in the draft AQAP.

1.2 What is HIA?

The World Health Organisation defines HIA as *'A combination of procedures, methods and tools by which a policy, programme or project may be judged as to its potential effects on the health of a population, and the distribution of those effects within the population'.*[3]

Health Impact Assessment (HIA) is a tool that can be used to influence policies, programmes and projects with the aim of improving the health and wellbeing of the people affected by them. HIA provides decision-makers with information on the health impacts of a given proposal through:

- Identification of positive and negative health impacts;
- Assessment of these impacts in terms of their risk, directness and distribution; and
- Recommendation of measures to reduce threats to health and promote and enhance benefits to health.

1.3 Definition of Health

It is important to recognise that HIA addresses health not only in terms of health service provision or clinical care, but also in terms of universal well-being, providing a sociological context to our understanding of the term 'health'. The World Health Organisation defines health as:

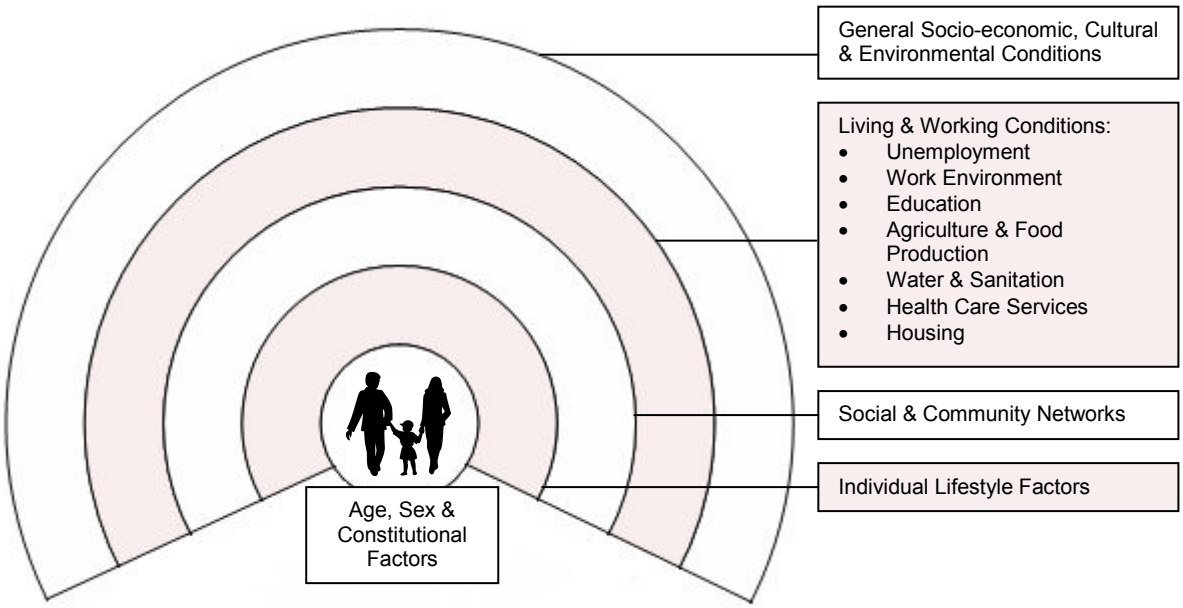
'Health is a state of complete physical, mental and social well-being and not merely the absence of disease or infirmity'.

Figure 1 illustrates the main determinants of health, adapted from Dahlgren & Whitehead[4]. The overarching layer represents the structural environment, largely determined by policy, material and social conditions in which people live and work. This is followed by a "community layer" representing the mutual support afforded to individuals by society. The decisions taken by individual members of

society are closely linked to age, sex and constitutional factors, of which policy makers have least control.

The diagram below shows that health and health inequalities are influenced by interactions between income, poverty, housing, employment, transport, environment, education, community services, local government and planning. The diversity evident in these determinants of health highlights the need to consider health from a broad and more holistic perspective.

Figure 1 - The Main Determinants of Health[4]



When we refer to health impacts, we mean the overall effects of policies, programmes and projects on the health of the population. Health impacts can have either a direct or an indirect influence. To exemplify, direct influences include exposure to pollutants whilst indirect influences include effects on the local job market and access to local amenities and open spaces. While the majority of impacts may be felt in the short-term, HIA also considers the medium and long-term effects.

1.4 HIA Policy

Improving health and reducing inequalities is a key goal for many organisations. Several international and national policies and regulations make provisions for HIA or recommend its use.

In the White Paper, "Saving Lives: Our Healthier Nation" (1999)[5], the government made a commitment to assess major new government policies for their impact on health. The aim is to ensure that the actions arising from policy would contribute to their two main public health policy aims:

- To improve the health of the population;
- To reduce health inequalities (narrowing the 'health gap').

Following on from this, as part of the White Paper, "Choosing Health: Making Healthy Choices Easier" (2004)[6], the government committed to building health into all future legislation by including health as a component in Regulatory Impact Assessment (RIA).

The Twenty-Sixth Report on "The Urban Environment" by the Royal Commission on Environmental Pollution" (2007)[7] recommended, "*Health Impact Assessments be incorporated explicitly in Sustainability Appraisals, Strategic Environmental Assessments and Environmental Impact Assessments. In order to implement this, we recommend that the UK government and devolved administrations develop a statutory framework for including Health Impact Assessments in the planning process, accompanied by appropriate guidance*".

In 2007, the Cabinet Office and the Business, Enterprise and Regulatory Reform Department (BERR) revised RIA to the current Impact Assessment (IA) process where HIA is now a Specific Impact Test (SIT) which is owned by the Department of Health (DH). This means that improving population health and wellbeing is built into all national policy.

The DH is currently working with other government departments to develop an IA tool, which will include HIA, for government policy. This specific commitment from the government on HIA is made within a wider political climate in which:

- Health gain is increasingly viewed as an important outcome, and not a by-product, of various policies and programmes, particularly those relating to social renewal and regeneration;
- Public sector services are to be provided on a basis of value for money - health gain from non-health policies represents added value;
- Public sector decision making is to be informed by the best available evidence;
- Community participation is regarded as a vital component in the shaping of public services and integral to building social capital;
- Public sector services are to be accountable to the general public and service users.

These wider objectives act as drivers for the introduction and use of HIA, which has the potential to contribute to their achievement.

To date, there is no current mechanism for establishing how health is being taken into account in policy making, whether HIA is being used, or how HIA is applied in other government departments.

1.5 What are Health Impacts?

The health impacts are the overall effects of policies, programmes and projects on the health of the population. Health impacts can have either a direct or an indirect influence. To exemplify, direct influences include exposure to pollutants whilst indirect influences include effects on the local job market and access to local amenities and open spaces. While the majority of impacts may be felt in the short-term, HIA also considers the medium and long-term effects.

1.6 Why Undertake HIA?

HIA provides a structured and inclusive approach to assessing the health impact of policies, programmes and projects. The assessment aims to minimise the negative health impacts of proposed initiatives. Opportunities to enhance or promote health are also realised in the assessment, providing decision-makers with options to strengthen and extend the positive features of a proposal.

HIA is a democratic process allowing people to participate in the development and implementation of policies, programmes and projects that may impact on their lives. The participatory approach recognises contributions from a large number of relevant people, groups and organisations. Examples of stakeholders commonly consulted include: the local community, developers, planners, government,

health workers, unions and voluntary agencies. HIA enables people from multiple sectors to work together, providing an integrated approach to policy making.

Equity is considered to be at the core of the HIA process. The distribution of health impacts on the whole population is assessed although particular consideration is given to vulnerable groups such as the young, elderly and infirm. HIA aims to realise opportunities to reduce the potential of a proposal to lead to new, or to widen existing, health inequalities.

HIA complements sustainable development proposals if the HIA is undertaken at a sufficiently early stage in the project. HIA enables both short and long term health objectives to be considered at the same level as socio-economic and environmental objectives.

A summary of the benefits associated with HIA is provided below:

- Identifies health impacts associated with a given proposal;
- Eliminates or minimises negative health impacts;
- Promotes and enhances positive health impacts;
- Encourages public participation and values the community viewpoint;
- Elevates cross-sector working;
- Provides decision-makers with the best available evidence;
- Reduces health inequalities through assessing impact distribution;
- Adaptable methodology enables HIA to be used on a wide range of projects;
- Many potential users of HIA;
- Key tool for sustainable development and resource management; and
- Recognised in several international policies and regulations.

2. AIR QUALITY IN MAIDSTONE

2.1 Description of Maidstone Borough

Maidstone is the county town of Kent and is home to 144,200 people[8]. Its population is due to increase to 158,000 by 2026, with the addition of around 11,080 homes within the next 20 years. The Borough is home to 8.8 per cent of the Kent and Medway population (2001 Census) and borders Swale, Ashford, Tunbridge Wells, Tonbridge and Malling Boroughs and Medway Unitary Authority.

Maidstone Borough Council represents the second tier of local government, being one of the local government districts of Kent. There are also 36 Parish Councils (plus 5 Parish Meetings) within the Borough, representing the third tier of local government. The Borough covers 40,000 hectares and includes the large urban area of Maidstone and a variety of rural settlements. Its countryside, set within 'the Garden of England', is of a high landscape quality and includes the Kent Downs Area of Outstanding Natural Beauty.

The main source of air pollution in the borough is road traffic emissions from major roads, notably the M2, M20, A20, A229, A249, A26 and A274. An Air Quality Management Area (AQMA) was declared in July 2008 which incorporates the whole Maidstone urban area and M20 corridor where exceedences of the annual mean objective for nitrogen dioxide (NO_2) and 24-hour mean objective for fine particulates (PM_{10}) were predicted. Maidstone depends on a large net inflow of commuters as well as an influx of school children, shoppers and tourists and suffers from significant congestion, especially on the approach roads to the town centre at peak hours. Other pollution sources, including commercial, industrial and domestic sources, also make a contribution to background pollution concentrations.

2.2 Maidstone Borough Council's Review and Assessment of Air Quality

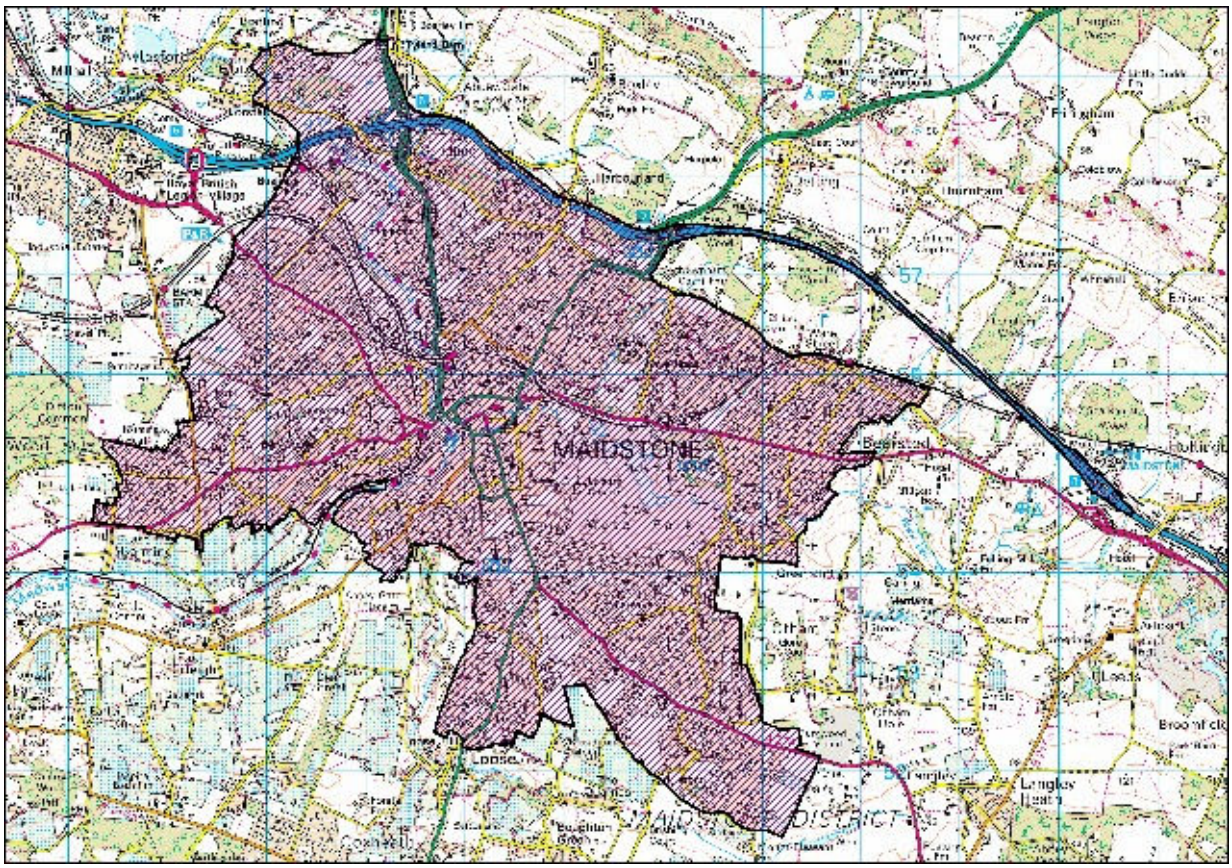
Between 1998 and 2001, Maidstone Borough Council undertook its first round of review and assessment of air quality. The conclusions of the first round were that it was necessary to declare an Air Quality Management Area (AQMA) based on exceedences of the nitrogen dioxide (NO_2) annual mean objective due to road traffic emissions on the M20. An AQMA was subsequently declared along the M20 corridor between Junctions 6 and 7.

The first phase of the second round of review and assessment of air quality, the Updating and Screening Assessment (USA), was completed in July 2003 and this provided an update with respect to air quality issues within Maidstone. The USA concluded that a detailed assessment was required for NO_2 and particulates (PM_{10}) due to emissions from road traffic in Maidstone town centre. The detailed assessment confirmed the conclusions of the USA, and Maidstone town centre was declared an AQMA in January 2005.

The third round of review and assessment, following the same stages as the second round, began with an Updating and Screening Assessment. Maidstone Borough Council completed this in June 2006, with the conclusion that a detailed assessment was required for NO_2 at the Fountain/ Tonbridge Road junction and on Well Road, and for NO_2 and PM_{10} at the junction of Loose Road and Sutton Road. The report recommended that the Council consider declaring Air Quality Management Areas at the Fountain Lane/Tonbridge Road junction, the Well Road/Boxley Road junction and at the Loose Road/Sutton Road junction based on the potential exceedences. Following extensive consultation, Maidstone Borough Council decided to declare an urban-wide AQMA with respect to the annual mean NO_2 objective and 24-hour mean PM_{10} Objective. The current M20 AQMA has been revoked and the Town Centre AQMA has been amended to include the M20 AQMA and the whole Maidstone urban conurbation. The amended AQMA was declared in July 2008, the Further Assessment was submitted

to Defra for review (November 2009) although some scenario modelling remains outstanding and the Air Quality Action Planning process is underway.

Figure 2 – Maidstone Town AQMA



2.3 Air Quality Action Plan

The principal aim of the air quality Action Plan is to minimise the effects of air pollution on human health within the local authority area using all reasonable measures, within reasonable timeframes and by working towards achieving the AQS objectives and standards. In order to comply with the AQS objectives it may be necessary to include measures beyond the boundaries of the AQMA. Some of the measures may also benefit areas not included within AQMA thereby improving the health of the population in those areas.

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 may be targeted appropriately.

An air quality Action Plan must include the following[9]:

- Quantification of the source contributions to the predicted exceedences of the relevant objectives; this will allow the Action Plan measures to be effectively targeted;
- Evidence that all available options have been considered;
- How the local authority will use its powers and also work in conjunction with other organisations in pursuit of the air quality objectives;

- Clear timescales in which the authority and other organisations and agencies propose to implement the measures within its plan;
- Where possible, quantification of the expected impacts of the proposed measures and an indication as to whether the measures will be sufficient to meet the air quality objectives. Where feasible, data on emissions could be included as well as data on concentrations where possible; and
- How the local authority intends to monitor and evaluate the effectiveness of the plan.

Maidstone Borough Council has responsibility under Section 84 of the Environment Act 1995 to prepare and submit an Action Plan to the Department for Environment, Food and Rural Affairs (Defra). The Environment Act 1995 does not prescribe any timescale for preparing an Action Plan. However, the government expect them to be completed between 12-18 months following the designation of any AQMAs. The prime responsibility for preparing and submitting the Action Plan rests with district councils. However, there is a requirement on other relevant authorities to identify proposals in pursuit of the AQS objectives within their respective responsibilities and functions.

A draft Action Plan has been developed by Maidstone Borough Council in partnership with other relevant bodies, particularly Kent County Council and the Highways Agency, to incorporate the localised measures at the AQMA. The draft Action Plan focuses on those pollutants included in Air Quality Regulations for the purpose of Local Air Quality Management, in respect of the key identified pollutant sources affecting air quality within the Council's administrative area; namely nitrogen dioxide and fine particles (PM_{10}). Specific measures to be implemented in the AQMA have been proposed as well as more general measures to be implemented borough-wide.

The draft Action Plan is currently open to public consultation, and a copy is in circulation to all relevant authorities and strategic partners and to the members of the public. 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.

2.3 Health Impact Assessment

This HIA is being undertaken at the same time as the Action Plan is being finalised. The overall aim of the HIA is to identify whether the measures proposed in the Action Plan can be enhanced to improve health and distribution of health impacts among the population of Maidstone, or require alteration to minimise any negative impacts on health and well-being.

3. MAIDSTONE COMMUNITY PROFILE

The following sections provide information about Maidstone community profile. The Maidstone community profile is compared with the profile for same parameters for England and Wells averages to provide a context and see the performance of the Maidstone community compared to the national averages. This will help to identify where benefits in the management of air quality (in the broadest sense) can overcome some of the inequalities observed from the profiling of Maidstone community undertaken here.

3.1 Demography

The mid-2007 resident population estimate for the Borough of Maidstone is 144,200[8]. The estimated population by broad age group and sex for both Maidstone and the UK is provided below. In summary, data show that the overall population of Maidstone comprises an even number of males and females. Approximately 19% of the Maidstone population is under the age of 16; 58% is aged between 16 and 59; and 23% is 60 or over. These figures correspond closely with percentages for the UK as a whole: approximately 19% of the UK population is under 16; 59% is aged between 16 and 59; and 22% is 60 or over.

Table 1 – UK and Maidstone mid-2007 estimated population by broad age group and sex (thousand)[8]

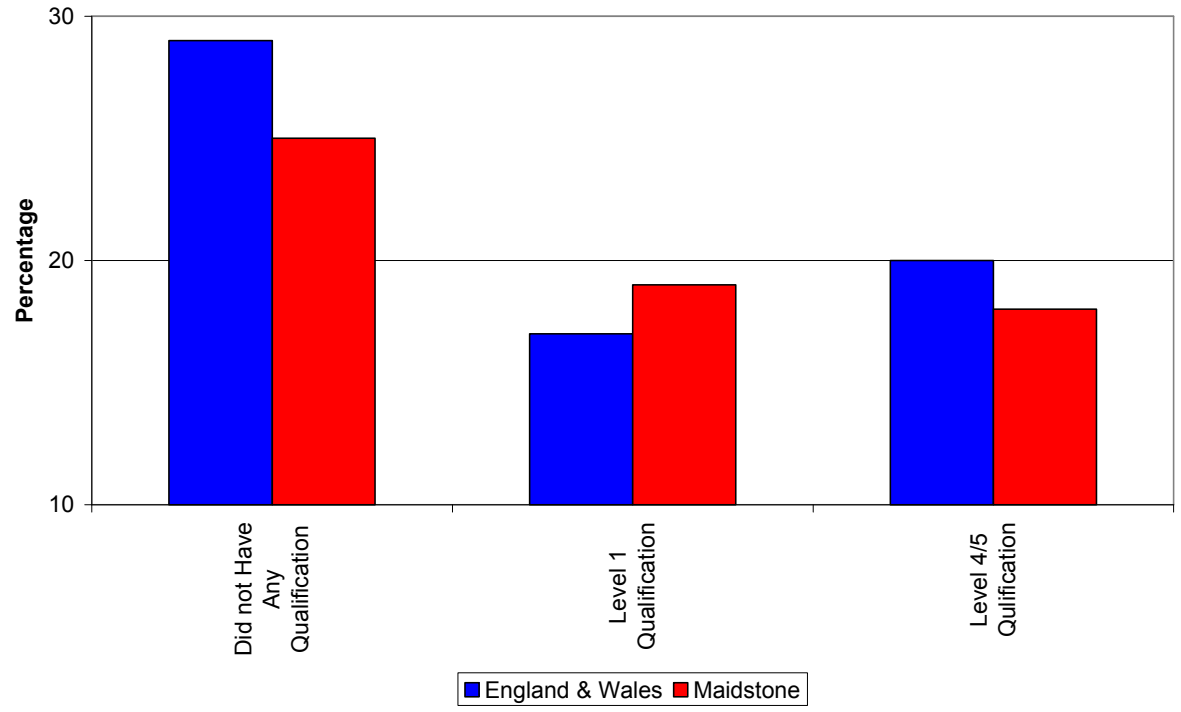
Age Group	Male/ Female	UK		Maidstone		Percentage Difference, Maidstone to UK
		No. (Thousands)	Percentage	No. (Thousands)	Percentage	
All	M	29916	49.1%	71	49.4%	0.6%
	F	31059	50.9%	73	50.6%	-0.6%
<1	M	388	0.6%	1	0.6%	0.0%
	F	368	0.6%	1	0.6%	0.0%
1-4	M	1453	2.4%	4	2.4%	0.0%
	F	1383	2.3%	3	2.2%	-4.3%
5-15	M	4054	6.6%	10	6.8%	3.0%
	F	3863	6.3%	9	6.3%	0.0%
16-29	M	5780	9.5%	12	8.5%	-10.5%
	F	5554	9.1%	11	7.8%	-14.3%
30-44	M	6522	10.7%	15	10.5%	-1.9%
	F	6620	10.9%	16	10.9%	0.0%
45-59	M	5786	9.5%	14	10.0%	5.3%
	F	5942	9.7%	15	10.3%	6.2%
60-64	M	1701	2.8%	5	3.3%	17.9%
	F	1782	2.9%	5	3.2%	10.3%
65-74	M	2398	3.9%	6	4.2%	7.7%
	F	2660	4.4%	7	4.5%	2.3%
>75	M	1835	3.0%	4	3.1%	3.3%
	F	2887	4.7%	7	4.7%	0.0%

The age groups showing a difference of more than 5% between Maidstone and the UK are shaded blue. The analysis of population by age group shows that in Maidstone generally the proportion of population by elder age groups is higher and by younger age groups is lower compared to the UK figures.

3.2 Education

Of the 101,484 people in Maidstone aged between 16 and 74 recorded in the 2001 Census[10], over a quarter do not have any qualifications. At the time of the Census, there were 2,839 students aged between 16 and 17 in full-time education. The comparison of various categories in terms of education between Maidstone community and England and Wales averages is shown in Figure 3.

Figure 3 – Education Profile of Maidstone Community and England and Wales Averages



Note:
Level 1 Qualification = + 'O' level passes; 1+ CSE/GCSE any grades; NVQ level 1; Foundation GNVQ

Level 4/5 Qualification = NVQ levels 4 and 5; HNC; HND; Qualified Teacher Status; Qualified Medical Doctor; Qualified Dentist; Qualified Nurse; Midwife; Health Visitor.

Data Source: Office for National Statistics. Key Statistics for Local Authorities, Census 2001 Datasets. Available at: www.statistics.gov.uk

The comparison of Maidstone community with England and Wales averages could be summarised as below:

- The proportion of population who do not have any qualification is lower in Maidstone
- The proportion of population having level 1 qualification is higher in Maidstone
- The proportion of population having level 4/5 qualification is lower in Maidstone

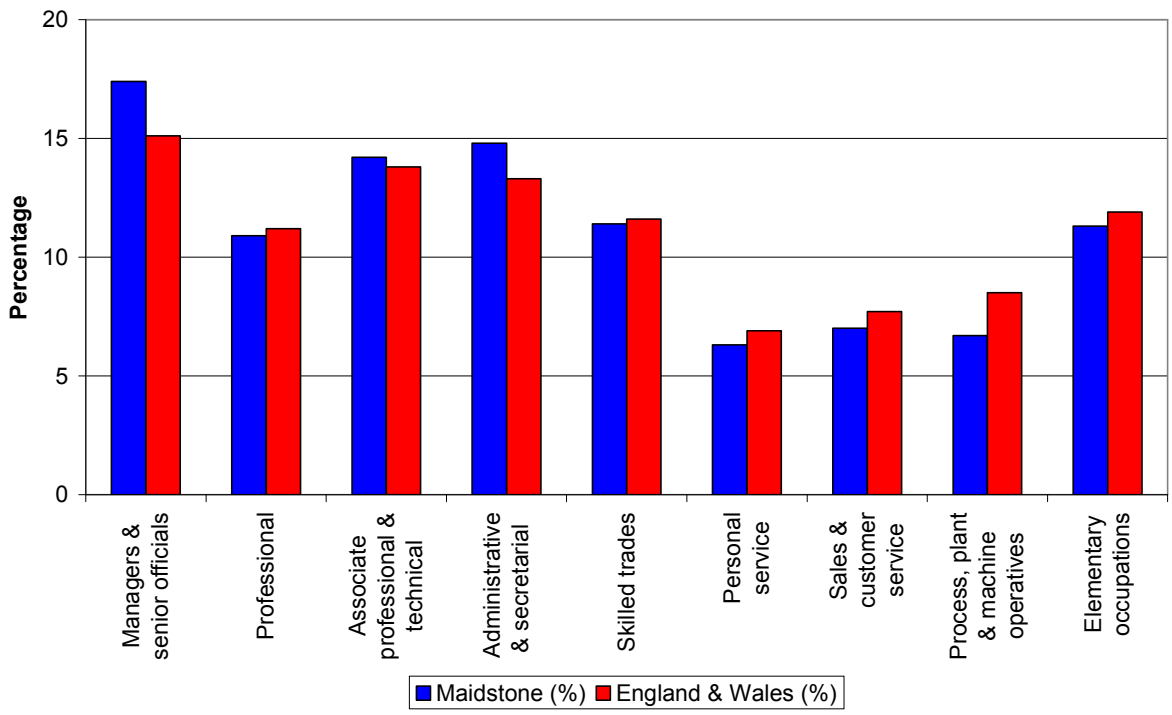
3.3 Employment

In Maidstone, over 70% of people aged between 16 and 74 were economically active, whilst 29% were economically inactive at the time of census in 2001. The percentage of economically active

people in England and Wales was 63% at the time. This shows that a significantly greater proportion (>11%) of Maidstone population is economically active compared to England and Wales average. It is difficult to assess the impact of this accurately but generally this will have a positive impact on health, well-being of the population.

The 2001 Census identified 69,471 people aged between 16 and 74 in employment in Maidstone and the breakdown of occupation groups is shown below in Figure 4.

Figure 4 - People Employed in various Occupation Groups in Maidstone and England & Wales



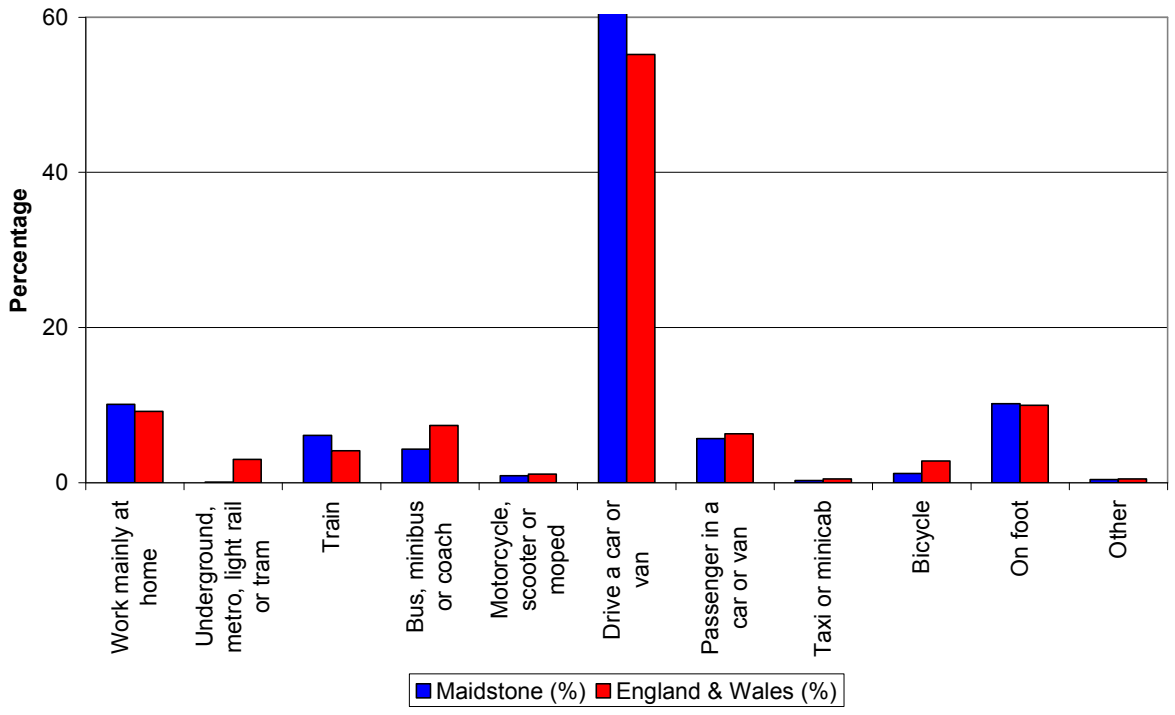
Data Source: Office for National Statistics. Key Statistics for Local Authorities, Census 2001 Datasets. Available at: www.statistics.gov.uk

The comparison shows some difference in terms of type of jobs between Maidstone community and England and Wales averages. Generally, the proportion of Maidstone community is higher in jobs perceived to be of relative higher-earnings.

3.4 Travel

Of those, aged between 16 and 74 in employment in Maidstone, over 60% usually travel to work by car or van. This is 5% higher than the percentage for England and Wales. In Maidstone 11% of people travel to work using public transport (underground, metro, light rail, tram, train, bus, minibus or coach), and a further 11% either walk or cycle to work. Fewer people travel to work using public transport in Maidstone compared to the England and Wales average (15%). Similarly, fewer people walk or cycle to work in Maidstone compared to the England and Wales average (13%). A full breakdown for both Maidstone and England and Wales is shown in Figure 5.

Figure 5 - Modes of Transport used to Travel to Work in Maidstone and England & Wales



Data Source: Office for National Statistics (2009) Population and vital statistics by area of usual residence in the United Kingdom, 2007.

Of 56,454 households in Maidstone, 41% own one car or van, 32% own two, 7% own three and 2% own more than four. A total of 77,401 cars or vans are owned by, or are available for use by households in Maidstone. In comparison, of the 21,660,475 households in England & Wales; 44% own one car or van; 24% own two, 5% own three and 1% owns more than four.

The comparison between Maidstone and England and Wales averages show that overall car ownership and travel by car is higher in Maidstone.

3.5 Health

The 2001 Census provided the following information for Maidstone with reference to health and provision of unpaid care. Over 15% of the Maidstone population have a limiting life-long illness, which limits their daily activities or work. Of the entire Maidstone population, 71% had good general health, 22% had fairly good general health, and 7% did not have good general health in the year preceding the Census. In addition, 10% of the Maidstone population provide unpaid health care to others because of long-term physical or mental ill-health or disability or problems relating to old age.

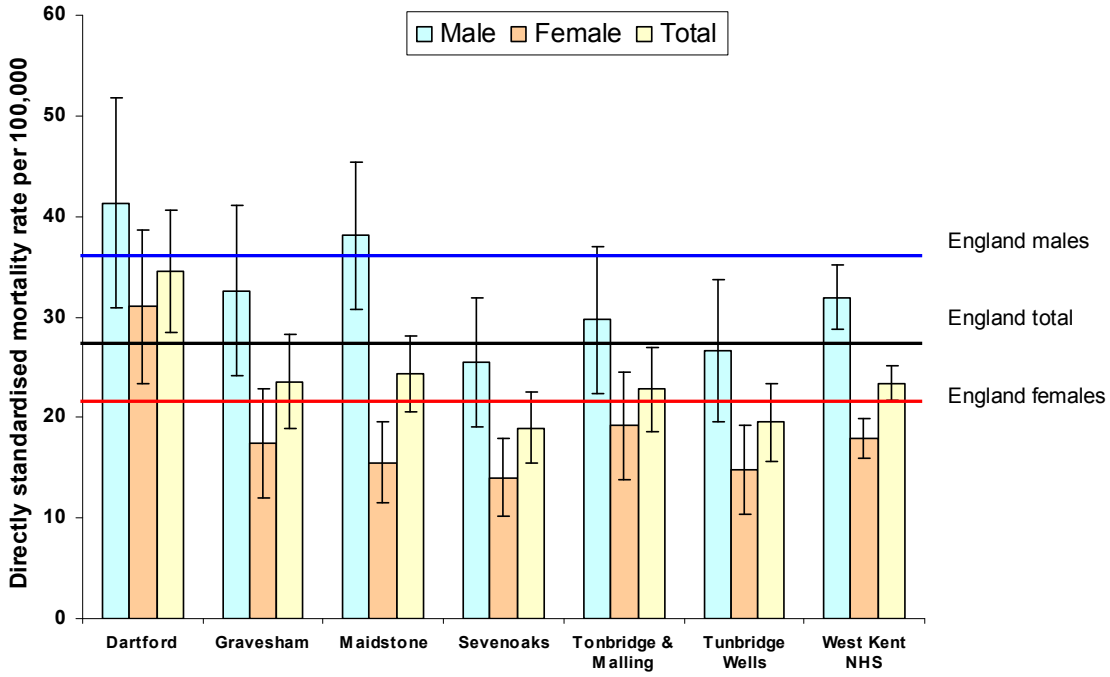
In comparison to England and Wales, Maidstone has a lower percentage of people with limiting life-long illnesses (15% compared to 18%) and poor health (7% compared to 9%); and a greater percentage of people with good general health (71% compared to 69%).

The 2009 Maidstone Health Profile[11] produced by the Association of Public Health Observatories, has been reviewed and a summary of the findings are presented below:

- The health of people in Maidstone is generally better than the England average.
- The level of drug misuse, the percentage of people diagnosed with diabetes and GCSE achievement are better than average.
- There are considerable health inequalities within Maidstone. Two-thirds of people live in areas classified as among the least deprived (40% nationally) and life expectancy for men living in these areas is over ten years higher than for those in the most deprived areas.
- Rates of early death from heart disease and stroke and from cancer have fallen over the last ten years and are close to the England average.
- The health of children in Maidstone is generally better than the national average, though the level of smoking in mothers during pregnancy and the proportion of reception year children classified as obese are similar to the national averages. Over 4,000 children live in poverty and the percentage of children who are physically active is significantly worse than the England average.

A recent study[12] investigates the prevalence of Chronic Obstructive Pulmonary Disease (COPD) in West Kent. The research[13] suggests that COPD is likely to be the third largest cause of death worldwide. The research[14,15, 16] has also established air pollution as one of the potential causes and exacerbating factor for COPD. The direct standardised mortality from COPD in West Kent LAs are summarised in the following chart.

Figure 6 - Directly Age-standardised Mortality for COPD, 2005 – 2007, (pooled), Areas in West Kent and England*



* From Health Needs Assessment – Chronic Obstructive Pulmonary Disease, Work in Progress Report, Public Health of West Kent NHS

The data shows that the mortality for males and females due to COPD in Maidstone is second highest in West Kent, after Dartford, and is higher compared to the England average. Therefore, reducing air pollution would result in minimising this health inequality.

The Detailed and Further Assessments carried out by the Maidstone Council show that there are almost 600 residential units within the Maidstone AQMA that are exposed to NO_2 and/or PM_{10} concentrations above the health based objectives. The distribution of these residential units is shown in Table 2.

Table 2 – Distribution of Residential Exposure in Maidstone AQMA

Area	Number of Residential Units
M20 J6-7	14
Well Road Junction	136
Town Centre	37
Wheatsheaf Junction	196
Fountain Lane Junction	211
Total	**594**

3.6 Summary of Maidstone Community Profile

This section summarises the comparison of Maidstone community with England and Wales averages. This would help to identify areas where improvements in air quality aimed in the draft AQAP could help to overcome inequalities in wider areas within Maidstone community.

- Generally, the proportion of older age groups is higher and younger age group is lower in Maidstone. This indicates an increasing need to tackle air pollution issue, which is considered to have greater impact on vulnerable groups including old people. Therefore, improvement in air quality would benefit the overall health of this group.
- The education figures show that there is a lower proportion of population with no qualification, higher proportion with level 1 qualification and lower proportion with level 4/5 qualification in Maidstone. The lower proportion of population with level 4/5 qualification in Maidstone compared to England and Wales is surprising.
- The employment figures show that the proportion of economically active people in Maidstone is significantly higher and the proportion of people in jobs perceived to be highly paid is also higher. Employability and better earnings are considered to affect the health and well-being in a positive way. However, there will be variations within Maidstone community such as between urban and rural or inner urban and sub-urban areas, which are not possible to be analysed here.
- The car ownership and travel by car to work is higher in comparison to England and Wales. This will have implications for health and traffic flows, particularly in urban centre where people generally derive to work. Similarly travel by public transport and by foot and bicycle is lower. The travel on foot and bicycle is considered beneficial for health. Therefore, the specific draft AQAP measures would help to improve these trends in a positive way.
- The comparison show that health of Maidstone community is generally better than the England average. However the following considerable inequalities are identified within Maidstone community:
    - About one third of population lives in deprived areas, where the average life expectancy for men is about 10 years lower compared to living in least deprived areas
    - Rates of early deaths from heart diseases, stroke and cancer have declined over last ten years but are still slightly higher compared to England average
    - Over 4,000 children live in poverty

    - The percentage of children who are physically active is significantly worse than the England average

- The COPD health assessment needs study in West Kent shows that age standardised mortality due to COPD in Maidstone is second highest in West Kent and is higher compared to England average both for males and females

The studies[17, 18] show that in the UK the deprived communities are generally located in inner urban areas, where the air quality is generally poorer. This aspect of air pollution and health inequalities is further discussed in Section 4.2. The measures in the draft AQAP would implicitly tackle these inequalities by improving air quality in these areas. The improvement in air quality would also result in better health for the residents and measures to encourage walking and cycling would result in increased levels of activity and reduced traffic and air pollution.

4. LITERATURE REVIEW

This HIA for the Maidstone Draft AQAP has been informed through collating relevant information across a wide variety of sources. A detailed literature review has been undertaken. This has involved studying scientific research papers, HIA reports and reviewing HIAs completed on similar projects elsewhere in the UK. The impacts of the measures and actions of the AQAP were not assessed only for air quality but on a wider matrix of parameters based on the holistic definition of health as described in section 1.2. The impacts of the AQAP measures were assessed for the following parameters, where applicable:

- Air quality;
- Noise levels;
- Volume of traffic;
- Amount of congestion;
- Road traffic accidents;
- Level of cycling;
- Level of walking;
- Mental well-being;
- Access to jobs, services, facilities and amenities;
- Social contact, interaction and cohesion; and
- Community severance.

This section summarises the information about the health impacts of the above parameters collated through literature survey. In order to assess the impact of the proposed draft AQAP on health, a detailed literature review of relevant literature has been undertaken. Additionally, this section summarise research on air pollution and health inequalities.

4.1 Air Pollution and Health

Numerous studies and reports have suggested link between air pollution and health[19,20,21,22,23,24]. The Maidstone Town AQMA has been designated for two pollutants, PM_{10} and NO_2. The summary of the health effects resulting from short and long-term exposure to these pollutants is presented below.

Table 3 - Main Health Outcomes of Exposure to NO_2 and PM_{10}

Pollutant	Main Health Effects
Fine particles (PM_{10})	Long-term exposure to particulate matter is associated with reduced life expectancy, primarily due to heart and lung disease and lung cancer mortality. Impaired lung function in both children and adults has been identified. Short-term exposure to fine particulates is associated with increased mortality in sensitive individuals. Again, asthmatics are particularly at risk.
Nitrogen dioxide (NO_2)	Short-term exposure to high levels may cause inflammation of the respiratory airways. Long-term exposure may affect lung function and enhance responses to allergens in already sensitive individuals. Asthmatics are particularly at risk.

The House of Commons Environmental Audit Committee Report on air quality[25] states that *'Road transport contributes far more to the public's exposure to pollutants and is responsible for up to 70% of*

air pollution in urban areas.' The report suggests that air pollution in the UK may be leading to up to 50,000 premature deaths per year.

The AQS[21] shows that the health impacts resulting from exposure to air pollution are associated with a very high cost tag. It estimates that the cost of health impacts experienced in 2005 due to air pollution exposure was in the range of £8-20 billion. However, House of Commons Environment Audit Committee's report on Air Quality[25] suggest that these estimates may be an underestimate of the true costs as these are only based on mortality and do not take into account of the costs due to morbidity. Therefore, the Air Quality Strategy of London's Mayor[26] states that: '*Clearly, therefore, reductions in emissions and exposure will generate significant savings in health budgets and therefore are worth investing in purely on the basis of preventative health care.'*

Beelen *et al.*[27] studied the association between long-term exposure to traffic-related air pollution and mortality in a Dutch cohort. They found that traffic-related air pollution and several traffic exposure variables were associated with mortality in the cohort. Associations between natural-cause and respiratory mortality were statistically significant for NO_2 and black smoke (BS). These results add to the evidence that long-term exposure to ambient air pollution is associated with increased mortality.

It is estimated that a change in air pollution from the highest to the lowest amounts documented in studies in the United States of the long-term effects of air pollution could conceivably be associated with a change in life expectancy in the order of years[28]. Particulate matter is also associated with increases in respiratory symptoms, greater use of drug treatments in people with asthma, reduction in lung function, and admissions to hospital for respiratory and cardiovascular disease[28].

Kim *et al.*[29] undertook a cross-sectional study of asthma and other respiratory symptoms in children living at varying distances from high-traffic roads in the San Francisco Bay Area, California, a highly urbanised region characterised by good regional air quality. The study found associations between asthma and residential proximity to traffic. Their findings provide evidence that even in an area with good regional air quality, proximity to traffic is associated with adverse respiratory health effects in children.

Interventions to reduce air pollution from motor vehicles in the UK include unleaded petrol, low sulphur fuels, and various European directives to control emissions of particles and oxides of nitrogen. These measures have led to clear reductions in air pollution; impacts on health however have been inferred rather than studied directly[30].

The reviews indicate that the most effective transport interventions to improve health are health promotion campaigns (to prevent childhood injuries, to increase bicycle and motorcycle helmet use, and to promote children's car seat and seatbelt use), traffic calming, and specific legislation against drink driving[31].

4.2 Air Pollution and Health Inequalities

The research from UK suggests that the prevalence of poor air quality is higher in socially deprived areas. The Defra report[17] on Air Quality and Social Deprivation states:

'AQMA populations, who are likely to experience high pollution levels by virtue of the designation of an AQMA, are disproportionately deprived relative to the rest of the population in Scotland and England. This apparent inequality is not surprising given that urban populations have a greater number of deprived communities.

AQMAs, at least for those declared for NO2 in England, appear to cover a significant number of the census areas that are considered to be high deprivation high pollution (e.g. in the top percentile). Therefore, AQMAs may be an effective means of reducing inequalities in the future, where they realise the necessary reductions.'

The report by Shailen Sutaria[18] has attempted to quantify the health risks associated with poor air quality for Eastern and Coastal Kent PCT. The report notes that:

'The majority of disease is likely to be experienced in urban areas, with greater population densities and higher levels of air pollutions.

The effects of air pollution are distributed unequally within society, and widen the inequalities in health. Those populations at greater vulnerability to the effects of exposure to air pollutants are the young and elderly, those with pre-existing cardiopulmonary disease and those who live near or work with other toxic material. These groups tend to represent the socioeconomically deprived communities. Individual closest to sources of air pollution (near busy roads) are likely to be from lower socioeconomic class and are at greatest risks from the effects of air pollution. Interventions to reduce air pollution may help reduce health inequalities.'

4.3 Walking and Cycling

Walking and cycling have the potential to improve fitness, diminish obesity, and reduce noise, air pollution, and greenhouse gases associated with travel. Just half an hour a day of walking or cycling can halve the risk of developing heart disease[28]. Over half of the daily trips that people make are short and provide an opportunity for physical activity that is free and accessible[28]. Measures incorporated in the AQAP should aim to encourage and increase these 'free and accessible' modes of transportation.

Shared road use by motor vehicles, pedestrians, and cyclists increases the risk of a traffic injury among walkers and cyclists[28]. Therefore, the safety of pedestrians and cyclists is a fundamental consideration when introducing initiatives to increase the levels of walking and cycling. Literature indicates that cyclists incur a higher risk of injuries requiring hospitalisation than motor vehicle occupants[28].

Evidence suggests that infrastructure influences injury and crash risk. A review of associated literature undertaken by Reynolds *et al.*[32] made the following conclusions:

- Multi-lane roundabouts can significantly increase risk to bicyclists unless a separated cycle track is included in the design;
- Sidewalks and multi-use trails pose the highest risk;
- Major roads are more hazardous than minor roads;
- The presence of bicycle facilities (e.g. on-road bike routes, on-road marked bike lanes, and off-road bike paths) was associated with the lowest risk.

Evidence is beginning to accumulate that purpose-built cycle-specific facilities reduce crashes and injuries among cyclists, providing the basis for initial transportation engineering guidelines for cyclist safety[32]. Street lighting, paved surfaces, and low-angled grades are additional factors that appear to improve cyclist safety.

Despite the risks associated with increased cycling as presented above, life table analyses of the risk of accidents and the cardiovascular benefits of cycling for people living in the UK have shown a net benefit of several fold[28]. Sufficient evidence now exists for the effectiveness of exercise in the treatment of clinical depression. Following a review of relevant literature, Fox[33] concludes that moderate regular exercise should be considered as a viable means of treating depression and anxiety and improving mental well-being in the public.

There is a common misconception that pedestrians and cyclists are exposed to higher levels of air pollution than others; however, car users have been shown to breathe more air pollutants than walkers, cyclists, or people using public transport on the same road[28].

A systematic review of associated literature undertaken by Ogilvie *et al.*[34] found that interventions could encourage people to walk more if they are:

- Tailored to people's needs;
- Targeted at the most sedentary or at those most motivated to change; and
- Delivered at the level of the individual or household or through groups.

However, the sustainability, general usability and clinical benefits of many of these approaches are uncertain. In brief, the paper concludes that interventions to promote walking could contribute substantially towards increasing the activity levels of the most sedentary.

Mutrie *et al.*[35] undertook a randomised trial to determine if a self-help intervention delivered via written interactive materials, such as the "Walk in to Work Out" pack, could increase active commuting behaviour i.e. walking and cycling. They found that the intervention group was almost twice as likely to increase walking to work as the control group after six months; although the intervention was not successful at increasing cycling. Twenty five per cent of the intervention group, who received the pack at baseline, were regularly actively commuting at the 12-month follow up. In conclusion, the "Walk in to Work Out" pack was successful in increasing walking but not cycling. One potential reason for this differential was the difference in perceived risk between the two modes whereby, in general, cyclists required a significant improvement in the safety of the cycle lanes and roads for it to become a popular option.

4.4 Noise and Health

There is some evidence to support the theory that exposure to noise constitutes a health risk. In particular, there is scientific evidence to conclude that noise exposure can induce hearing impairment, hypertension and ischemic heart disease, annoyance, sleep disturbance, and decreased school performance; yet for other effects such as changes in the immune system and birth defects, the evidence is limited[36].

A study by Job[37] into subjective reactions to noise considered that the health effects of noise may arise as a direct consequence of exposure to noise, or may be mediated by reactions to noise such as annoyance and dissatisfaction. The evidence suggests that negative subjective reactions to noise predict health outcomes over and above the prediction available from noise exposure itself.

Research into the non-auditory effects of noise pollution on health[38] found that whilst exposure to transport noise disturbed sleep in the laboratory, it did not generally cause disturbance in field studies where adaptation occurs. The study did find noise to interfere in complex task performance, modify social behaviour and causes annoyance.

A more recent study (2009)[39] of the noise-health relationship found no significant effect of either road traffic noise or noise annoyance on reported hypertension or heart problems, and weak effects on other self-reported health problems such as tiredness, headaches and sore throat. The correlations between noise sensitivity and health problems were generally far stronger than between annoyance and health problems, indicating a different causal direction than previously proposed by researchers.

Interventions to reduce road noise include eliminating noisy vehicles, reducing traffic speed, and developing quieter road surfaces e.g. porous asphalt. There is little research evidence about the health impacts of effective measures to reduce traffic noise, but reduced traffic noise may reduce sleep disturbance[30].

4.5 Road Traffic Accidents

There are large geographical differences in the numbers killed and injured in road traffic accidents between local authority districts in England and Wales[40]. Research undertaken by Jones *et al.*[40] has revealed the following:

- There is a clear urban/rural pattern in casualty rates with higher rates generally found in the more urban districts and those with higher levels of traffic.
- There is a clear association between average daily number of vehicle movements and casualty rates - vehicular traffic is concentrated in the conurbations and the corridors between them, and is also generally higher in the south-east of England.
- For fatalities, the measure of expected deaths based on resident population characteristics showed a highly statistically significant association with the number of events observed in each district. In addition, three measures of traffic exposure, the length of roads, the average number of daily vehicle movements, and the percentage of roads that are minor, showed a statistically significant association with the number of fatalities.
- The proportion of roads in each district that passed through an urban area was found to be negatively related to the number of fatalities.
- Average number of cars per capita, and the material deprivation score showed positive correlation with the number of fatalities observed in each district.
- For both serious and minor casualties, the expected number of casualties based on the size and age structure of the resident population was the strongest single predictor of actual casualties, as it was for fatalities.

To date, some work has been undertaken to ascertain the psychological and social outcomes following road traffic accidents. One cohort study[41] found that one year after an accident, 45% of the cohort reported major physical problems, and 32% reported psychiatric consequences. The research found that non-injury variables were the principal predictors of the outcome.

Road traffic injuries are a growing public health issue, disproportionately affecting vulnerable groups of road users, including the poor; with more than half the people killed in traffic crashes being young adults aged between 15 and 44 years[42]. Road traffic injuries cost low-income and middle-income countries between 1% and 2% of their gross national product[42].

Beyer & Ker[43] have studied the role of street lighting in preventing road traffic injuries. The results from their review suggest that street lighting may prevent road traffic crashes, injuries and fatalities in high income countries with well developed infrastructures. This is a particularly relevant finding in the UK, where an increasing number of local councils are looking towards turning off street lighting in certain areas in a move to reduce costs and carbon emissions. Specific findings of their research are as follows:

- Street lighting may improve a driver's visual capabilities and ability to detect roadway hazards, and can reduce contrast between headlight glare and the surrounding environment, preventing loss of visual clarity from contrast adaptation.
- Street lighting may also adversely affect safety due to ''risk compensation'' i.e. drivers may 'feel' safer and consequently might increase speed and reduce concentration.
- Street lighting (whether new, improved, continuous or non-continuous) has a statistically significant effect on total crashes, fatal crashes and all-injury crashes.
- New street lighting produced a statistically significant reduction in both total injuries and fatal injuries compared to no lighting.

A systematic review of the impact of new roads on health undertaken by Egan *et al.*[44] revealed the following:

- Out-of-town bypasses decrease injuries on main roads through or around towns, although more robust evidence is needed on effects on secondary roads;
- New major urban roads have statistically insignificant effects on injury incidence; and

- New major roads between towns decrease injuries.

4.6 Congestion

A number of studies have tried to assess the relationship between traffic congestion and driver stress. Findings from a study by Hennessy & Wiesenthal[45] supported the hypothesis that driving in highly congested traffic conditions would result in higher stress than driving in low congestion. They also found that those who indicated that they were more pre-disposed to driver stress showed even further elevation in stress than those who had attribute of lower driver stress, under similar conditions. In addition, reports of aggressive behaviours showed the greatest increase from low to high congestion.

A related study by Stokols *et al.*[46] revealed that subjective reports of traffic congestion and annoyance were greater among high and medium impedance commuters than among low impedance individuals (nb. impedance is a function of distance travelled and time taken). Commuting distance, commuting time, travel speed and number of months on route were significantly correlated with systolic and diastolic blood pressure. Medium impedance type A and high impedance type B commuters exhibited highest levels of systolic blood pressure and lowest levels of frustration tolerance among all experimental groups.

4.7 Travel Plans

One study commissioned by the Department for Transport to investigate English school travel planning demonstrated that school travel plans can be extremely effective in delivering a number of socially desirable goals including traffic and congestion reduction, improvements in child road safety and a range of health gains. In general, schools which had involved pupils in developing travel work, which had parking restrictions in place, which had introduced safety measures around the school and which had undertaken considerable awareness-raising had achieved the greatest success[47]. A personal communiqué from the Council suggests that all the schools in Kent have adopted travel planes[1]

There is similar support in the literature for workplace travel planning. Numerous literature and best practice case studies are available on the Internet and should be consulted when planning and implementing new travel plans.

4.8 Freight Transport

The literature identifies a number of health and safety concerns associated with freight transportation. The most apparent issues include:

- Road traffic accidents inflicted upon freight transport workers;
- Road traffic accidents inflicted upon non-freight users of the transport network;
- Indirect effects on those not travelling at the time e.g. spillage of toxic chemicals; and
- Environmental implications e.g. air quality and noise disturbance.

To give an indication of the importance of controlling freight transportation, one research paper states that in 1987 in the UK, while some 75 occupants of heavy goods vehicles were killed in accidents, these vehicles were involved in incidents killing 135 pedestrians and 700 other road users[48].

[1] Email from John Newington, Senior Pollution officer, 22 July 2010

4.9 Bonfire pollution

Literature suggests a number of ways to tackle domestic bonfire pollution and nuisance. In a review of bonfire smoke controls, Local Authorities recommended the following approaches[49]:

- The banning of bonfires;
- Stricter legislation;
- Bonfire permits;
- Improved education;
- Improved waste management.

With regards to improved education, leaflets and websites are the most common methods used by Local Authorities. Although these are valuable tools, they do not always have a significant effect on the number of nuisance complaints received. Their effectiveness could be improved if leafleting was carried out around peak bonfire periods. Valuable information is displayed on council websites, but this may not be the best media to inform people having bonfires. Information could be more effectively disseminated to the public from places such as garden centres and recycling points. There is also a paramount need for engagement at a local level with communities to explain the need for increased level of responsibility and control and to influence those directly involved. For example, good practice guidance could be agreed between public bodies and the local communities. Linking bonfire issues with waste issues could raise awareness. For example, Local Authorities often send newsletters to publicise their attempts at combating waste. These publications could incorporate information on bonfires and promote alternative waste recovery options such as composting.

4.10 Traffic Calming Measures

A systematic review into the effectiveness of traffic calming for the prevention of road traffic injuries found that area-wide traffic calming in towns and cities has the potential to reduce road traffic injuries[50]. The study does however note that further rigorous evaluations, particularly in low and middle-income countries, are required.

Albert *et al.*[51] evaluated the benefits of active speed-limiters and found that they can reduce traffic speeds by as much as 10%. Analysis yielded benefit/cost ratios greater than one for a speed limiter set at 100 km per hour, for a professional driver training programme and for devices to increase seatbelt wearing, indicating that these safety systems are economically justified for light goods vehicles (LGVs).

Another study by Morrison *et al.*[52] to assess the secondary health impacts of a traffic-calming scheme on a community found that there were increases in observed pedestrian activity in the area after the introduction of the scheme. Physical health improved significantly but mental health did not change. Traffic-related problems improved, while other local nuisances such as people drinking in public places and adequate street lighting worsened. The research concluded that the introduction of a traffic-calming scheme is associated with improvements in health and health related behaviours.

Pérez *et al.*[53] studied the effectiveness of speed cameras on Barcelona's beltway in reducing the numbers of road collisions and injuries and the number of vehicles involved in collisions. They found that the relative risk of a road collision occurring on the beltway after (vs before) installation of speed cameras was 0.73. Attributable fraction estimates for the 2 years of the study intervention showed 364 collisions prevented, 507 fewer people injured, and 789 fewer vehicles involved in collisions. In conclusion, this study has shown that speed cameras installed in an urban setting are effective in reducing the numbers of road collisions and, consequently, the numbers of injured people and vehicles involved in collisions.

4.11 Social Contact, Interaction and Cohesion

Mental health is closely associated with social contact and interaction. In a survey of Scottish adults[54], most respondents rated their general health as good, with positive ratings most common among younger respondents, those in higher income brackets, those living in less deprived areas of the country, and those with a low mental ill-health score and good mental wellbeing. The survey found a correlation between respondents' levels of social engagement (as defined by their informal support networks and their level of civic participation) and the number of people they felt they could turn to in a personal crisis i.e. the more socially engaged had significantly more people they could turn to than the less socially engaged. Indeed, social interaction and engagement with local communities can be important in enhancing mental well being and aiding recovery.

Busy streets mean that children are discouraged from playing there or from walking or cycling to school. This hinders the development of independence and of social contacts and determines their attitude to the future use of cars and cycling[28]. Streets with heavy traffic have also been associated with fewer neighbourhood social support networks, a factor that has been linked to various adverse health outcomes[28].

4.12 Community Severance

A systematic review of the impact of new roads on health undertaken by Egan *et al.*[55] revealed the following:

- Out-of-town bypasses reduce disturbance and community severance in towns but increase them elsewhere; and
- Major urban roads increase disturbance and severance.

4.13 Tree Plantation

The selection of tree species could be an important consideration for air quality. Research to date in support of the benefits of trees to air quality has identified preferred species, locations and methods for developing planting schemes alongside transport corridors. Different species can deliver varying levels of benefit and some can actually exacerbate the problem. One study conducted by Lancaster University found the following tree species to be most beneficial for air quality: Scots pine, common alder, larch, Norway maple, field maple, ash and silver birch. Those species found to have a detrimental effect on air quality downwind of planting sites included: English oak, crack willow, goat willow, poplar, red oak, sessile oak and white willow[56]. Reference to relevant literature will need to be made.

4.14 Education Initiatives

A systematic review undertaken by Thomson *et al.*[30] into the unintended health impacts of road transport policies and interventions revealed the following:

- Educational campaigns among the general population to promote the use of safety equipment, such as bicycle and motorcycle helmet, and children's car seats typically include education, incentives and/or distribution of free equipment. These campaigns have led to increased use of equipment such as cycle helmets and car seats, but little is known about subsequent impacts on injuries or other health outcomes.
- Driver improvement and education courses may improve knowledge and safety behaviour, and may reduce crash involvement in some groups.

- Educational programmes to rehabilitate convicted drivers and high school driver education programmes are associated with increases in crash involvement and violations.
- Programmes, which target already motivated individuals, may be effective at shifting up to 5% of trips from cars to walking and/or cycling. Effects of similar programmes on the general, less motivated, population are unclear.
- Little evidence to suggest that publicity and education aimed at the general population; financial incentives (road tolls, work subsidy for not driving to work); improved public transport; and car pools lead to a shift from car use to more active forms of transport.

Community-based studies that include the provision of free helmets alongside an educational component increase observed helmet wearing in the areas in which they are set. There is some evidence that interventions in schools and those providing subsidised helmets may increase observed helmet wearing, but possibly to a lesser extent than those set in communities and those providing free helmets[28].

4.15 Distribution of Health Impacts

In certain situations, there is evidence to suggest that the negative health impacts associated with transport are displaced from one location to elsewhere within the community. For example, building bypasses to relieve traffic from urban areas may displace injury accidents from the old route to other secondary roads if smaller side roads are used as popular short-cuts, although the overall level of injury accident is still likely to fall[30]. Although a new road may reduce traffic volume on some roads, e.g. through a town centre, it is unlikely that overall traffic volume will be reduced. Indeed improved road provision may lead to increased traffic overall (i.e. induced traffic). In the case of bypasses, traffic and its associated impacts, i.e. air pollution, will likely be displaced and increase on other roads, in particular the bypass area itself[30].

There are also certain members of a community who are more susceptible to the negative health impacts associated with transport. For example, those in poverty appear to be more strongly affected by heavy traffic near their residences[57]. Traffic-related exposures, poverty and vulnerabilities all increased the risk of frequent asthma symptoms in research conducted by Meng *et al.*[57].

5. HIA CONSULTATION

Several consultation events were organised to collate information and opinion of those who have direct input and impact from the AQAP. The events included workshops with stakeholders, community representatives, Councillors and members of Maidstone Borough Council's Environmental Health Department (MBC EH). The list of consultees is provided in Appendix 1.

The draft AQAP has evolved continuously in parallel to HIA due to its own consultation and input from the council. Some measures that were part of the draft AQAP when the stakeholder consultation was undertaken were not included in the subsequent draft AQAP that was presented for consultation to community consultees. The HIA consultation was carried out on the measures and actions that were part of the draft AQAP at the time of a given consultation exercise. After the last consultation was undertaken, the final draft AQAP has changed, however, the main measures and actions, remain broadly the same.

The feedback on the measures that now do not form part of the draft AQAP is reported in Appendix 2 for information purposes only and has not been considered subsequently in the assessment.

For the purposes of HIA consultation, the measures and actions in the draft AQAP were grouped under themes that were considered to have similar impacts. The measures were grouped into the following categories so that measures of the same theme can be considered together:

- Highway and road improvements that will contribute to reducing traffic and hence air pollution;
- Initiatives to promote increased use of public transport in Maidstone;
- Marketing and education initiatives to raise awareness among the public;
- Initiatives to promote walking and cycling in Maidstone;
- Measures to incorporate air quality controls within the development process;
- Legislative or enforcement measures that will contribute to reducing air pollution;
- Working in partnership to target air pollution; and
- Other initiatives to improve air quality in the Borough.

At each of the workshop events, the attendees were split into small groups to discuss and provide feedback about the individual measures and actions proposed within the draft AQAP. The impacts of the measures and actions of the AQAP were assessed not only for air quality but also for a wider matrix of parameters based on the holistic definition of health as described in section 1.2. The impacts of the AQAP measures were assessed for the following parameters, where applicable:

- Air quality;
- Noise levels;
- Volume of traffic;
- Amount of congestion;
- Road traffic accidents;
- Level of cycling;
- Level of walking;
- Mental well-being;
- Access to jobs, services, facilities and amenities;
- Social contact, interaction and cohesion; and
- Community severance.

The groups were prompted to consider the following questions during their discussions:

- What are the potential benefits to health?
- What recommendations could be offered to improve the overall positive impact on health of the draft AQAP?
- What are the potential negative impacts?
- How to mitigate minimise or avoid the negative impacts?

For each impact, be it positive or negative, the groups were asked to categorise the extent of the impact as small, moderate or large. The impact descriptors are broadly semi-quantitative, based on individuals personal perception, however, the following definitions were provided to assist:

Small = insignificant change in air quality and other parameters that will not change the current situation

Moderate = Noticeable change in air quality that may or may not change the status of compliance with statutory objectives on its own. The impact results in changes in other parameters assessed as part of HIA

Large = Significant impact on air quality. May contribute significantly to achieving compliance with the statutory AQS objectives and impact on wider parameters considered as part of HIA assessment

In addition, the groups were asked to comment on the distribution of impacts, particularly across Maidstone, resulting from the proposed measures, and in particular whether or not any negative impacts may be experienced anywhere in the community as a result.

The attendees at the workshops were also given the opportunity to comment on any other aspect of the project.

The feedback of consultees is summarised in Appendix 3. The information is only provided for those measures for which comments were received from the participants.

6. HEALTH IMPACT ASSESSMENT

6.1 Approach to Health Impact Assessment

This assessment is based upon the findings from the literature review and consultation exercises undertaken to gather views of the stakeholders and community. Conclusive evidence of the links between, for example, socio-environmental factors and health or the effectiveness of interventions is not always available. In such cases, the best available evidence, including professional judgement, has been employed.

The scope of this HIA does not include consideration of the baseline health statistics such as hospital admittance or early deaths due to heart disease and cancer. However, section 3 provides the state of health in Maidstone compared to the national health indicators. The baseline health statistics could be used to assess the direct health impacts of the AQAP measures once successfully implemented. However, it is important to note that while it is possible to assess the health impacts at a wider scale, the assessment of health impacts at the resolution of small geographical areas such as an air quality hotspot is subject to greater uncertainties and might be indiscernible.

The following sections summarise the health impacts of the measures and actions included in the final draft AQAP for Maidstone Borough Council. The opinion of different consultee groups were different in terms of the extent of impact. Therefore, here in this section the impact has been mentioned as positive or negative based on general consensus. The details of consultee feedback could be found in Appendix 3 and literature could be found in Section 4. Some measures and actions in the draft AQAP are policy related and qualitative in nature, hence it was not possible for the consultees to provide a quantitative feedback about the impacts of such measures.

For each measure and action, recommendations are provided, where these resulted either from the consultation or from the literature review. The purpose of the recommendations is to enhance the positive impacts, minimise the negative impacts, and identify if there would be adverse distribution of health impacts.

6.2 Highway and Road Improvement Measures to Reduce Traffic and Air Pollution

Measure 1: The Air Quality and Transport Steering Group (AQTSG) will raise awareness of the impact on air quality of the Borough's housing and employment growth targets, and support the transport measures that would be needed to manage and reduce the potential growth in traffic that would be associated with the delivery of these targets.

Action 1: Regular meetings of the AQTSG to oversee Local Air Quality Management issues.

Health Impacts:

Consultees thought that reduction in traffic would have positive impact on air quality, noise, congestion and mental wellbeing, cycling and walking. It was considered that having a steering group and that regular meetings to formulate and check the implementation of the measures to reduce traffic would be useful.

No recommendations were proposed for this measure

Measure 1: The Air Quality and Transport Steering Group (AQTSG) will raise awareness of the impact on air quality of the Borough's housing and employment growth targets, and support the transport measures that would be needed to manage and reduce the potential growth in traffic that would be associated with the delivery of these targets.

Action 2: Identification and prioritisation of any road traffic schemes which may affect traffic flows in Maidstone.

Health Impacts:

Consultees agreed that the identification and prioritisation of schemes at an early stage would enable decisions to be made which take air quality into account. However, the exact positive and negative impacts would be scheme-specific.

Literature suggests that whilst improvement in traffic flows may decrease air pollution in the short term, it could lead to an increased number of car trips, which will increase air pollution over the long term. Similarly, congestion may reduce in the short term, but could increase over the long term for the same reasons. Tackling congestion would have the added benefit of reduced driver stress and improved mental wellbeing.

Recommendations:

- Caution should be taken to ensure that any positive impacts resulting from specific road traffic schemes are not at the consequence of introducing negative impacts elsewhere
- The Council to ensure that short-term reductions in traffic flows and/or congestion should not result in long-term increase in trips, which would neutralise the positive impacts

Measure 1: The Air Quality and Transport Steering Group (AQTSG) will raise awareness of the impact on air quality of the Borough's housing and employment growth targets, and support the transport measures that would be needed to manage and reduce the potential growth in traffic that would be associated with the delivery of these targets.

Action 3: Section 278 Works: This may achieve improvements in traffic management and emissions, as a result of planning requirements secured through the implementation of development proposals.

Health Impacts

The consultees believed that in principle positive impacts would emanate from improvements in traffic management. However, it is difficult to assess the impacts without knowing the details of the development. Again, consultees noted that the exact impacts of this action would depend up on the planning conditions.

Recommendations: .

- Community may be involved in the decision process, wherever possible, to determine the planning conditions and air quality requirements of the development

Measure 2: M20 J4-7 Controlled Motorway and Network Performance Monitoring

Action 1: The M20 J4-7 has been identified as a potential site for a controlled motorway scheme by the Highways Agency. When fully operational a Controlled Motorway is designed to tackle issues of local congestion on the motorway and keep traffic moving. The system works by adjusting mandatory speed limits by using various sensors, which are able to detect the speed and flow of traffic. It works automatically and informs drivers of the reasons for the changes.

Action 2: Network Performance Monitoring, also a Highways Agency scheme, has been introduced to create a managed area that incorporates the M20, M2, A229 and A249, and allows traffic to be moved around according to congestion pressures on the different routes. This scheme will involve close co-operation between KCC and the Highways Agency Control Centres.

Health Impacts:

Consultees agreed that this measure would have a positive impact on air quality, noise, congestion. Road traffic accidents, mental well-being, access to jobs and services.

A number of consultees thought that reduced congestion on the motorways could benefit the nearby 'A' roads which are currently used by motorists avoiding motorway problems. It was considered that tackling congestion would have the added benefit of reduced driver stress and improved mental wellbeing.

Consultees were concerned that there could be increased noise levels as a consequence of improved traffic flows and speed. There were also concerns that the levels of walking might be reduced on trunk roads as a result of the increased flows reducing crossing opportunities. Some consultees thought that the nearby roads would in fact be negatively impacted as a result of increased traffic volumes on the motorways diverting to the smaller roads.

Some consultees believed that if the scheme is not managed properly may result negative impacts in other areas.

Literature suggests that whilst improvement in the flow of traffic may reduce air pollution in the short term, it could lead to an increased number of car trips, which will increase air pollution over the long term. Similarly, congestion may reduce in the short term, but increase over the long term. In addition, it is important not to compromise bus services as a result of strategic network traffic management.

Recommendations:

- Extend the scheme to include junctions 3 to 8 to provide wider benefits;
- Operate the scheme continually (24 hours a day);
- Control traffic flows on the linking dual carriageways;
- Deliver smarter driving techniques to motorists;
- Monitor the effectiveness of the scheme 24/7 and report all findings to the AQTSG; and
- To ensure that the scheme is implemented and monitored carefully so that the negative impacts may not occur in other areas.

Measure 3: Urban Traffic Management and Control (UTMC) enhancements

The Traffic Management Centre for Maidstone became operational in 2006. An UTMC system is already operational in Maidstone town centre. This is being further developed through the Local Transport Plan (LTP) integrated transport programme, with additional variable message signs and automatic number plate recognition equipment being installed. The next stage will involve an upgrade to the car park management system.

Health Impacts

Consultees thought that this would have a positive impact, most notably on air quality and small positive impact on noise and congestion They thought that the assessment of individual enhancements could help to improve the success of the measure. In order to minimise any negative impacts which could be associated with inadequate management, consultees highlighted the need for

a regular review. The UTMC representatives being invited to Maidstone AQ & Transport Steering Group suggested the following recommendations.

Recommendations:

- Council to ensure proper management of UTMC enhancements
- Regular review of UTMC

Measure 4: Tackling Congestion Hotspots in Maidstone

Congestion hotspots are being identified through the Maidstone UTMC, so these can be specifically targeted by KCC, in terms of improving traffic flow and journey times. These hotspots will be considered in terms of linking in with other measures, such as bus priority measures and Punctuality Improvement Plans.

Health Impacts:

The consultation groups agreed that this measure would have a positive impact on air quality, noise levels, amount of congestion, road traffic accidents, mental well-being and access to jobs, services, facilities and amenities.

Consultees were concerned that this measure could act to encourage people to use their cars which could in turn discourage walking and cycling.

Recommendations:

- Reduce traffic congestion hotspots through distributing facilities around the town
- Offer incentives for people to shop in the peripheral areas of the town
- Increase interaction between MBC and KCC to manage any site-specific problems

Measure 5: Improved Co-ordination of Roadworks

In July 2009, Kent County Council was given the go ahead by Government for a scheme whereby contractors intending to work on Kent's roads will require a permit for the work. This provides KCC with greater capability to co-operate with the utility companies and other highways contractors to control and co-ordinate works and minimise their impact on Kent's roads. MBC would like to work in partnership with KCC to develop a system whereby KCC Highways consult with the MBC Pollution Team and UTMC centre to look at how the proposed works will affect traffic flows (likely congestion and air quality effects) in the light of any other contracted works in the area that has been requested over the same time-frame.

Health Impacts:

Consultees agreed that this measure would have positive impact on air quality, noise, access to services and facilities and congestion. Whilst the improvements were welcome, some concerns were raised that the proposal may not remain effective in the medium or long term and will require monitoring.

Recommendations:

- Regular monitoring of coordination of roadworks
- To ensure that rat-running in residential streets do not result from this

Measure 7: Investigation of the distribution of freight in Maidstone town centre

Possible heavy goods vehicle time restrictions through the AQMA could be investigated as part of the Freight Quality Partnership and review of freight routes in the town centre.

Health Impacts:

The consultees considered that the measure would result in positive impact in terms of air quality, noise levels, volume of traffic, amount of congestion, road traffic accidents, mental well-being and community severance. Consultees felt that time restrictions to avoid the main shopping times would be beneficial. However, concerns were raised that restrictions in the town centre could potentially displace lorry traffic to unsuitable routes at the edge of Maidstone. The value of this measure was questioned as there is not very much industry generating freight traffic in the town centre and there are already some restrictions on time deliveries.

From the literature it is clear that care need to be taken in such investigations into freight transportation and consideration should be given to all associated health and safety issues.

Recommendations:

- To undertake a study about freight transport in Maidstone to inform and target freight transport measures appropriately
- To ensure that freight traffic is not displaced in other areas causing problem there

Measure 8: Tackling hotspots with hourly NO_2 objective exceedences

Where sites likely to have breaches of the hourly NO_2 objective have been identified within the AQMA, MBC will investigate the potential for implementing schemes which reduce peak hour flow of traffic in order to minimise short-term pollution episodes which are contributing to hourly breaches.

Health Impacts:

Consultees agreed that this measure would have a positive impact on air quality, noise levels, and the amount of congestion. It was however noted that schemes like this will only move traffic elsewhere and will not act to reduce the demand for motor transport overall. Concerns were raised that reducing peak hour flow of traffic in one location could push traffic elsewhere, in turn creating new hotspots. Some concerns were noted that access to jobs and services could well be reduced.

The literature suggests that busy streets discourage walking and cycling, particularly for children to school. The heavy traffic flows hinder the development of independence and of social contacts and determines their attitude to the future use of cars and cycling. Streets with heavy traffic have also been associated with fewer neighbourhood social support networks, a factor that has been linked to various adverse health outcomes.

Recommendations:

- To undertake modelling prior to the implementation of any new scheme to assess impact on traffic in various areas
- Appropriate signage
- Link the scheme to measure incidents of Chronic Obstructive Pulmonary Disease (COPD) in the Borough. This may be addressed through Measure 18
- Increase the number of out of town car parks
- Investigate the effectiveness and feasibility of a LEZ in Maidstone town
- Ensure there is adequate public transport

Measure 9: Town Centre Regeneration Action Plan

The Letts Wheeler's scheme design anticipates that the main vehicular carriageway is moved to the south of the street to create two large pedestrian squares outside the Town Hall and in Lower High Street to enable events to take place and restaurants to spill on to the street. A programme of consultation with various interested groups is being carried out to refine the design and the final design will go back to Cabinet for approval.

Health Impacts:

In general, consultees thought that this was a positive measure for level of walking, social contact, interaction and cohesion, and community severance. some consultees considered that access to jobs, services, facilities and amenities for disabled citizens may decrease as a result of the programme and would like to ensure that the Disability Forum has been consulted. A repeat concern was that traffic could potentially be displaced to areas outside of the town centre.

Recommendations:

- To ensure that disabled citizens are not negatively impacted as a result of the programme, consultation should be undertaken with the Disability Forum prior to the finalisation of plans
- To provide good and economical out of town car parks
- Consider installing cycle paths and cycle parks to encourage cycling
- Co-ordinate this scheme with plans for further development of the town as a whole
- To ensure that traffic spillage to out of town areas is considered at the planning stage of the scheme
- To develop a robust car parking strategy

6.3 Initiatives to Promote Increased Use of Public Transport in Maidstone

Measure 6: Improvements to public transport

Action 1: An extension of the existing bus lane on the A274 Sutton Road is proposed to create capacity for a new bus route.

Health Impacts:

All of the various consultation groups agreed that this action would have both small positive impacts and small negative impacts in a number of areas. There was a general consensus that air quality might be negatively impacted should the amount of congestion increase as a result of space being taken away from cars to make way for the new bus route. Also associated with increased congestion, there were concerns that noise levels may increase as a result of the scheme.

Whilst there may be improvements in mental well-being for bus users, the mental well-being of car users may decrease. There is an apparent conflict of interest between bus users and car users and this should be addressed. There is some evidence in the literature to suggest that congestion leads to increased driver stress and aggression.

There were also concerns that the bus lane could displace traffic elsewhere, creating negative health impacts for others, in this case along Willington Street, through the Slepway Estate.

Recommendations:

- Quantify the air quality impact of the proposal through an assessment
- Quantify the noise impact of the proposal through an assessment

- Have multiple bus stops on the new bus route as well as discounted fares to encourage more people to use the bus
- Raise awareness to use public transport
- Ensure that the buses are clean and that there is a good, well run service
- Allow cyclists to use the bus lane or create cycle paths in addition to the bus lane to encourage cycling

Measure 6: Improvements to public transport

Action 2: Maidstone Quality Bus Partnership plans to continue making improvements to the buses, infrastructure and services provided.

Health Impacts:

The consultees thought that this was a largely positive action. There would be positive impacts in terms of air quality, noise levels, access to jobs and services, social contact and interaction, amount of congestion and community severance.

Literature is generally in support of Intelligent Transport Systems (ITS) which could include real-time passenger information and integrated ticketing. This could be considered further as a potential improvement.

Recommendations:

- Provide fuel-efficient and low carbon buses
- Select quieter buses over louder ones
- Ensure that there are enough buses available on the routes
- Provide improved timetables and make them easily available to all
- Consider more ticketing and interchange with other forms of public transport

Measure 6: Improvements to public transport

Action 3: Langley Park Farm Park and Ride site has been previously identified by Maidstone Borough Council as a potential replacement for the former Park and Ride operation at Coombe Quarry. Design work will be undertaken to assess the priority for taking this option forward. Additional investigation will continue on other sites, particularly those on the A229 axis north and south of the town.

Health Impacts:

Consultees thought that this would have a positive impact on the town centre, most notably in terms of air quality, volume of traffic, amount of congestion and noise levels.

However, all of the consultees were concerned that Langley area would experience negative health impacts as a result of this action. Such negative impacts included: increased volume of traffic, amount of congestion, noise levels and community severance; and decreased mental well-being.

Literature supports the provision of Park & Ride facilities under certain circumstances, including in:

- Cities where a car-free city centre is being promoted;
- Cities with severe traffic congestion;
- Cities with restricted central-area parking; and

- At large employment sites with restricted car parking as part of a commuter-plan initiative.

Recommendations

- Increase the number of stops on bus routes from the Park & Ride
- Encourage people to walk or cycle to and from the Park & Ride site where possible
- Introduce screening around the Park & Ride site for noise
- Consider the site location very carefully through thorough assessment of various options and health impacts

Measure 6: Improvements to public transport

Action 4: Rail network improvements: Rail improvements are being secured through implementation of the Kent Rail Utilisation Strategy. This includes measures to improve journey times by rail and improve facilities at Kent's stations and access to the stations by all modes; integrating rail travel with the car, bus, walking and cycling. KCC and MBC are working with South Eastern and Network Rail to secure improved rail services in Maidstone.

Health Impacts:

Consultees agreed that this was a positive action with benefits for a number of parameters, most notably on air quality, walking and cycling levels, access to jobs and services and mental well-being.

A few concerns were raised about localised disruptions as a result of increased services etc., including a potential increase in noise and community severance.

Recommendations

- Publicise all of the improvements to increase awareness among the public
- Encourage and give incentives to people to use the new services such as cheaper to use public transport

Measure 31: Maidstone Borough Council will continue to work with Kent County Council and transport providers to support and promote increased uptake of public transport modes.

Health Impacts:

Consultees thought that this would help to improve air quality and a number of other parameters. There were concerns that negative impacts associated with increased volume of traffic and congestion could be re-distributed elsewhere.

Recommendations:

To enhance the positive impacts, consultees suggested the following:

- Ensure that MBC is represented on all local transport groups
- Promote good, clean and reliable public transport services
- Promote pedestrian and cycle routes to public transport stops
- Provide adequate cycle storage at bus stops and stations

6.4 Marketing and Education Initiatives to Raise Awareness Among the Public

Measure 21:	MBC will promote the uptake and use of cleaner or alternative fuels where possible.

Health Impacts:

Consultees thought that this measure would have only a small positive impact on air quality and climate change.

Recommendations:

- To disseminate literature about different types of fuels available and their air quality impact allowing people to make informed choices

Measure 26:	MBC will implement initiatives to educate communities on air pollution issues and ways to minimise impacts on air quality.

Health Impacts:

Overall, consultees thought that this was a positive step. If done in the correct way, this could bring communities together. Raising the profile of air quality and its links to sustainability and help remove obstacles based on public misperceptions.

Literature indicates that educational programmes which target already motivated individuals may be effective at shifting up to 5% of trips from cars to walking and/or cycling. There is little evidence to suggest that publicity and education aimed at the general population leads to a shift from car use to more active forms of transport.

The Environmental Audit Committee's Fifth Report on Air Quality explicitly states that "better public understanding of air quality issues is critical". The Government must educate the public about the health risk from poor air quality and about how they can limit their exposure and improve air quality. Any campaign on air quality should raise awareness of the actions people can take to reduce emissions of dangerous pollutants and to reduce their exposure"[25].

Recommendations:

- The information to be delivered in an easy to understand form and in formats acceptable to all parts of the community
- Initiatives to be targeted at easy to reach groups such as school children, NGOs, cycling/walking groups as well as key polluters

Measure 27:	MBC will provide the public with relevant air quality information thus enabling commuters to make informed choices about their transport options

Health Impacts:

Overall, consultees thought that this was a positive step, similar to Measure 26.

Recommendations:

- To use a sustained approach to implement this strategy, ensuring its success in the long term
- Information easy to understand and in suitable and readily accessible formats
- Information not disproportionately worrying about health and well-being

Measure 28:	MBC will continue to work in partnership with Kent County Council to increase uptake and implementation of School and Workplace Travel Plans, particularly where likely to impact on the Air Quality Management Area.

Health Impacts:

Consultees all agreed that this was a positive measure, and in particular would improve air quality, traffic volume and congestion, as well as increasing levels of walking and cycling.

The literature support the positive impacts of school and work place travel plans.

Recommendations:

- Introduce car clubs and car sharing
- Introduce cycling and walking clubs
- Increase cycle storage facilities
- Mandatory travel plans for new developments
- Guide schools and other organisations to prepare and implement travel plans
- Monitor travel plans

Measure 36:	MBC will promote composting in a bid to reduce pollution from domestic bonfires

Health Impacts;

Consultees were in agreement that this would have a positive impact on air quality. Some consultees noted that other measures within the Action Plan would probably be more effective than this one.

Recommendations:

- Council to target potential polluters such as rural property owners
- Council to work in air quality hotspots to enhance the success of the scheme.

Literature suggests a number of ways to tackle domestic bonfire pollution and nuisance. In a review of bonfire smoke controls, the following approaches were recommended by Local Authorities[49]:

- Bonfire bans
- Stricter legislation
- Bonfire permits
- Improved education
- Improved waste management
- Leafleting to be carried out around peak bonfire periods
- Information disseminated to the public from places such as garden centres and recycling points

Measure 37:	MBC will continue to monitor a range of air pollutants throughout Maidstone and make the monitoring information freely available to the public in an easily

understood form.

Health Impacts:

The consultee feedback was similar to Measures 26, 27 and 38. In general, consultees thought that this was a positive step.

Recommendations:

- Easy to understand, factual information to be targeted at easy to reach groups, poor air quality hotspots and key polluters
- the information flow to be two-way where possible so that the public has a chance to provide feedback to the Council on the information received

Measure M38: MBC will ensure that all air quality monitoring data reported to the public is both accurate and precise by implementing quality control measures.

Health Impacts:

Consultation feedback similar to Measures 26, 27 and 37**.** There was a concern that any questionable data could have a damaging effect on public support, for example as we have seen in the climate change data anomalies.

No recommendations were proposed for this measure

6.5 Initiatives to promote Walking and Cycling in Maidstone

Measure 30: MBC will encourage their employees to consider the use of bicycles in their daily duties by providing cycle usage mileage.

Health Impacts:

Consultees agreed that this measure would have a positive impact on the levels of cycling and air quality within Maidstone. The literature highlights numerous benefits associated with increased cycling such as improved fitness and mental well-being and reduced obesity, noise and air pollution. Measures included within the action plan should aim to encourage cycling.

Consultees were concerned that increased cycle use could lead to more road traffic accidents and a greater exposure of cyclists to air pollution. There is some evidence which suggests that shared road use by motor vehicles, pedestrians and cyclists increases the risk of a traffic injury among walkers and cyclists; however some authors suggest that the benefits associated with cycling outweigh the harms through increased risk of road traffic accidents and increased exposure to air pollution.

Recommendations:

- To ensure that adequate safety provisions are made for cyclists
- Provision of cycle facilities such as on-road bike routes, on-road bike lanes, off-road bike paths as well as street lighting, paved surfaces and low-angled grades
- Safety education and bicycle training

Measure 29: MBC will continue working partnerships with Kent County Council, Sustrans and the Maidstone Cycling Forum to ensure that walking and cycling initiatives are promoted and supported in Maidstone. An updated cycle strategy for the town is to be developed.

Health Impacts:

Consultees were in favour of this measure and thought that there could be a positive impact most notably on air quality, noise levels, traffic volume, congestion, social interaction and mental well-being. The literature highlights numerous benefits associated with increased walking and cycling such as improved fitness and mental well-being and reduced obesity, noise and air pollution and measures included within the action plan should aim to encourage walking and cycling. As per Measure 30, concerns were also expressed over cyclist and pedestrian safety.

Recommendations:

- Wide and joined up cycle lanes independent from other traffic lanes are essential
- No car parking on cycle lanes should be enforced
- Provide clear signage for pedestrians and cyclists
- Educate people on the health benefits of walking and cycling
- Provide cycle safety training
- Ensure that Maidstone town centre is not the only place to benefit from this measure
- Give support to pedestrians (not just cyclists), for example through provision of free pedometers

6.6 Measures to Incorporate Air Quality Controls within the Development Process

Measure M11:	MBC will ensure local air quality is fully integrated into the LDF process and development scenarios are appropriately assessed with respect to the potential impacts on air quality. An air quality Supplementary Planning Document (SPD) is under development.

Health Impacts:

The consultation groups all thought that this would have a large positive impact on air quality.

Recommendations:

- Adequate enforcement to ensure that air quality conditions are adhered to
- To monitor implementation of planning conditions
- MBC Environmental Health Department would like to be consulted on specific schemes at the design stage.

Measure M12:	MBC will request S106 contributions for developments likely to have an air quality impact on the town centre AQMA.

Health Impacts:

Mixed responses were gathered from the consultation events. The community group was worried that this measure could act to allow developers to introduce more pollution than they would otherwise. They do not want developers to be allowed to develop if they have the potential to worsen air quality. The Councillor and MBC Environmental Health consultees thought that this measure would be positive, although the impact on air quality and the other parameters in question would be dependent on the nature of development and mitigation provided. Receiving S106 contributions, specifically for air quality, would be beneficial to improving air quality.

Further concerns were expressed that this measure could encourage out of town development (where fewer S106 contributions are requested). This in turn could lead to social exclusion and community severance.

Recommendations:

- Air quality considerations to be given priority in deciding for 106 contributions
- A borough-wide policy for 106 contributions to avoid disproportionate out of town development

Measure M32:	MBC Environmental Health will comment upon planning applications to ensure that all relevant air quality issues are highlighted and mitigation measures are considered wherever possible.

Health Impacts:

Support for this measure was positive and it is thought that this would ensure that the Council to promote actions within the Air Quality Action Plan.

Recommendations:

- Incorporation of carbon and air quality emissions reduction in policy documents
- A more robust stance in relation to S106 and CIL would facilitate this

Measure M19:	MBC will encourage the planting of trees which benefit air quality within the borough through the planning process, Maidstone's Green Spaces Strategy and community partnerships.

Health Impacts

Consultees agreed that this would have a positive impact on air quality, mental well-being, noise levels, social contact and potentially walking and cycling. Consultees were concerned about the cost of the trees themselves and their maintenance.

Recommendations;

- To undertake effective leaf clearance so as not to create a nuisance for nearby residents
- To ensure that trees do not block CCTV cameras, nor create hazards for road users
- Selection of appropriate tree species and planting strategy to benefit air quality in Maidstone keeping in view local conditions and research findings

6.7 Legislative or Enforcement Measures that will Contribute to Reducing Air Pollution

Measure M33:	MBC will permit and regularly inspect industrial premises under the Pollution Prevention and Control regulatory regime.

Health Impacts:

Consultees thought that this could have a small positive impact on air quality, noise levels and mental well-being.

Recommendations:

- Environmental Permits should be fit for purpose and ensure that adequate air pollution abatement is used in industrial premises

Measure M34:	MBC will enforce statutory nuisance legislation to control smoke, dust, fumes or gas emissions from commercial and domestic premises which are causing a nuisance or are prejudicial to health.

Health Impacts:

Consultees thought that this would be positive in terms of improved air quality, mental well-being and social cohesion and noise reduction.

Recommendations:

- The enforcement team should be adequately staffed to ensure that this measure is implemented
- Tp provide advice to organisations to encourage them to enhance their performance as well as sticking to the minimum requirements imposed

Measure M35:	MBC will enforce relevant legislation to reduce the burning of commercial and domestic waste.

Health Impacts:

Consultees thought that this would be positive in terms of improved air quality, mental well-being and social cohesion and noise reduction.

Recommendations:

- The enforcement team should be adequately staffed to ensure that this measure is implemented
- To provide advice to organisations and individuals about burning practices, impacts and regulations

6.8 Working in Partnership to Target Air Pollution

Measure M13:	MBC will ensure effective co-ordination between climate change and air quality strategies and action plan measures.

Health Impacts:

In general, consultees thought that this measure could have a positive impact on all of the variables discussed. All consultees thought that working together was essential for the success of the Action Plan. There were a few concerns that some climate change measures seem to contradict air quality measures, which should be addressed

No recommendations were proposed for this measure

Measure M14:	MBC will continue its active involvement and support of the Kent and Medway Air

	Quality Partnership.

Health Impacts:

The general consensus among consultees was that if actions arose from the partnership working, then there could be a positive impact on all of the health parameters discussed. The community group were concerned that this would end up as a "ticking the box" exercise and this should be avoided. Staff should also be aware of the environmental cost of increased travel to meetings etc. The value to the parishes was also questioned. Overall, the value of partnership working was seen as beneficial and active involvement, sharing of information and problem solving should continue.

No recommendations were proposed for this measure

Measure M15:	MBC will continue its active involvement and support of the Low Emissions Strategies (LES) Partnership.

Health Impacts:

Consultees did not really comment on this measure as they felt that the impacts would be dependent on the actions arising from the partnership working. However, it is clear that partnership working is the favoured approach.

No recommendations were proposed for this measure

Measure M16:	MBC will ensure effective co-ordination of local air quality management with Tonbridge & Malling Borough Council.

Health Impacts:

Overall, there was a positive reaction to this measure. It was suggested that KCC should also be involved. Again, the consultees thought that the impacts would be dependent on the actions arising from the partnership working.

No recommendations were proposed for this measure

Measure M18:	MBC will work in partnership with the PCT to establish Health Baselines in various parts of the AQMA plus other parts of the borough.

Health Impacts:

Consultees agreed that this is a necessary step for helping to address health issues and informing the Council policies from a health perspective.

No recommendations were proposed for this measure

6.9 Other Initiatives to Improve Air Quality in the Borough

Measure M10:	MBC & KCC will seek improvements in Emissions Standards for KCC & MBC Council Fleets and Public Service Vehicles.

Health Impacts:

Consultees agreed that this measure would have a positive impact, although to varying extents. All consultees thought that the positive impacts would extend to improved air quality and mental well-being. Questions were raised concerning the cost of providing improved transport (including raw materials and energy); and the fate of the old vehicles after they have been replaced. It was thought that even if the impact was limited, it would still be a good measure to implement for the Council in terms of PR and also in fulfilling the requirements of National Indicators (e.g. 185 and 186).

No recommendations were proposed for this measure

Measure M17: MBC will investigate potential use of NO_X reducing paving and paints in the AQMA.

Health Impacts:

Some of the consultees felt that other measures in the Air Quality Action Plan should have a greater priority than this one. Others thought that this could in fact have a small to moderate positive impact on air quality.

The literature makes reference to a small number of trial studies which have been or are being undertaken to assess the effectiveness of NO_X reducing paving and paints. There is little data available in the public domain and it is therefore recommended that further research needs to be undertaken to assess the value of this technology.

Recommendations:

- To undertake an informed cost-benefit analysis
- To carefully select sites as well as monitoring and analysis of the results

Measure M20: MBC and KCC will carry out regular emissions testing of its vehicle fleet to ensure that all vehicles comply with required emissions standards.

Health Impacts:

The majority of consultees considered this to have limited value since emissions testing is already required annually as part of an MOT.

Recommendations:

- It would be more beneficial for MBC and KCC to reduce their car dependency

Measure M22: MBC and KCC will establish and implement a rolling programme for replacing older more polluting vehicles with newer cleaner vehicles, which comply with the prevailing EURO standard.

Health Impacts:

Again, community members thought it would be more beneficial for MBC and KCC to reduce their car dependency. Others thought that this could have a small positive impact on air quality.

Recommendations:

- Informed choice of fuel type when replacing older vehicles

Measure M23:	MBC and KCC will improve the Council's vehicle fuel consumption efficiency by better management of fleet activities and consider their activities in relation to hotspots.

Health Impacts:

Consultees thought that the overall impact of this measure would be small but that it would allow MBC and KCC to provide a guide to the community. They noted potential small positive impacts on air quality, traffic volume and congestion..

Recommendations:

- Promote the use of other forms of transport
- Provide a low carbon fleet
- Provide fuel efficiency training for car users

Measure M24:	MBC and KCC will investigate options for better travel planning amongst Council employees.

Health Impacts:

Consultees thought that this could have a small positive impact on air quality, traffic volume, congestion, levels of walking and cycling and mental well-being. They were concerned about the potential increase in road traffic accidents for cyclists.

Recommendations:

- Provision of adequate health and safety training for cyclists
- Risk assessments should cover any shifts in transport modes

Measure M25:	MBC and KCC will assess the Council's energy needs and make recommendations to the Council on reduction of carbon emissions.

Health Impacts:

Consultees gave some support to this measure, although thought that the positive impacts would only be small. Again, it shows MBC and KCC to be promoting best practice and this was encouraged by the MBC EH consultees. However, concerns were raised about the potentially negative impacts arising as a result of poor choices being made with regards to new technology.

Recommendations:

- Informed choices for energy and technology for lower impact on air quality and climate

Measure M39:	MBC will establish additional monitoring sites across the borough in locations where poor air quality is suspected.

Health Impacts:

Consultees agreed that this could have a small positive impact on air quality. All consultees identified the importance of having a clear baseline which can be used to inform key decisions.

No recommendations were proposed for this measure

7. SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

This report details the findings of a Health Impact Assessment (HIA) study carried out for the draft AQAP of Maidstone Borough Council. Local Authorities are required by law to undertake a regular assessment of air quality in the area within their jurisdiction in order to ensure that the health-based objectives defined in the regulations for seven pollutants are being complied with. Where an authority identifies exceedence of any of the objectives, it has to declare an Air Quality Management Area (AQMA) and prepare an Air Quality Action Plan (AQAP) containing measures and actions targeting the air pollution in order to achieve the compliance.

Through the statutory Review and Assessment process, Maidstone Borough Council has declared the entire urban area of Maidstone as an AQMA for NO_2 and PM_{10}. A draft AQAP has been produced for consultation of public and statutory consultees. The council also commissioned to undertake a HIA of the draft AQAP. The World Health Organisation defines HIA as *'A combination of procedures, methods and tools by which a policy, programme or project may be judged as to its potential effects on the health of a population, and the distribution of those effects within the population'.*[58]

This HIA is carried out in order to identify the positive and negative impacts of the measures and actions included in the draft AQAP on health and how the positive impacts can be enhanced and negative impacts can be minimised or avoided.

HIA takes a holistic view of human health, and defines it as *'health is a state of complete physical, mental and social well-being and not merely the absence of disease or infirmity'*. Although, the measures and actions in the Maidstone draft AQAP are targeted at reducing air pollution for compliance purposes, the HIA assessed the positive and negative impacts of these on a wider matrix of parameters that are considered to impact helath including;

- Air quality;
- Noise levels;
- Volume of traffic;
- Amount of congestion;
- Road traffic accidents;
- Level of cycling;
- Level of walking;
- Mental well-being;
- Access to jobs, services, facilities and amenities;
- Social contact, interaction and cohesion; and
- Community severance.

Additionally, the HIA also analysed the information gathered during this exercise to identify how the positive impacts could be enhanced and the negative impacts could be minimised or avoided. The HIA also identified if the improvements in one area may occur at the cost of other area.

The information that makes the basis of this HIA is gathered through two sources, consultation and review of literature. The literature review involved studying scientific research papers, HIA reports and reviewing HIAs completed on similar projects elsewhere in the UK. Several consultation events were organised to collate information and opinion of those who have direct input and impact from the AQAP. The events included workshops with stakeholders, community representatives, Councillors and members of Maidstone Borough Council's Environmental Health Department.

Although, the opinion of various consultee groups differed in terms of impact magnitude of draft AQAP measures and actions on air quality and wider parameters the consensus was that there would be a net positive impact overall. The consultation exercises and literature identified positive impacts of the draft AQAP measures on one or more than one parameters including air quality, noise, congestion,

community interaction, access to services and facilities, level of cycling and walking and mental well-being.

The consultation exercises identified that the implementation of three measures, Measure 6 Action 1, Measure 6 Action 3 and Measure 8 may result in adverse impacts in other areas, and provided recommendations on how to balance this adverse distribution of health impacts.

The consultation exercises and literature review has resulted in more than one hundred recommendations in order to enhance the positive impacts and minimise the negative impacts of draft AQAP measures. These recommendations are provided in the table below.

As part of this HIA a comparison of Maidstone community with England and Wales averages have been made for a number of parameters such as health, employment, education and car dependency. These parameters are part of the wider determinants of health. The comparison has helped to identify areas where improvements in air quality aimed in the draft AQAP could help to overcome some inequalities in wider areas within Maidstone community. The summary of the Maidstone community, compared to England and Wales averages, is provided below including areas where the draft AQAP would help to deal with the inequalities in the wider determinants of health:

- Generally, the proportion of elder age groups is higher and younger age group is lower in Maidstone compared to the UK[8]. This indicates an increasing need to tackle air pollution issue, which is considered to have greater impact on vulnerable groups including old people. Therefore, improvement in air quality would benefit overall health of this group.
- The education figures show that there is a lower proportion of population with no qualification, higher proportion with level 1 qualification and lower proportion with level 4/5 qualification in Maidstone. The education levels could be associated with employability. This is reflected in the employment figures presented in Section 3.3.
- The employment figures show that the proportion of economically active people in Maidstone is significantly higher and the proportion of people in jobs perceived to be highly paid is also higher. Employability and better earnings are considered to affect the health and well-being in a positive way. However, there will be variations within Maidstone community such as between urban and rural or inner urban and sub-urban areas, which are not possible to be analysed here.
- The car ownership and travel by car to work is higher in Maidstone Borough compared to England and Wales. This will have implications for health and traffic flows, particularly in urban centre where people generally drive to work. Similarly travel by public transport and on bicycle is lower in Maidstone. The travel on foot or on bicycle is considered beneficial for health. Therefore, the draft AQAP measures would help to improve these trends in a positive way.
- The comparison shows that health of Maidstone community is generally better than the England average. However the following inequalities are identified within Maidstone community:
    - About one third of population lives in deprived areas, where the average life expectancy for men is about 10 years lower compared to living in least deprived areas
    - Rates of early deaths from heart diseases, stroke and cancer have declined over last ten years but still slightly higher compared to England average
    - Over 4,000 children live in poverty
    - The percentage of children who are physically active is significantly worse than the England average
- One study for direct standardised deaths due to COPD shows that the number of deaths in Maidstone are second highest in West Kent and are higher compared to England average, both for males and females.

The studies on air pollution and social deprivation in the UK show that deprived communities bear the greater burden of poor air quality. Therefore, improving air quality would reduce the health inequalities. The measures in the draft AQAP would implicitly tackle these inequalities by improving air quality in

these areas. The improvement in air quality would also result in better health for the residents and measures to encourage walking and cycling would result in increased levels of activity, reduced traffic and air pollution and reduced exposure of vulnerable groups to air pollution.

The overall conclusion of this HIA study is that the measures in the draft AQAP would not only result in the improvement of air quality but improvements in other determinants of health such as noise, congestion, community interaction, access to services and facilities, level of cycling and walking and mental well-being. The positive impacts of the measures could be further enhanced and negative impacts could be minimised by following the recommendations provided when implementing these measures. The HIA process has also identified that the implementation of Action Plan, taking into account the recommendations, would help to reduce the health inequalities identified through the study of Maidstone community profile. Additionally, the improvement in air quality may result in saving in costs for dealing with health impacts resulting from poor air quality.

Table 4 – Maidstone Borough Council Draft AQAP – HIA Summary

Measure/Action	Recommendations	Adverse distribution of Health Impacts
Highway and Road Improvement Measures to Reduce Traffic and Air Pollution		
Measure 1: The Air Quality and Transport Steering Group (AQTSG) will raise awareness of the impact on air quality of the Borough's housing and employment growth targets, and support the transport measures that would be needed to manage and reduce the potential growth in traffic that would be associated with the delivery of these targets. **Action 1**: Regular meetings of the AQTSG to oversee Local Air Quality Management issues		
Measure 1: The Air Quality and Transport Steering Group (AQTSG) will raise awareness of the impact on air quality of the Borough's housing and employment growth targets, and support the transport measures that would be needed to manage and reduce the potential growth in traffic that would be associated with the delivery of these targets. **Action 2**: Identification and prioritisation of any road traffic	▪ Caution should be taken to ensure that any positive impacts resulting from specific road traffic schemes are not at the consequence of introducing negative impacts elsewhere ▪ The Council to ensure that short-term reductions in traffic flows and/or congestion should not result in long-term increase in trips, which would neutralise the positive impacts	

Measure/Action	Recommendations	Adverse distribution of Health Impacts
schemes which may affect traffic flows in Maidstone.		
Measure 1: The Air Quality and Transport Steering Group (AQTSG) will raise awareness of the impact on air quality of the Borough's housing and employment growth targets, and support the transport measures that would be needed to manage and reduce the potential growth in traffic that would be associated with the delivery of these targets. **Action 3**: Section 278 Works: This may achieve improvements in traffic management and emissions, as a result of planning requirements secured through the implementation of development proposals.	▪ Community may be involved in the decision process, wherever possible, to determine the planning conditions and air quality requirements of the development	
Measure 2: M20 J4-7 Controlled Motorway and Network Performance Monitoring **Action 1**: The M20 J4-7 has been identified as a potential site for a controlled motorway scheme by the Highways Agency. When fully operational a Controlled Motorway is designed to tackle issues of local congestion on the motorway and keep traffic moving. The system works by adjusting mandatory speed limits by using various sensors, which are able to detect the	▪ Extend the scheme to include junctions 3 to 8 to provide wider benefits; ▪ Operate the scheme continually (24 hours a day); ▪ Control traffic flows on the linking dual carriageways; ▪ Deliver smarter driving techniques to motorists; ▪ Monitor the effectiveness of the scheme 24/7 and report all findings to the AQTSG; and ▪ To ensure that the scheme is implemented and monitored carefully so that the negative impacts may not occur in other areas.	

Measure/Action	Recommendations	Adverse distribution of Health Impacts
speed and flow of traffic. It works automatically and informs drivers of the reasons for the changes. **Action 2:** Network Performance Monitoring, also a Highways Agency scheme, has been introduced to create a managed area that incorporates the M20, M2, A229 and A249, and allows traffic to be moved around according to congestion pressures on the different routes. This scheme will involve close co-operation between KCC and the Highways Agency Control Centres.		
Measure 3: Urban Traffic Management and Control (UTMC) enhancements The Traffic Management Centre for Maidstone became operational in 2006. An UTMC system is already operational in Maidstone town centre. This is being further developed through the Local Transport Plan (LTP) integrated transport programme, with additional variable message signs and automatic number plate recognition equipment being installed. The next stage will involve an upgrade to the car park management system.	▪ Council to ensure proper management of UTMC enhancements ▪ Regular review of UTMC	
Measure 4: Tackling Congestion Hotspots in Maidstone Congestion hotspots are being identified	▪ Reduce traffic congestion hotspots through distributing facilities around the town ▪ Offer incentives for people to shop in the peripheral areas of the town	

Measure/Action	Recommendations	Adverse distribution of Health Impacts
through the Maidstone UTMC, so these can be specifically targeted by KCC, in terms of improving traffic flow and journey times. These hotspots will be considered in terms of linking in with other measures, such as bus priority measures and Punctuality Improvement Plans.	▪ Increase interaction between MBC and KCC to manage any site-specific problems	
Measure 5: Improved Co-ordination of Roadworks In July 2009, Kent County Council was given the go ahead by Government for a scheme whereby contractors intending to work on Kent's roads will require a permit for the work. This provides KCC with greater capability to co-operate with the utility companies and other highways contractors to control and co-ordinate works and minimise their impact on Kent's roads. MBC would like to work in partnership with KCC to develop a system whereby KCC Highways consult with the MBC Pollution Team and UTMC centre to look at how the proposed works will affect traffic flows (likely congestion and air quality effects) in the light of any other contracted works in the area that has been requested over the same time-frame.	▪ Regular monitoring of coordination of roadworks ▪ To ensure that rat-running in residential streets do not result from this	
Measure 7: Investigation of the distribution of freight in Maidstone town centre Possible heavy goods vehicle time restrictions through the AQMA could be investigated as part of the Freight Quality Partnership and	▪ To undertake a study about freight transport in Maidstone to inform and target freight transport measures appropriately ▪ To ensure that freight traffic is not displaced in other areas causing problem there	

Measure/Action	Recommendations	Adverse distribution of Health Impacts
review of freight routes in the town centre.		
Measure 8: Tackling hotspots with hourly NO_2 objective exceedences Where sites likely to have breaches of the hourly NO_2 objective have been identified within the AQMA, MBC will investigate the potential for implementing schemes which reduce peak hour flow of traffic in order to minimise short-term pollution episodes which are contributing to hourly breaches.	▪ To undertake modelling prior to the implementation of any new scheme to assess impact on traffic in various areas ▪ Appropriate signage ▪ Link the scheme to measure incidents of COPD in the Borough ▪ Increase the number of out of town car parks ▪ Investigate the effectiveness and feasibility of a LEZ in Maidstone town ▪ Ensure there is adequate public transport	May push traffic in other areas, creating new hotspots
Measure 9: Town Centre Regeneration Action Plan The Letts Wheeler's scheme design anticipates that the main vehicular carriageway is moved to the south of the street to create two large pedestrian squares outside the Town Hall and in Lower High Street to enable events to take place and restaurants to spill on to the street. A programme of consultation with various interested groups is being carried out to refine the design and the final design will go back to Cabinet for approval.	▪ To ensure that disabled citizens are not negatively impacted as a result of the programme, consultation should be undertaken with the Disability Forum prior to the finalisation of plans ▪ To provide good and economical out of town car parks ▪ Consider installing cycle paths and cycle parks to encourage cycling ▪ Co-ordinate this scheme with plans for further development of the town as a whole ▪ To ensure that traffic spillage to out of town areas is considered at the planning stage of the scheme ▪ To develop a robust car parking strategy	
Initiatives to Promote Increased Use of Public Transport in Maidstone		
Measure 6:	▪ Quantify the air quality impact of the proposal through an assessment	Bus lane could displace

Measure/Action	Recommendations	Adverse distribution of Health Impacts
Improvements to public transport **Action 1**: An extension of the existing bus lane on the A274 Sutton Road is proposed to create capacity for a new bus route.	▪ Quantify the noise impact of the proposal through an assessment ▪ Have multiple bus stops on the new bus route as well as discounted fares to encourage more people to use the bus ▪ Raise awareness to use public transport ▪ Ensure that the buses are clean and that there is a good, well run service ▪ Allow cyclists to use the bus lane or create cycle paths in addition to the bus lane to encourage cycling.	traffic elsewhere, creating negative health impacts for others areas, in this case along Willington Street, through the Slepway Estate.
Measure 6: Improvements to public transport **Action 2**: Maidstone Quality Bus Partnership plans to continue making improvements to the buses, infrastructure and services provided.	▪ Provide fuel-efficient and low carbon buses ▪ Select quieter buses over louder ones ▪ Ensure that there are enough buses available on the routes ▪ Provide improved timetables and make them easily available to all ▪ Consider more ticketing and interchange with other forms of public transport	
Measure 6: Improvements to public transport **Action 3**: Langley Park Farm Park and Ride site has been previously identified by Maidstone Borough Council as a potential replacement for the former Park and Ride operation at Coombe Quarry. Design work will be undertaken to assess the priority for taking this option forward. Additional investigation will continue on other sites, particularly those on the A229 axis north and south of the town.	▪ Increase the number of stops on bus routes from the Park & Ride ▪ Encourage people to walk or cycle to and from the Park & Ride site where possible ▪ Introduce screening around the Park & Ride site for noise ▪ Consider the site location very carefully through thorough assessment of various options and health impacts	Langley area may experience negative health impacts as a result of this action. Such negative impacts include increased volume of traffic, amount of congestion, noise levels, community severance; and decreased mental well-being.

Measure/Action	Recommendations	Adverse distribution of Health Impacts
Measure 6: Improvements to public transport **Action 4**: Rail network improvements: Rail improvements are being secured through implementation of the Kent Rail Utilisation Strategy. This includes measures to improve journey times by rail and improve facilities at Kent's stations and access to the stations by all modes; integrating rail travel with the car, bus, walking and cycling. KCC and MBC are working with South Eastern and Network Rail to secure improved rail services in Maidstone.	▪ Publicise all of the improvements to increase awareness among the public ▪ Encourage and give incentives to people to use the new services such as cheaper to use public transport people to use the new services.	
Measure 31: Maidstone Borough Council will continue to work with Kent County Council and transport providers to support and promote increased uptake of public transport modes.	▪ Ensure that MBC is represented on all local transport groups ▪ Promote good, reliable and clean public transport services ▪ Promote pedestrian and cycle routes to public transport stops ▪ Provide adequate cycle storage at bus stops and stations	
Marketing and Education Initiatives to Raise Awareness Among the Public		
Measure 21: MBC will promote the uptake and use of cleaner or alternative fuels where possible.	▪ To disseminate literature about different types of fuels available and their air quality impact allowing people to make informed choices	
Measure 26: MBC will implement initiatives to educate communities on air pollution issues and ways to minimise impacts on air quality	▪ The information to be delivered in an easy to understand form and in formats acceptable to all parts of the community ▪ Initiatives to be targeted at easy to reach groups such as school children, NGOs, cycling/walking groups as well as key polluters	

Measure/Action	Recommendations	Adverse distribution of Health Impacts
Measure 27: MBC will provide the public with relevant air quality information thus enabling commuters to make informed choices about their transport options	▪ To use a sustained approach to implement this strategy, ensuring its success in the long term ▪ Information easy to understand and in suitable and readily accessible formats ▪ Information not disproportionately worrying about health and well-being	
Measure 28: MBC will continue to work in partnership with Kent County Council to increase uptake and implementation of School and Workplace Travel Plans, particularly where likely to impact on the Air Quality Management Area.	▪ Introduce car clubs and car sharing ▪ Introduce cycling and walking clubs ▪ Increase cycle storage facilities ▪ Mandatory travel plans for new developments ▪ Guide schools and other organisations to prepare and implement travel plans ▪ Monitor travel plans	
Measure 36: MBC will promote composting in a bid to reduce pollution from domestic bonfires	▪ Council to target potential polluters such as rural property owners ▪ Council to work in air quality hotspots to enhance the success of the scheme. Bonfire bans ▪ Stricter legislation ▪ Bonfire permits ▪ Improved education ▪ Improved waste management ▪ Leafleting to be carried out around peak bonfire periods. ▪ Information disseminated to the public from places such as garden centres and recycling points	
Measure 37: MBC will continue to monitor a range of air pollutants throughout Maidstone and make the monitoring information freely available to the public in an easily understood form.	▪ Easy to understand, factual information to be targeted at easy to reach groups, poor air quality hotspots and key polluters ▪ the information flow to be two-way where possible so that the public has a chance to provide feedback to the Council on the information received	

Measure/Action	Recommendations	Adverse distribution of Health Impacts
Measure M38: MBC will ensure that all air quality monitoring data reported to the public is both accurate and precise by implementing quality control measures.		
Initiatives to promote Walking and Cycling in Maidstone		
Measure 30: MBC will encourage their employees to consider the use of bicycles in their daily duties by providing cycle usage mileage.	▪ To ensure that adequate safety provisions are made for cyclists ▪ Provision of cycle facilities such as on-road bike routes, on-road bike lanes, off-road bike paths as well as street lighting, paved surfaces and low-angled grades ▪ Safety education and bicycle training	
Measure 29: MBC will continue working partnerships with Kent County Council, Sustrans and the Maidstone Cycling Forum to ensure that walking and cycling initiatives are promoted and supported in Maidstone. An updated cycle strategy for the town is to be developed.	▪ Wide and joined up cycle lanes independent from other traffic lanes are essential ▪ No car parking on cycle lanes should be enforced ▪ Provide clear signage for pedestrians and cyclists ▪ Educate people on the health benefits of walking and cycling ▪ Provide cycle safety training ▪ Ensure that Maidstone town centre is not the only place to benefit from this measure ▪ Give support to pedestrians (not just cyclists), for example through provision of free pedometers	
Measures to Incorporate Air Quality Controls within the Development Process		
Measure M11: MBC will ensure local air quality is fully	▪ Adequate enforcement to ensure that air quality conditions are adhered to ▪ To monitor implementation of planning conditions	

Measure/Action	Recommendations	Adverse distribution of Health Impacts
integrated into the LDF process and development scenarios are appropriately assessed with respect to the potential impacts on air quality. An air quality Supplementary Planning Document (SPD) is under development.	▪ MBC Environmental Health Department would like to be consulted on specific schemes at the design stage.	
Measure M12: MBC will request S106 contributions for developments likely to have an air quality impact on the town centre AQMA.	▪ Air quality considerations to be given priority in deciding for 106 contributions ▪ A borough-wide policy for 106 contributions to avoid disproportionate out of town development	
Measure M32: MBC Environmental Health will comment upon planning applications to ensure that all relevant air quality issues are highlighted and mitigation measures are considered wherever possible.	▪ Incorporation of carbon and air quality emissions reduction in policy documents ▪ A more robust stance in relation to S106 and CIL would facilitate this	
Measure M19: MBC will encourage the planting of trees which benefit air quality within the borough through the planning process, Maidstone's Green Spaces Strategy and community partnerships.	▪ To undertake effective leaf clearance so as not to create a nuisance for nearby residents ▪ To ensure that trees do not block CCTV cameras, nor create hazards for road users ▪ Selection of appropriate tree species and planting strategy to benefit air quality in Maidstone keeping in view local conditions and research findings	
Legislative or Enforcement Measures that will Contribute to Reducing Air Pollution		
Measure M33: MBC will permit and regularly inspect industrial	▪ Environmental Permits should be fit for purpose and ensure that adequate air pollution abatement is used in industrial premises	

Measure/Action	Recommendations	Adverse distribution of Health Impacts
premises under the Pollution Prevention and Control regulatory regime.		
Measure M34: MBC will enforce statutory nuisance legislation to control smoke, dust, fumes or gas emissions from commercial and domestic premises which are causing a nuisance or are prejudicial to health.	▪ The enforcement team should be adequately staffed to ensure that this measure is implemented ▪ Tp provide advice to organisations to encourage them to enhance their performance as well as sticking to the minimum requirements imposed	
Measure M35: MBC will enforce relevant legislation to reduce the burning of commercial and domestic waste.	▪ The enforcement team should be adequately staffed to ensure that this measure is implemente ▪ To provide advice to organisations and individuals about burning practices, impacts and regulations	
Working in Partnership to Target Air Pollution		
Measure M13: MBC will ensure effective co-ordination between climate change and air quality strategies and action plan measures.		
Measure M14: MBC will continue its active involvement and support of the Kent and Medway Air Quality Partnership.		
Measure M15: MBC will continue its active involvement and support of the Low Emissions Strategies (LES) Partnership.		

Measure/Action	Recommendations	Adverse distribution of Health Impacts
Measure M16: MBC will ensure effective co-ordination of local air quality management with Tonbridge & Malling Borough Council.		
Measure M18: MBC will work in partnership with the PCT to establish Health Baselines in various parts of the AQMA plus other parts of the borough.		
Other Initiatives to Improve Air Quality in the Borough		
Measure M10: MBC & KCC will seek improvements in Emissions Standards for KCC & MBC Council Fleets and Public Service Vehicles.		
Measure M17: MBC will investigate potential use of NO_X reducing paving and paints in the AQMA.	▪ To undertake an informed cost-benefit analysis ▪ To carefully select sites as well as monitoring and analysis of the results	
Measure M20: MBC and KCC will carry out regular emissions testing of its vehicle fleet to ensure that all vehicles comply with required emissions standards.	▪ It would be more beneficial for MBC and KCC to reduce their car dependency	
Measure M22: MBC and KCC will establish and implement a	▪ Informed choice of fuel type when replacing older vehicles	

Measure/Action	Recommendations	Adverse distribution of Health Impacts
rolling programme for replacing older more polluting vehicles with newer cleaner vehicles, which comply with the prevailing EURO standard.		
Measure M23: MBC and KCC will improve the Council's vehicle fuel consumption efficiency by better management of fleet activities and consider their activities in relation to hotspots.	▪ Promote the use of other forms of transport ▪ Provide a low carbon fleet ▪ Provide fuel efficiency training for car users	
Measure M24: MBC and KCC will investigate options for better travel planning amongst Council employees.	▪ Provision of adequate health and safety training for cyclists ▪ Risk assessments should cover any shifts in transport modes	
Measure M25: MBC and KCC will assess the Council's energy needs and make recommendations to the Council on reduction of carbon emissions.	▪ Informed choices for energy and technology for lower impact on air quality and climate	
Measure M39: MBC will establish additional monitoring sites across the borough in locations where poor air quality is suspected.		

APPENDIX 1 – CONSULTEES

The full list of consultees is provided below:

Stakeholder Workshop

John Newlington – Maidstone Borough Council
Jennifer Hunt – Maidstone Borough Council
Jane Coombes – Maidstone Borough Council
Stuart White – Maidstone Borough Council
Steve Wilcock – Maidstone Borough Council
Sheila Davison – Maidstone and Ashford Borough Council
Jacqui Raids – Tonbridge and Malling Borough Council
Sarah Jane Edwards-Bonner – Maidstone Borough Council
John Burns – Highways Agency
John Luckhurst – Maidstone Borough Council
Toby Butler – Kent Highway Services
Marilyn Kimber – Maidstone Borough Council
Brendon Neal – Maidstone Borough Council
Sharon Atkins – Bureau Veritas

Community Workshop

Jenny Fairfax – Staplehurst Parish Council
Joan Buller – Staplehurst Parish Council
Michael Griffiths – local cycle club and Living Streets
Kevin Street – Bearsted Parish Council
Heather Woodward – NHS Health Promotion Practitioner
John Clayton – Detling Parish Council
Richard Adam – Marden Parish Council
Mario Molinari – New Literacy
Kate Sparkes – Bell Wood Community Primary School
Mike Yates – Maidstone Borough Council

Councillor Workshop

Councillor Bryan Vizzard – Heath Ward
Councillor Fran Smith – Fant Ward
Councillor Clive English – High Street Ward
Councillor Daniel Moriarty – Park Wood Ward
Councillor Rodd Nelson-Gracie – Marden and Yalding Ward

Councillor Richard Ash – Bearsted Ward

Councillor Richard Lusty – Staplehurst Ward

Councillor Tony Harwood – North Ward

Councillor Jenni Paterson – North Ward

Councillor Ian Chittenden – South Ward

Councillor Fran Wilson – High Street Ward

MBC Environmental Health

Steve Wilcock

John Newington

Sarah Jane Edwards-Bonner

Rosalyn Bower-Smith

APPENDIX 2 – FEEDBACK ON MEASURES NOT INCLUDED IN FINAL DRAFT AQAP

This section provides summary of the feedback on measures that were dropped from the final draft of the AQAP based on the outcomes of the consultation process. As discussed above, the feedback is provided only for completeness and transparency and it should be noted that these measures are not considered for further assessment.

Measure:	New road infrastructure provision
Action:	South East Maidstone Strategic Link (SEMSL): This proposed road would link the A274, with the A20 roundabout adjacent to M20 Junction 8.

Stakeholder Consultation

Stakeholders thought that this action would result in a large positive impact on air quality as it would reduce the impact in the AQMA; and thought that effective encouragement to use this new route would enhance the positive impact. They noted a small negative impact on air quality in rural areas and commented that the project should be open to consultation due to the sensitive location of the new road. The group also discussed a large positive impact on access to jobs, services, facilities and amenities as the scheme would open up a new area of development, potentially making more jobs and services available to the community. However, concerns were expressed that the new road could create a division in rural communities and therefore suggest that the exact location of the road is well planned and propositions are carefully consulted.

Noise levels were considered to be both positively and negatively impacted by the new road. The group thought that the possible diversion of HGV's might reduce noise levels in the AQMA and that adequate signage to encourage use and road width restrictions would enhance positive impacts. Increased noise might be experienced in rural areas and the group suggested that sound barriers and other noise attenuation measures should be considered in the development.

The group thought that the volume of traffic would decrease where targeted, however traffic in rural areas would increase. They also thought that the amount of congestion would be reduced within the AQMA and on the B2163; and that the amount of road traffic accidents would be reduced, in particular on the A274, B2163 and possibly on rural roads.

Stakeholders thought that the new road would increase the level of cycling because the roads would become less dangerous and a lot of traffic would be diverted from the urban growth point away from the A274. The group would like to ensure that the design of the road promotes cycling and suggest that signs are displayed on the quieter rural roads. The group noted that sensible speed limits should be set so as not to discourage cycling. The group thought that the action would have very little impact on the level of walking.

The group thought that mental well-being would be improved for those who currently experience stress as a result of congestion, poor air quality and high levels of noise. To enhance this positive impact, the group recommended involving communities in the consultation and project implementation. Conversely, the group thought that there would be a negative impact on mental well-being due to the stress associated with the construction of the new road and potential decreases in house prices. Again, community involvement is encouraged.

Social contact and community severance were considered likely to experience a small positive impact as a result of improved access to facilities by the "urban extension"; although there may also be a negative impact from the potential division of local communities.

Overall, the group thought that the negative impacts on air quality and noise would be re-distributed to rural areas and concluded that they are opposed to this action.

Measure:	New road infrastructure provision
Action:	All Saints Link Road (ASLR): This proposed link road could provide the missing link to the gyratory system and provide air quality improvements in one of the main pollution hotspots around Knight Rider Street and Lower Stone Street. In the longer term, regeneration is intended to extend further up into Upper Stone Street, where the highest pollutant levels are being measured in the AQMA.
Action:	Maidstone Town Centre Bridge Gyratory: This proposed scheme would provide two lanes northbound on the eastern side of the river, allowing A229 traffic to avoid crossing the river twice. Design work and option appraisal is continuing this financial year with EDF Energy, whose substation may require modification as part of the scheme.

Stakeholder Consultation

Stakeholders considered these actions to be similar in nature and therefore discussed them together. The group thought that these actions would improve traffic flow which would in turn reduce air pollution and congestion. However, the group commented that the construction phase would lead to significant problems, for example, an increased number of vehicles would lead to increased air pollution. In order to minimise the negative impacts associated with the roads the group recommended that there should be restrictions on the vehicle types and hours of use permitted. In particular, that the roads should not be used by HGV's. Overall, the group thought that the schemes could be cost-effective.

APPENDIX 3 – SUMMARY OF CONSULTATION RESPONSES

1 Highway and Road Improvements to Reduce Traffic and Air Pollution

Measure 1: The Air Quality and Transport Steering Group (AQTSG) will raise awareness of the impact on air quality of the Borough's housing and employment growth targets, and support the transport measures that would be needed to manage and reduce the potential growth in traffic that would be associated with the delivery of these targets.

Action 1: Regular meetings of the AQTSG to oversee Local Air Quality Management issues.

Councillor Consultation
Councillors thought that there would be a large positive impact on air quality and levels of cycling; a moderate positive impact on the volume of traffic and levels of walking; and a small positive impact on noise levels, the amount of congestion and mental well-being. The group noted that cyclist and pedestrian accidents could increase as a result. They suggested that this potentially negative effect could be minimised through the creation of cycle routes and pedestrian pathways.

MBC EH Consultation
MBC Environmental Health (EH) department thought that this measure was a positive one and that the sharing of information and resources for the common goals between organisations will benefit air quality. The group commented that raising awareness within EH of the potential schemes that may affect air quality would help them to identify schemes that they need to comment on to minimise that impact. No negative impacts were identified by the group.

Measure 1: The Air Quality and Transport Steering Group (AQTSG) will raise awareness of the impact on air quality of the Borough's housing and employment growth targets, and support the transport measures that would be needed to manage and reduce the potential growth in traffic that would be associated with the delivery of these targets.

Action 2: Identification and prioritisation of any road traffic schemes which may affect traffic flows in Maidstone.

MBC EH Consultation
MBC EH thought that the identification of positive and negative impacts would be scheme-specific, but broadly that the identification and prioritisation of schemes at an early stage would enable decisions to be made which take air quality into account. In this way, the positive impacts can be maximised and the negative impacts minimised. They commented that any scheme has the potential to send traffic to different areas and create new or diverted congestion or pollution problems.

Measure 1: The Air Quality and Transport Steering Group (AQTSG) will raise awareness of the impact on air quality of the Borough's housing and employment growth targets, and support the transport measures that would be needed to manage and reduce the potential growth in traffic that would be associated with the delivery of these targets.

Action 3: Section 278 Works: This may achieve improvements in traffic management and

emissions, as a result of planning requirements secured through the implementation of development proposals.

Stakeholder Consultation
Stakeholders found it difficult to comment on this action without having detailed information on the individual schemes, but noted that in general positive impacts were highly likely. The group pointed out that the community should be involved in deciding what the planning and air quality requirements are.

MBC EH Consultation
The MBC EH group thought that the effectiveness of this measure was difficult to assess as it depends on what schemes are devised through this avenue. They note that good planning and co-ordination between interested parties would enhance the benefits.

Measure 2: M20 J4-7 Controlled Motorway and Network Performance Monitoring

Action 1: The M20 J4-7 has been identified as a potential site for a controlled motorway scheme by the Highways Agency. When operational a Controlled Motorway is designed to tackle issues of local congestion on the motorway and keep traffic moving. The system works by adjusting mandatory speed limits by using various sensors, which are able to detect the speed and flow of traffic. It works automatically and informs drivers of the reasons for the changes.

Action 2: Network Performance Monitoring, also a Highways Agency scheme, has been introduced to create a managed area that incorporates the M20, M2, A229 and A249, and allows traffic to be moved around according to congestion pressures on the different routes. This scheme will involve close co-operation between KCC and the Highways Agency Control Centres.

Stakeholder Consultation
Stakeholders considered these actions to be similar in nature and therefore discussed them together. The group thought that the measure set out was largely positive, notably decreasing the amount of congestion and also having a small positive impact on air quality, noise levels, road traffic accidents and mental well-being. To further enhance the positive impacts of the scheme it was suggested that education should be delivered on smoother driving techniques and the extension of the scheme to include junctions 3 to 8 should be considered. The volume of traffic could be negatively impacted and diversion to more suitable routes should be considered to minimise this. Diversion routes of A229/A249 may experience harmful impacts as a result of the scheme.

Community Consultation
Community consultees thought that this measure was positive in terms of air quality, noise levels, congestion, road traffic accidents, mental wellbeing and access issues. The group noted that reduced congestion on the M20 could also benefit 'A' roads (e.g. A20) which are currently used by traffic avoiding motorway problems. Also, reduction of through-traffic on nearby roads could improve economies and quality of life. However, the group were concerned that this measure could encourage traffic growth and therefore increase the overall volume of traffic.

Councillor Consultation
Action 1 comments
Councillors thought that this measure would have a large positive impact on noise levels and mental well-being; a moderate positive impact on air quality and road traffic accidents; and a small positive impact on the amount of congestion as well as social contact, interaction and cohesion. The group thought that the key to the effectiveness of the controlled motorway is a 24 hour operation. They also

note that it will be important to effectively control the linking dual carriageways. No negative impacts were identified by the group.

Action 2 comments
The group thought that there could be a small positive impact on air quality and the amount of congestion, but thought that in reality there will be little difference because the congestion at present is so great. They also thought that there would be a small improvement in the mental well-being of motorists and that access to jobs and services might be improved for car users. The group thought that there could be a small negative impact on the level of noise as a result of improved flows leading to increased speeds. There were also concerns that the level of walking might be reduced on trunk roads as a result of the increased flows reducing crossing opportunities etc.

MBC EH Consultation
Action 1 comments
MBC EH department thought that this would have a moderately positive impact on air quality, noise levels, volume of traffic, amount of congestion and road traffic accidents; and a small positive impact on access to jobs, services, facilities and amenities. The group was however concerned that this measure could displace traffic congestion and poor air quality to the roads leading up to the traffic restrictions. The effectiveness of the measure should be monitored to ensure that the problem is not moved elsewhere.

Action 2 comments
MBC EH thought that this could be positive in terms of air quality, noise levels, volume of traffic, amount of congestion, road traffic accidents and access to jobs and services. However, they also thought that there could be negative impacts for each of these parameters. If poorly managed they thought that there could be problems in new areas. They would like the scheme to be constantly monitored and assessed and all findings to be reported to the Air Quality and Transport Steering Group.

Measure 3: Urban Traffic Management and Control (UTMC) enhancements
The Traffic Management Centre for Maidstone became operational in 2006. A UTMC system is already operational in Maidstone town centre. This is being further developed through the LTP integrated transport programme, with additional variable message signs and automatic number plate recognition equipment being installed. The next stage will involve an upgrade to the car park management system.

MBC EH Consultation
MBC EH thought that this could have a moderate positive impact on air quality and the volume of traffic, as well as small positive impacts on noise levels, the amount of congestion and the level of cycling. They thought that assessment of specific UTMC schemes could help to enhance any positive impacts. They were concerned that there could be negative impacts on air quality, noise levels, volume of traffic and amount of congestion should the UTMC not be managed appropriately. The group highlighted the need for regular review.

Measure 4: Tackling Congestion Hotspots in Maidstone
Congestion hotspots are being identified through the Maidstone UTMC, so these can be specifically targeted by KCC, in terms of improving traffic flow and journey times. These hotspots will be considered in terms of linking in with other measures, such as bus priority measures and Punctuality Improvement Plans.

Stakeholder Consultation
Stakeholders considered this measure to be generally helpful, with positive impacts on air quality, noise levels, amount of congestion, road traffic accidents, mental well-being and access to jobs,

services, facilities and amenities. To enhance these positive impacts, traffic flows should be monitored so that the Council can work towards creating smoother traffic flows and more reliable journeys. The group noted that there may be small negative impacts on the volume of traffic and the level of walking as people may be encouraged to drive more and walk less.

Community Consultation
Community members thought that this measure could improve air quality, access to services and community contact, whilst also reducing noise levels and congestion. They thought that this measure could potentially reduce the amount of 'rat-running' on nearby roads. The group suggested reducing traffic through congestion hotspots by distributing facilities around the town and offering incentives for people to open shops in peripheral areas. The group was concerned that this measure could encourage traffic growth and hence increase the overall volume of traffic. They mentioned that cyclists and pedestrians may be negatively affected by faster traffic and that this could also lead to an increase in road traffic accidents. Another concern was raised over increased community severance resulting from more traffic.

Councillor Consultation
Councillors thought that this measure would have a moderate positive impact on air quality; and a small positive impact on the volume of traffic and amount of congestion. The group also thought that there would perhaps also be a small positive impact on mental well-being and access to jobs and services for motorists. The group noted a potentially negative impact on the levels of walking if people are persuaded back into their cars as a result of reduced congestion.

MBC EH Consultation
MBC EH thought that there could be both positive and negative impacts dependent on site-specific schemes. They commented that interaction between MBC and KCC should manage any site-specific problems.

Measure 5: Improved Co-ordination of Roadworks
In July 2009, Kent County Council was given the go ahead by Government for a scheme whereby contractors intending to work on Kent's roads will require a permit for the work. This provides KCC with greater capability to co-operate with the utility companies and other highways contractors to control and co-ordinate works and minimise their impact on Kent's roads. MBC would like to work in partnership with KCC to develop a system whereby KCC Highways consult with the MBC Pollution Team and UTMC centre to look at how the proposed works will affect traffic flows (likely congestion and air quality effects) in the light of any other contracted works in the area that has been requested over the same time-frame.

Stakeholder Consultation
Small positive impacts on air quality, noise levels, volume of traffic, amount of congestion, mental well-being and access to jobs, services, facilities and amenities were identified by the stakeholders. The group recommend that advance notice of works is given to the public. Confidence in the system and sufficient planning will enhance the overall positive impact.

Community Consultation
The community group noted only positive impacts associated with this measure, including improved air quality, mental wellbeing and access to services, and reduced congestion. Again the group felt that this measure had the potential to reduce 'rat-running' on nearby roads. They commented that whilst the improvements were welcome, the proposal may not remain effective in the medium or long term and will require monitoring.

Councillor Consultation
Councillors thought that this measure might have a small positive impact on air quality, the amount of congestion, road traffic accidents and access to jobs and services. No negative impacts were identified by the group.

MBC EH Consultation
The MBC EH group thought that there would be moderate positive impacts on air quality and the amount of congestion; with additional small positive impacts on noise levels, the volume of traffic and levels of cycling and walking. The group commented that roadworks in specific hotspot areas will benefit considerably from planning the timing of the works. No negative impacts were identified by the group.

Measure 7: Investigation of the distribution of freight in Maidstone town centre
Possible heavy goods vehicle time restrictions through the AQMA could be investigated as part of the Freight Quality Partnership and review of freight routes in the town centre.

Stakeholder Consultation
The stakeholder group conclude that the investigation needs to quantify the effects on health and the results need to be used when developing a policy or action plan.

Community Consultation
Community consultees thought that this measure would have a small positive impact on access to jobs, services, facilities and amenities, social contact, interaction and cohesion, and community severance. They felt that deliveries should be time-restricted to avoid the main shopping times. However, they commented that restrictions in the town centre could potentially displace lorry traffic to unsuitable routes around the edge of Maidstone. The group commented that there is not very much industry generating freight traffic in the town centre and that there are already some restrictions on time deliveries.

Councillor Consultation
If actions accrue from the investigation, the group of Councillors thought that there could be small positive impacts in terms of air quality, noise levels, volume of traffic, amount of congestion, road traffic accidents, mental well-being and community severance.

MBC EH Consultation
MBC EH group commented that there would be no direct effect on any of the parameters discussed but that this measure is a vital step in targeting other measures where HGVs are the key air quality pollutant source.

Measure 8: Tackling hotspots with hourly NO_2 objective exceedences
Where sites likely to have breaches of the hourly NO_2 objective have been identified within the AQMA, MBC will investigate the potential for implementing schemes which reduce peak hour flow of traffic in order to minimise short-term pollution episodes which are contributing to hourly breaches.

Stakeholder Consultation
Stakeholders thought that this measure would have a large positive impact on air quality, noise levels, volume of traffic and the amount of congestion. They thought that this measure would reduce road traffic accidents and community severance; and improve mental wellbeing and social contact. The group thought that the level of cycling could be improved, especially where cycle routes were integrated within a new scheme. Concerns were raised that reducing peak hour flow of traffic in one location could push traffic elsewhere, in turn creating new hotspots. It was suggested that modelling is undertaken prior to the implementation of any new schemes, although who would cover the costs of such modelling was questioned. Maidstone Borough Council would like to link the scheme to measure incidents of COPD in the borough.

Community Consultation

The community consultation group thought that this measure would have an overall large positive impact in terms of air quality, noise levels, volume of traffic, amount of congestion, road traffic accidents and mental wellbeing. In addition, the group thought that there would be an increase in the level of cycling as a result of the measure. The group thought that a large negative impact would be experienced in terms of access to jobs, services, facilities and amenities. To combat this, the group recommended the use of effective signage which should detail distance information. They also made a suggestion to increase the number of out of town car parks. The group recommended making Maidstone town centre a pedestrian only area, but with the provision of public transport for the frail, elderly and disabled. The group noted that schemes like this will only move traffic elsewhere and will not act to reduce the demand for motor transport.

Councillor Consultation
Councillors thought that this measure would have a large positive impact on air quality in the Borough. They also anticipated further positive impacts on the volume of traffic, amount of congestion and road traffic accidents; and to a lesser extent on noise levels, mental well-being and access to jobs, services, facilities and amenities. To enhance the positive impact on the community's well-being, the group commented on the need for positive publicity. The group agreed that this measure would only be achievable if the public have alternative transport choices.

MBC EH Consultation
MBC EH thought that this measure would have a moderate positive impact on air quality, the volume of traffic and amount of congestion. In addition, they thought that there would be small positive impact on the following: noise levels, road traffic accidents, levels of cycling and walking, mental well-being, access to jobs and community severance. They thought that the overall benefits would be dependent on the scheme or actions adopted.

Measure 9: Town Centre Regeneration Action Plan
The Letts Wheeler's scheme design anticipates that the main vehicular carriageway is moved to the south of the street to create two large pedestrian squares outside the Town Hall and in Lower High Street to enable events to take place and restaurants to spill on to the street. A programme of consultation with various interested groups is being carried out to refine the design and the final design will go back to Cabinet for approval.

Stakeholder Consultation
Based on there being no pedestrian areas and continued use of the High Street by buses and taxis, stakeholders thought that a small positive impact would be experienced on the level of walking, social contact, interaction and cohesion, and community severance. The group thought that access to jobs, services, facilities and amenities for disabled citizens may decrease as a result of the programme and would like to ensure that the Disability Forum has been consulted.

Community Consultation
The community group thought that this measure would have an overall large positive impact on air quality, noise levels, volume of traffic, amount of congestion, road traffic accidents, level of walking, mental wellbeing, access to services and social contact. The group made a note that this measure would only be feasible if excellent edge of town car parks were provided and these would have to be economical for the users. The group recognised that a large negative impact could be experienced on the level of cycling. In order to minimise this impact, the group recommended the provision of cycle paths.

Councillor Consultation
Overall, the group thought that this was a positive measure which would improve all of the variables questioned; most notably air quality, the volume of traffic, amount of congestion and social contact, interaction and cohesion. The group thought that the positive impacts on mental well-being, access to services and social contact could be enhanced by opening large and interesting stores in a central location. However, the group noted the importance of providing sufficient signage to ensure that these variables were not negatively impacted, for example through people struggling to adjust to the

relocation of new bus stops. The group thought that there could be a small positive impact on the level of cycling and walking, but that this was dependent on the location and availability of suitable routes. Councillors felt that this development should be co-ordinated with plans for further development of the town as a whole. The group were however concerned that the measure could have a negative impact on volume of traffic, amount of congestion and road traffic accidents in other areas.

MBC EH Consultation
MBC EH thought that this measure could have a small positive impact on air quality which could be enhanced by the introduction of a low emission zone and low carbon buses. This was likened to Oxford City Centre. To minimise any negative impact on air quality and noise levels, the group thought that the location of bus stops and taxi ranks was important. The group also thought that this measure could have a moderate positive impact on the level of walking; with further small positive impacts on noise levels, volume of traffic, amount of congestion, level of cycling, mental well-being, access to jobs and social contact. To further enhance the level of cycling the group suggested introducing a cycle park as well as increasing signage for major routes. Concerns were expressed that the town centre regeneration could lead to traffic being displaced to other routes through the town away from the town centre.

2 Initiatives to Promote Increased Use of Public Transport in Maidstone

Measure 6: Improvements to public transport

Action 1: An extension of the existing bus lane on the A274 Sutton Road is proposed to create capacity for a new bus route.

Stakeholder Consultation
Stakeholders thought that small long-term positive impacts would result with regards to the volume of traffic, amount of congestion, road traffic accidents and access to jobs, services, facilities and amenities; although the group felt that there would be small short-term negative impacts in these areas also. To enhance the positive impacts, the group felt that improvements to the buses themselves were required and that effective publicity will be necessary to encourage people to use the buses. In addition, it was suggested that the level of cycling could be increased through allowing cyclists to use bus lanes. The group thought that small negative impacts on air quality, noise levels and mental well-being may be experienced. The group remarked that the problem will probably be distributed elsewhere, for example “rat-runs” along Willington Street, through the Slepway Estate.

Community Consultation
The community consultees thought that although there would be a small positive impact on the volume of traffic, road traffic accidents and level of walking; this measure would also have a negative impact on air quality, noise levels, amount of congestion and level of cycling. The group also thought that there may be a negative impact on mental wellbeing as a result of increased delays and congestion. The consultees recommended having multiple stops on the new bus route as well as discounted fares to encourage more people to use the bus. The group thought that they needed more information to make a conclusive judgement about the measure.

Councillor Consultation
The group of Councillors thought that this measure would have a small positive impact on air quality. The group also noted the potential for a small negative impact on the amount of congestion as a result of space being taken away from cars to make way for the new bus route.

MBC EH Consultation
MBC EH thought that this could have a small positive impact on air quality, however also thought that there might be a negative impact on air quality as a result of increased congestion. They suggested that the air quality impact could be quantified by conducting an air quality assessment of the proposal. The group thought that a moderate positive impact on the level of cycling could be achieved if the new

bus lane was also used by cyclists as a cycle lane. Access to amenities could be positively impacted, especially if bus stops are located correctly. Other small positive impacts include decreases in the volume of traffic and amount of congestion, should a modal shift be encouraged. Mental wellbeing could be enhanced if there is a clean and well run service. To avoid a potential increase in noise, the group suggested conducting a noise assessment and undertaking any necessary mitigation if identified.

Measure 6: Improvements to public transport

Action 2: Maidstone Quality Bus Partnership plans to continue making improvements to the buses, infrastructure and services provided.

Stakeholder Consultation

During the workshop, stakeholders considered the action to be positive in terms of air quality, noise levels, volume of traffic, amount of congestion, mental well-being, access to services, social contact and community severance. The group thought that more fuel efficient buses could help to alleviate poor air quality. They noted that a lack of buses could impact negatively on air quality and emphasised the need to make sure that there are enough buses available on the routes. They thought that the more buses in operation, the more likely it is that the public will use them. The group thought that quieter buses should be selected over noisier older buses to ensure improved noise levels. Stakeholders commented that the amount of congestion could increase if traffic lanes are designated bus lanes and become unavailable to car users. In general, the group thought that improving bus services was mainly positive and could not initially see any distribution of harmful impacts elsewhere.

Community Consultation

In general, the community consultees thought that this measure was largely positive and would result in improved air quality, noise levels, access and social contact, increased levels of walking, and reduced volumes of traffic and congestion. To combat a possible negative impact on mental wellbeing, the group recommended the provision of improved timetables.

Councillor Consultation

The group thought that this measure would result in improvements in terms of air quality, noise levels, volume of traffic, access to jobs and services, social contact and community severance. The group suggested that further improvements could include more ticketing and interchange with other forms of public transport. No negative impacts were identified by the group.

MBC EH Consultation

MBC EH thought that this would have a moderate positive impact on air quality, which could be enhanced by an increased uptake of Euro 5 and 6 vehicles and low carbon buses. Moderate positive impacts on the volume of traffic and amount of congestion were identified in addition to further small positive impacts on noise levels, road traffic accidents, levels of walking, mental wellbeing, access to amenities, social contact and community severance. To enhance these positive impacts, the group suggested the provision of newer, quieter and cleaner buses, as well as sensible routing of buses. No negative impacts were identified by the group.

Measure 6: Improvements to public transport

Action 3: Langley Park Farm Park and Ride site has been previously identified by Maidstone Borough Council as a potential replacement for the former Park and Ride operation at Coombe Quarry. Design work will be undertaken to assess the priority for taking this option forward. Additional investigation will continue on other sites, particularly those on the A229 axis north and south of the town.

Stakeholder Consultation
Stakeholders thought that this action would have a large positive impact on traffic volume as it would reduce the amount of cars in the centre. They also thought it would have a medium positive impact on the amount of congestion, air quality and access to jobs, services, facilities and amenities. In addition, they felt that small positive impacts on noise levels, mental well-being and social contact, interaction and cohesion would be experienced. Stakeholders expressed concern that Langley may experience negative impacts from the development of the Langley Park Farm site. The small negative impacts identified included impacts on noise levels, volume of traffic, amount of congestion, mental well-being and community severance. To alleviate some of these issues, effective screening was suggested.

Community Consultation
The community group thought that small positive impacts would result from this measure in terms of air quality, noise levels, volume of traffic and the amount of congestion. They also noted that small negative impacts could result in terms of access and social contact. They commented that the location of the Park and Ride is a very important decision. The group reiterated an earlier recommendation of having multiple stops on bus routes.

Councillor Consultation
Councillors thought that there would be a large positive impact on air quality in the town, but were concerned that air quality in the local area would be negatively impacted. Other identified positive impacts included reduced noise, volume of traffic, amount of congestion and community severance; as well as increased access to jobs and services and social contact, interaction and cohesion. Along with reduced air quality, Councillors were also concerned that noise levels and the amount of congestion could be negatively impacted in the local area.

MBC EH Consultation
MBC EH thought that this would have a moderate positive impact on air quality and the volume of traffic, which could be enhanced by good publicity and a well situated site. To minimise any potentially negative impacts on air quality, the group would like to ensure that the buses adhere to a satisfactory Euro standard. There were concerns that there would be an increase in the volume of traffic and amount of congestion where cars arrive at the Park and Ride. Again, the location of the site as well as its management will be important in minimising these impacts. There could be a moderate positive impact on the levels of cycling and walking should people either cycle or walk to or from the Park and Ride site. Access to jobs, services, facilities and amenities as well as mental well-being could also be improved as a result of this measure. The impact of the measure on community severance was thought to be site dependent.

Measure 6: Improvements to public transport

Action 4: Rail network improvements: Rail improvements are being secured through implementation of the Kent Rail Utilisation Strategy. This includes measures to improve journey times by rail and improve facilities at Kent's stations and access to the stations by all modes; integrating rail travel with the car, bus, walking and cycling. KCC and MBC are working with South Eastern and Network Rail to secure improved rail services in Maidstone.

Stakeholder Consultation
The group thought that this action would have a positive impact most notably on air quality and access to jobs, services, facilities and amenities. They thought that further small positive impacts on the volume of traffic, amount of congestion, level of cycling, level of walking and social contact, interaction and cohesion. They thought that these positive impacts could be enhanced by encouraging the public to use the rail network. Stakeholders expressed concern at the potential increase in noise levels resulting from increased use of trains which they also felt could impact negatively on mental well-being. They also thought that community severance could be worsened by local disruptions. It was noted that the most harmful impacts would be felt locally at the train stations.

Community Consultation
Community members thought that overall this measure was positive and could lead to improved air quality, noise levels, traffic volume, increased levels of walking, and reduced congestion and road traffic accidents. To enhance the positivity of this measure, the group recommended increasing the number of jobs at rail stations.

Councillor Consultation
The group agreed that there would be some positive impacts resulting from this measure in terms of mental well-being, access to jobs and services and social contact; and to a lesser extent, air quality, noise levels, volume of traffic and the amount of congestion. Councillors stressed that if a parkway station was put in place then the overall impact may well be a negative one.

MBC EH Consultation
MBC EH thought that this could have a large positive impact on the levels of walking and cycling; a moderate positive impact on air quality, access to jobs and services and social contact and interaction; and a small positive impact on the volume of traffic, amount of congestion, road traffic accidents and mental well-being. To enhance these positive impacts, the group thought that the improvements should be well planned and publicised.

Measure 31:	Maidstone Borough Council will continue to work with Kent County Council and transport providers to support and promote increased uptake of public transport modes.

Stakeholder Consultation
Stakeholders thought that positive impacts on air quality and social contact, interaction and cohesion would be most notable; with small positive impacts also on noise levels, volume of traffic, amount of congestion, mental well-being, community severance and access to jobs, services, facilities and amenities. They suggested that these positive impacts could be enhanced by using fuel-efficient and quiet public transport and also by encouraging their use by the public. They thought that negative impacts on volume of traffic and amount of congestion could be re-distributed elsewhere. They noted that small negative impacts could also be experienced on air quality and noise levels if older buses are used.

Community Consultation
Community members thought that the implementation of this measure should start with encouragement of Council employees to uptake public transport.

Councillor Consultation
Councillors thought that this measure would have a positive impact in terms of air quality and noise levels, and to a lesser extent on the volume of traffic and the amount of congestion. The group commented that this will only be effective if there are policies in place. They also noted that there is a limit for commercially-led services.

MBC EH Consultation
MBC EH department thought that this could have a small positive impact on air quality, the amount of congestion, levels of cycling and walking, access issues, social contact and community severance. To enhance these positive impacts, the group suggested the following:

- Ensure that MBC is on local transport groups;
- Promote good, clean public transport services;
- Promote pedestrian and cycle routes to public transport stops; and
- Provide adequate cycle storage at bus stops and stations.

The group were concerned that the measure wouldn't be so effective if the public transport was not low-polluting, clean and pleasant, or if there were no cycle paths or access routes to transport stops and stations.

3 Marketing and Education Initiatives to Raise Awareness among the Public

Measure 21:	Maidstone Borough Council will promote the uptake and use of cleaner or alternative fuels where possible.

Stakeholder Consultation
Stakeholders thought that promoting the use of cleaner or alternative fuels would have a small positive impact on air quality and suggested that a performance monitoring programme be implemented. The group thought that the measure would also have a small positive impact on community severance if sufficient promotion is given. People would need to have a good understanding of the different types of fuel available and this could be linked with the Local Authority Emissions Factor Toolkit (EFT).

Community Consultation
Community consultees were concerned that this measure may just be a 'token policy' with no real power.

Councillor Consultation

Councillors thought that this measure would improve air quality and also have small positive impacts in terms of the amount of congestion, levels of walking and cycling and mental well-being. To enhance these positive impacts, the group advised that good publicity will be necessary, for example through public demonstrations. The group expressed concerns that there could be a negative impact on access to jobs and services. To minimise this, infrastructure for the new technology needs to be available.

MBC EH Consultation
MBC EH thought that this could have a small positive impact on air quality, however also thought that a negative impact on air quality could arise if fuels are not chosen carefully. The group would like to ensure that the alternative fuels are beneficial to both carbon and air quality.

Measure 26:	Maidstone Borough Council (MBC) will implement initiatives to educate communities on air pollution issues and ways to minimise impacts on air quality.

Stakeholder Consultation
Stakeholders identified positive impacts most notably on air quality and levels of cycling and walking. Other small positive impacts were considered likely on the volume of traffic, amount of congestion, road traffic accidents, mental well-being and social contact, interaction and cohesion. In order to enhance these positive impacts, the group recommended increasing the funding available for the education of communities. The group thought that the Council should target their efforts by educating easy to reach groups such as school children, NGO's, cycling/walking groups; and also focusing on key polluters such as businesses. The initiatives should be specially designed to improve the messages sent out and increase acceptance by the public. No negative impacts were identified in association with this measure.

Community Consultation
The community group thought that overall this measure was positive and could lead to a small improvement in air quality, volumes of traffic, congestion, access and social contact. They thought the greatest positive impacts would be experienced on the level of cycling and walking, mental wellbeing and community severance. To minimise any potential negative impact on wellbeing, the group thought

that information should be explained as simply as possible and should be produced in formats that are acceptable to different parts of the community.

Councillor Consultation
The group thought that this could help to reduce the number of road traffic accidents, increase the level of walking and improve social contact, interaction and cohesion. The group commented that by itself, education is not enough. There needs to be positive action to make a difference. No negative impacts were identified by the group.

MBC EH Consultation
MBC EH thought that this measure would lead to a small positive impact in terms of air quality, noise levels, the volume of traffic, levels of walking and cycling, mental well-being and social contact. No negative impacts were identified by the group. The group noted that raising the profile of air quality and its links to sustainability will enable more work to be done and help remove obstacles based on public misperceptions.

Measure 27:	MBC will provide the public with relevant air quality information thus enabling commuters to make informed choices about their transport options

Stakeholder Consultation
Stakeholders identified positive impacts most notably on air quality and levels of cycling and walking. Other small positive impacts were considered likely on the volume of traffic, amount of congestion, road traffic accidents, mental well-being and social contact, interaction and cohesion. To enhance the positive impacts of the measure, the stakeholder group suggested focusing on the groups of people most affected and using easily understandable information. A funding/sustained approach should be used to implement this strategy, ensuring its success in the long term. The group commented on a potentially small negative effect on mental well-being if the information is in a difficult to understand form. To combat this, the group reiterates that messages should be factual and easy to understand.

Community Consultation
Overall, the community group thought that this measure was positive and could lead to a mid-level improvement in air quality. A potential small negative impact on mental wellbeing was noted as a result of people worrying about their health. The group would like information on seasonal variability to also be provided by MBC.

Councillor Consultation
Councillors thought that this measure could lead to a small reduction in the volume of traffic as well as small increases in the levels of walking and cycling. No negative impacts were identified by the group.

MBC EH Consultation
MBC EH thought that this measure would lead to a small positive impact in terms of air quality, amount of congestion, levels of walking and cycling, mental well-being, social contact and community severance. No negative impacts were identified by the group.

Measure 28:	MBC will continue to work in partnership with Kent County Council to increase uptake and implementation of School and Workplace Travel Plans, particularly where likely to impact on the Air Quality Management Area.

Stakeholder Consultation
The group identified a large positive impact on air quality and thought that this impact could be enhanced by focusing on organisations, businesses and poor air quality hotspots. The group thought that secondary positive impacts on the volume of traffic, amount of congestion, level of cycling, level of

walking and mental well-being would result from implementation of this measure. Further small positive impacts on road traffic accidents and social contact, interaction and cohesion were identified. For example, social cohesion could be improved through car clubs, car shares, walking clubs and cycling clubs. The group commented on the need for commitment to and monitoring of travel plans to ensure success. No negative impacts were identified in association with this measure.

Community Consultation
Community consultees thought that this measure would be positive, with the most notable positive impacts including improved air quality and reduced traffic volumes and congestion. To improve the level of cycling, the group raised the need for increased cycle storage areas. To increase the level of walking, the use of 'walking buses' was recommended. The group's only negative concern was that of potentially reduced community severance.

Councillor Consultation
The group of Councillors thought that this could have a moderate positive impact on the volume of traffic and amount of congestion; plus additional small positive impacts on air quality, noise levels, road traffic accidents, levels of cycling and walking, mental well-being and social contact, interaction and cohesion. The group would like to see more emphasis placed on travel plans linked to new development. No negative impacts were identified by the group.

MBC EH Consultation
MBC EH thought that this would have a moderately positive impact on air quality and the amount of congestion, as well as small positive impacts on the volume of traffic, levels of cycling and walking, mental well-being and social contact. The group noted that peak flow traffic is a major problem and that this would have considerable benefit to key hotspot junctions.

Measure 36: MBC will promote composting in a bid to reduce pollution from domestic bonfires

Stakeholder Consultation
The group identified a small positive impact on air quality and suggested that the Council target potential polluters such as rural property owners and also work in air quality hotspots to enhance the success of the scheme. The group noted that other measures within the air quality action plan are probably more effective in improving air quality. No negative impacts were identified in association with this measure.

Community Consultation
Community consultees thought that this would result in a large positive improvement to air quality, with additional small positive benefits to mental wellbeing and social contact, interaction and cohesion.

Councillor Consultation
Councillors thought that this measure would have a small positive impact on air quality only. No negative impacts were identified by the group.

MBC EH Consultation

MBC EH group thought that this would have a small positive impact on air quality and mental well-being. No negative impacts were identified by the group.

Measure 37: MBC will continue to monitor a range of air pollutants throughout Maidstone and make the monitoring information freely available to the public in an easily understood form.

Stakeholder Consultation

Stakeholders found this measure to have similar impacts in relation to health as those mentioned in both measure 26 and measure 27. In general, easy to understand, factual information should be targeted at easy to reach groups, poor air quality hotspots and key polluters.

Community Consultation
The community group thought that this measure was a positive one as it will increase public demand for changes in enforcement. The group suggested that the information flow is 'two-way' so that the public is able to provide feedback to the Council on the information received. The group did not identify any negative impacts associated with this measure.

Councillor Consultation
The group did not think that there would be any positive impacts as a result of this measure alone, but that the information could be used to identify measures which could have a positive impact. No negative impacts were identified by the group.

MBC EH Consultation
MBC EH thought that this would only have a small positive impact on mental well-being. No negative impacts were identified by the group. Cross-reference to the comments made for measures 38 and 26.

Measure M38:	MBC will ensure that all air quality monitoring data reported to the public is both accurate and precise by implementing quality control measures.

Community Consultation
Community consultees thought that this measure would only have a small positive impact on social contact, interaction and cohesion. To enhance this, the group recommended encouraging public awareness of the issues. They expressed some concern that questionable data has the ability to damage public support for measures.

Councillor Consultation
If this acts as a catalyst to action, Councillors agreed that this could help to have a small positive impact on air quality, noise levels, volume of traffic, amount of congestion, mental well-being, access to jobs and services, social contact and community severance. No negative impacts were identified by the group.

MBC EH Consultation
MBC EH thought that this could have a small positive impact on mental well-being and social contact, interaction and cohesion. They thought that this would enhance public confidence in MBC's management of air quality within the Borough. They note that this is important to help maintain public support. No negative impacts were identified by the group.

4 Initiatives to Promote Walking and Cycling in Maidstone

Measure 30:	Maidstone Borough Council will encourage their employees to consider the use of bicycles in their daily duties by providing cycle usage mileage.

Stakeholder Consultation
Stakeholders thought that small positive impacts on air quality, noise levels, volume of traffic, mental well-being and the level of cycling would result from this measure. The group were concerned that road traffic accidents could increase and suggested that health and safety risk assessments be developed and training delivered to cyclists. The provision of cycle panniers was suggested as a way to encourage employees to cycle to work.

Community Consultation

Community consultees thought that this would have a positive impact on air quality, noise levels, volume of traffic, amount of congestion, mental wellbeing, and in particular on the level of cycling. The group thought of a number of practical considerations:

- Are you giving employees cycle training?
- Are the bikes roadworthy?
- How much will the Council pay to employees per mile cycled?

The group's main concerns were the potential increase in road traffic accidents and the reduced access to services.

Councillor Consultation
The group thought that this would have a large positive impact on the level of cycling in Maidstone, with additional small positive impacts in terms of air quality, noise levels, volume of traffic, amount of congestion, road traffic accidents, mental well-being, access to jobs and services and social contact. Ensuring that there is adequate cycle storage available could enhance the benefits associated with increased access. To enhance the positive impact on social contact, the group suggested that information exchange is encouraged within the community. Councillors expressed a concern that increased levels of cycling within Maidstone could potentially lead to a decrease in site visits to rural areas. The group advised that advance weather warnings should be provided to help inform staff who are planning to cycle for work. It will be good practice to share information with other organisations.

MBC EH Consultation
MBC EH thought that this could have a small positive impact on air quality, levels of cycling and mental well-being. The group did however think that there could be associated safety issues. To minimise any potential increase in road traffic accidents, the group suggested conducting risk assessments, providing cycle training to cyclists and encouraging the use of cycle helmets.

Measure 29:	Maidstone Borough Council will continue working partnerships with Kent County Council, Sustrans and the Maidstone Cycling Forum to ensure that walking and cycling initiatives are promoted and supported in Maidstone. An updated cycle strategy for the town is to be developed.

Stakeholder Consultation
Stakeholders noted positive impacts on air quality, noise levels, volume of traffic, level of cycling, mental well-being, access to services, social contact and community severance. The group commented on inconsistent cycle lanes such as those on the A20 and expressed a need for independent cycle tracks and joined up tracks.

Community Consultation
Community consultees thought that this measure would have an overall largely positive impact in terms of air quality, noise levels, volume of traffic, levels of cycling and walking, mental wellbeing and social contact, interaction and cohesion. The group raised concerns that this measure could increase the amount of road traffic accidents and noted the need for pedestrians and cyclists to be careful and safe. They also suggested a small negative impact on access to services and jobs due to increased journey times as a result of walking and cycling. The group wanted to ensure that it was not just Maidstone that benefited from the measure. The group wanted to see support given to pedestrians, for example through the provision of pedometers to encourage people to be green and keep fit.

Councillor Consultation
Councillors thought that this measure would have a large positive impact in terms of air quality, levels of cycling and walking and well-being. Although to a lesser extent, they also thought there would be positive impacts in terms of noise levels, volume of traffic, amount of congestion and road traffic

accidents. To enhance these positive impacts, the group noted that clear signage for cyclists will be paramount. The group recommended that medical evidence of improvements is published. Councillors expressed concerns that increased levels of walking and cycling could lead to an increase in road traffic accidents. There is a need to encourage cyclists to be more responsible, for example discouraging cycling on pavements etc. Careful planning of cycling routes is important to try and reduce the negative impacts associated with the measure. To encourage safe cycling, wide cycle routes need to be created. Also, enforcement needs to be put in place to stop vehicles parking on cycle lanes.

MBC EH Consultation
MBC EH thought that this would have a moderate positive impact on the levels of cycling and mental well-being and additional small positive impacts on all of the other factors discussed. Theses impacts could be enhanced through a well designed and implemented strategy. The group thought that there could be a small increase in road traffic accidents and a small decrease in the levels of walking as a result of the measure. These impacts could be minimised, again through a well designed and implemented strategy, as well as good public consultation.

5 Measures to Incorporate Air Quality Controls within the Development Process

Measure M11:	MBC will ensure local air quality is fully integrated into the LDF process and development scenarios are appropriately assessed with respect to the potential impacts on air quality. An air quality Supplementary Planning Document (SPD) is under development.

Community Consultation
The community group thought that this measure would have a large positive impact on air quality, so long as it is taken notice of. The group were unsure of the definition of 'local' used in this context. The group felt that the SPD was long overdue.

Councillor Consultation
Councillors thought that there would be a large positive impact on air quality as a result of this measure, and that this would have a knock on effect with regards to the positive impacts in other areas. The group felt that following implementation, monitoring would be required in order to assess the nature and scale of the impacts. No negative impacts were identified by the group.

MBC EH Consultation
MBC EH thought that this measure would have a large positive impact on air quality; a moderate positive impact on access to jobs and services; and further small positive impacts on noise levels, volume of traffic, amount of congestion, road traffic accidents, levels of cycling and walking, mental well-being, social contact and community severance. To enhance these impacts the group wanted to ensure that policies were in place and that the use of them was enforced. They thought that this would enable and facilitate the consultation process. To minimise any negative impacts on health, the EH department would like to be consulted on specific schemes at the design stage. The distribution of any harmful impacts elsewhere was thought to be dependent on the individual schemes.

Measure M12:	MBC will request S106 contributions for developments likely to have an air quality impact on the town centre AQMA.

Community Consultation
The community consultees were wary that this measure could enable developers to effectively introduce more pollution through payments and reiterated that developers should not be allowed to develop if they have the potential to worsen air quality.

Councillor Consultation
Overall, the group thought that this was a positive measure which would improve all of the variables questioned. They noted that the spread of positive impacts would be dependent on how the contributions were apportioned. The group also stressed that if not administered or co-ordinated correctly, there could be negative impacts as a result of the measure. The group were concerned that this measure could encourage out of town development which could in turn lead to negative impacts associated with social exclusion and community severance.

MBC EH Consultation
MBC EH thought that this could have small positive impacts on air quality, volume of traffic, amount of congestion, levels of cycling and walking, mental well-being, access to jobs and services, social contact and community severance. They thought that it might be difficult to get S106 contributions for air quality specifically, although they thought that this would become easier as the LDF is adopted and the economy improves.

Measure M32:	MBC Environmental Health will comment upon planning applications to ensure that all relevant air quality issues are highlighted and mitigation measures are considered wherever possible.

MBC EH Consultation
MBC EH thought that this would ensure that the Council promotes actions within the Action Plan. The group thought that there would be positive impacts on air quality, the volume of traffic, amount of congestion, levels of cycling and walking, access issues, social contact and community severance. They thought that these impacts could be enhanced through the incorporation of carbon and air quality emissions reduction in policy documents. They noted that a more robust stance in relation to S106 and CIL would facilitate this.

Measure M19:	MBC will encourage the planting of trees which benefit air quality within the borough through the planning process, Maidstone's Green Spaces Strategy and community partnerships.

Community Consultation
Community members thought that this measure would have a large positive impact on air quality and secondary positive impacts on noise levels, mental wellbeing and social cohesion. The group recommended that the type of trees planted should be carefully selected to maximise the potential to improve air quality. Negative aspects of this measure include the cost of the trees themselves and their maintenance. To minimise nuisance elsewhere, effective leaf clearance should be undertaken. The group wanted to ensure that trees do not block CCTV cameras, nor create hazards for road users.

Councillor Consultation
The group thought that this measure would have a moderate positive impact on air quality and mental well-being; plus additional small positive impacts on noise levels and the level of walking. No negative impacts were identified by the group.

MBC EH Consultation
The MBC EH group thought that this would bring about improved air quality, mental well-being and social contact, as well as increased levels of walking and cycling. The group commented that the tree species selected will be an important consideration.

6 Legislative or Enforcement Measures to Reduce Air Pollution

Measure M33:	MBC will permit and regularly inspect industrial premises under the Pollution Prevention and Control regulatory regime.

Community Consultation
Community members thought this measure would have a positive impact on air quality, noise levels and mental wellbeing; although they felt that any benefits would be limited due to the lack of industry within the AQMA. They did not think that there would be any negative impacts, nor any distribution of harmful impacts elsewhere.

Councillor Consultation
Councillors thought that this measure could have a small positive impact on air quality and noise levels.

MBC EH Consultation
MBC EH thought that this could have a small positive impact on air quality and noise levels, and to enhance these impacts the permits can be amended where appropriate. The group also noted that negative impacts could result if the permits are not adequate.

Measure M34:	MBC will enforce statutory nuisance legislation to control smoke, dust, fumes or gas emissions from commercial and domestic premises which are causing a nuisance or are prejudicial to health.

Community Consultation
Community members thought this measure would have a positive impact on air quality, mental wellbeing and social contact, interaction and cohesion. The group noted a requirement to ensure that the enforcement team is fully staffed. They did not think that there would be any negative impacts, nor any distribution of harmful impacts elsewhere.

Councillor Consultation
If improvements accrue, the group of Councillors thought that this measure could have a small positive impact on air quality and noise levels. The group recommended that advice is given to organisations to encourage them to enhance their performance as well as just sticking to the minimum requirements.

MBC EH Consultation
MBC EH thought that this could have a small positive impact on air quality, mental well-being and social contact, interaction and cohesion. No negative impacts were identified by the group.

Measure M35:	MBC will enforce relevant legislation to reduce the burning of commercial and domestic waste.

Community Consultation
Community members thought this measure would have a positive impact on air quality, mental wellbeing and social contact, interaction and cohesion. The group noted a requirement to ensure that the enforcement team is fully staffed. They did not think that there would be any negative impacts, nor any distribution of harmful impacts elsewhere.

Councillor Consultation
The group thought that there would be small positive impacts on air quality, noise levels and mental well-being as a result of this measure. No negative impacts were identified by the group.

MBC EH Consultation
MBC EH thought that this could have a small positive impact on air quality, mental well-being and social contact, interaction and cohesion. No negative impacts were identified by the group.

7 Working in Partnership to Target Air Pollution

Measure M13:	MBC will ensure effective co-ordination between climate change and air quality strategies and action plan measures.

Community Consultation
The community group thought that this measure would bring about some positive impacts on air quality, level of walking, mental wellbeing and social contact. They made clear that they felt that groups should be working together for a common purpose and not in a 'vacuum'.

Councillor Consultation
Overall, the group thought that this was a positive measure which would improve all of the variables questioned, most notably air quality. They commented that public awareness of strategies and actions should be promoted. No negative impacts were identified by the group.

MBC EH Consultation
MBC EH thought that this could have small positive impacts on all of the factors discussed, and that these impacts could be enhanced by ensuring inter-departmental working. Concerns were expressed that some climate change measures seem to contradict air quality measures. They thought that this measure should work to eliminate this.

Measure M14:	MBC will continue its active involvement and support of the Kent and Medway Air Quality Partnership.

Community Consultation
The community consultees thought that this measure would help to improve air quality to some extent and reiterated previous comments that people working together and not in isolation can only be a good thing. The group made a point that increased travel to meetings etc. should be prevented where possible and that people should be mindful of the transport mode used if not possible. The group posed the question: does annual payment of fee to support membership and running of the Kent and Medway Air Quality Partnership benefit the parishes?

Councillor Consultation
The group thought that theoretically this measure could have a positive impact on all of the variables questioned so long as active involvement, sharing of information and problem solving continues. In order to minimise any negative impacts, this measure needs to avoid becoming a "ticking the box" exercise. Good practice needs to be demonstrated and action plans achieved.

MBC EH Consultation
MBC EH commented that partnership assists partnership working and promotion of best practice, as well as identifying problem areas through the monitoring programme. They think that it is essential to be part of it and that the cost of not doing so would be considerable.

Measure M15:	MBC will continue its active involvement and support of the Low Emissions Strategies (LES) Partnership.

Community Consultation
Community members thought that this measure would have a small positive impact on air quality, noise levels and the volume of traffic experienced.

Councillor Consultation
Councillors commented that by itself this measure achieves very little and would be interested to know what the outcomes would be.

MBC EH Consultation
MBC EH thought that this would have a moderate positive impact on air quality; however this would really be dependent on the uptake of individual schemes. They also thought that there could be a small increase in the levels of cycling and walking should individual schemes encourage this. No negative impacts were identified by the group.

Measure M16:	MBC will ensure effective co-ordination of local air quality management with Tonbridge & Malling Borough Council.

Community Consultation
Community consultees were unsure of the detail involved in this measure and therefore did not comment on its impact.

Councillor Consultation
Councillors thought that this measure would have a positive impact on air quality, noise levels, volume of traffic, amount of congestion, access issues, social contact and community severance. The group suggested that Kent City Council should be involved. No negative impacts were identified by the group.

MBC EH Consultation
The MBC EH group thought that this would have a small positive impact on all of the factors discussed, but that this would be dependent on the actions taken. No negative impacts were identified by the group.

Measure M18:	MBC will work in partnership with the PCT to establish Health Baselines in various parts of the AQMA plus other parts of the borough.

Community Consultation
Community consultees thought that this measure would have a large positive impact on the level of walking, mental wellbeing and access to jobs and services, and a mid-level positive impact on the level of cycling. They thought that this measure was a necessary step to improving air quality.

Councillor Consultation
The group thought that this measure would have a small positive impact on mental well-being and social contact, interaction and cohesion. They suggested using the Local Strategic Partnership (LSP) as a driving force for this.

MBC EH Consultation
MBC EH thought that this could have a small positive impact on mental well-being and social contact, interaction and cohesion. They note that whilst baseline setting will not have a direct effect on the parameters listed, it is a vital first step upon which to develop actions in the future. It will also be useful to develop stronger ties links to the PCT for community sustainability measures.

8 Other Initiatives to Improve Air Quality in the Borough

Measure M10: MBC & KCC will seek improvements in Emissions Standards for KCC & MBC Council Fleets and Public Service Vehicles.

Community Consultation
The community group thought this measure was an 'excellent idea' with especially positive impacts on air quality and mental wellbeing. Concerns raised by the group included: the cost of providing improved transport (including raw resources and energy); and what would happen to the discarded cars and buses if replaced.

Councillor Consultation
The group thought that this measure would result in small positive impacts on air quality, noise levels, level of walking, level of cycling and mental well-being. To enhance the positive impacts, the group encouraged making the information publicly available. They did however question the financial implications for the Council.

MBC EH Consultation
MBC EH thought that this measure would have a small positive impact on air quality, noise levels and mental well-being. To enhance these impacts the group suggested aiming for the use of low carbon vehicles. The group also wanted to ensure that fuel types were chosen carefully. Although the group thought that this measure would have a limited effect overall, they thought that it would be good for MBC and KCC in terms of PR and also in fulfilling the requirements of NI 185 and 186.

Measure M17: MBC will investigate potential use of NO_X reducing paving and paints in the AQMA.

Community Consultation
The community group felt that other measures should have a far greater priority than this.

Councillor Consultation
The group thought that this measure would only have a small positive impact on air quality. No negative impacts were identified by the group.

MBC EH Consultation
MBC EH thought that this would have a moderate positive impact on air quality and that this could be enhanced by the careful selection of sites as well as monitoring and analysis of the results. No negative impacts were identified by the group.

Measure M20: MBC and KCC will carry out regular emissions testing of its vehicle fleet to ensure that all vehicles comply with required emissions standards.

Community Consultation
Community consultees thought that this was a 'waste of time' since emissions testing is covered by MOTs and expressed that it would be far more beneficial for MBC and KCC to reduce their car dependency.

Councillor Consultation

The group thought that this measure would only have a small positive impact on air quality and noise levels. No negative impacts were identified by the group.

MBC EH Consultation
MBC EH thought that there would be a small positive impact on air quality. The group commented that this service is carried out as part of an MOT and is unlikely to be carried out independently. They thought that in general, this measure was unlikely to make any difference to the parameters discussed.

Measure M22: MBC and KCC will establish and implement a rolling programme for replacing older more polluting vehicles with newer cleaner vehicles, which comply with the prevailing EURO standard.

Community Consultation
Again, community members felt that it would be far more beneficial for MBC and KCC to reduce their car dependency.

Councillor Consultation
The group thought that this measure would have a moderate positive impact on air quality. No negative impacts were identified by the group.

MBC EH Consultation
MBC EH thought that this could have a small positive impact on air quality and the level of noise. To avoid potentially negative impacts on air quality, the group commented that fuel types should be chosen carefully.

Measure M23: MBC and KCC will improve the Council's vehicle fuel consumption efficiency by better management of fleet activities and consider their activities in relation to hotspots.

MBC EH Consultation
MBC EH thought that overall the impact of this measure would be small, but that it would provide a guide to the community. They noted potential small positive impacts on air quality, the volume of traffic, amount of congestion, road traffic accidents and mental well-being. The group suggested promoting the use of other forms of transport or perhaps providing an entirely low carbon fleet. The group also wanted courses in fuel efficient driving to be promoted.

Measure M24: MBC and KCC will investigate options for better travel planning amongst Council employees.

MBC EH Consultation
The MBC EH group thought that this measure would have a small positive impact on air quality, volume of traffic, amount of congestion, levels of cycling and walking and mental well-being. The group also noted a small negative impact on road traffic accidents which they thought could be minimised through the provision of adequate health and safety training for cyclists. They would like to ensure that risk assessments cover any shifts in transport modes.

Measure M25: MBC and KCC will assess the Council's energy needs and make recommendations to the Council on reduction of carbon emissions.

MBC EH Consultation

MBC EH thought that this would have a small positive impact on air quality, the volume of traffic and amount of congestion. To enhance this, the group would like to ensure that *all* emission gains are estimated (and not just carbon). The group identified a negative impact on air quality should the wrong technology be used. Although the group thought that in general the impact of the measure might be low, it shows MBC and KCC to be promoting best practice.

Measure M39:	MBC will establish additional monitoring sites across the borough in locations where poor air quality is suspected.

Community Consultation

The community group thought that this measure would have a small positive impact on air quality, mental wellbeing and social cohesion, however were concerned at the cost of its implementation. They thought despite it being costly to establish new monitoring sites, it is a necessary task and that this should go ahead.

Councillor Consultation

Councillors thought that this measure would have a small positive impact on air quality only. The group noted the importance of establishing clear information as a base for making decisions. No negative impacts were identified by the group.

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Maidstone Town Air Quality Action Plan 2010

CONTENTS

Executive Summary

Maidstone Borough Council has a statutory duty to periodically review air quality within their area – a process known as Local Air Quality Management (LAQM). This process involves the assessment of both current, monitored air quality levels and future predicted air quality levels. To date, LAQM has identified the main source of air pollution in the borough is attributable to road traffic emissions due to traffic flows and congestion on key areas within the local road network, notably the M2, M20, A20, A229, A249, A26 and A274. Five confirmed hotspot areas have been identified as exceeding the NO_2 annual mean objective for NO_2 involving some major roads, a street canyon and various junctions.

To address the issues related to these five confirmed areas of exceedence an Air Quality management Area (AQMA) was declared in August 2008 and this Air Quality Action Plan (AQAP) has been written in order to identify measures and actions required to manage air quality within the AQMA and specifically the hotspot areas.

In order to reduce pollutant levels below the Air Quality Objective levels required by European legislation this AQAP (based on data from the Further Assessment) has estimated the reduction of pollutant required to meet the AQO for the five confirmed hotspots:

1) The Town Centre area, including the High street and Upper Stone Street (a street canyon) requires a 41-88% reduction in NO_2 concentrations across the whole area.
2) The Loose road/ Sutton Road junction requires a 51% reduction in NO_2 concentrations
3) The Tonbridge Road and Fountain Lane junction requires a 4.8% reduction in NO_2 concentrations
4) The Well road/Boxley road Junction has recently fallen 1% below the exceedence level, but any small changes in traffic flows in the area would re-instate its AQO failure.
5) M20 J6-7 junction requires an 8.8% reduction in NO_2 concentrations,

The Further Assessment report, which provides the technical backup for the measures to be included within the Action Plan, identified two further potential exceedences of the annual NO_2 mean. There are measures in place within the Action Plan to address both these areas while monitoring is being undertaken to confirm the suspected exceedences. The monitoring data will be reported through the LAQM process. The two sites under investigation include:

1) A229 Chatham Road where data to date suggest that a 25% reduction in NO_2 concentrations is required to achieve the AQO.
2) Wildfell Close, Walderslade (adj M2) data monitoring ongoing.

The Further Assessment also identified two potential exceedences of the hourly annual NO_2 mean and these are also under investigation through the LAQM process. Within the AQAP measure 8 has been developed specifically to address the issue potential hourly AQO exceedences whilst the investigations are ongoing.

The two sites under investigation for exceedence of the hourly objective are:

1) Upper Stone Street
2) The Loose road/Sutton road (Wheatsheaf) Junction.

The Maidstone Air Quality Action Plan (AQAP) sets out a series of measures which target both confirmed hotspot areas and areas currently under investigation in order to reduce NO_2 emissions by the required amount. The AQAP sets out which external partners (stakeholders) are involved in the delivery of each measure and provides indicators for assessing progress in

achieving the Air Quality Objectives and reporting progress annually (to both Defra and internally). As well as setting out measures specific to the AQMA, the AQAP also sets out measures for Borough wide air pollutant emissions reductions in line with the Council's sustainability aims outlined in the Sustainable Communities Strategy and in support of the Council's carbon emissions reduction targets.

This Action Plan has been written with the support of the Maidstone Air Quality and Transport Steering group, many of whom are key stakeholders and partners who will enable us to deliver this challenging programme of measures.

1. Introduction and Aims of the Action Plan

1.1 Description of the Local Authority Area

Maidstone is the county town of Kent, and is home to 145,400[1] people in 2008, and its population is due to increase to 167,700[2] by 2026, with the addition of around 11,080 homes to be provided between the planning period 2006 to 2026. The Borough is home to 8.8 per cent of the Kent and Medway population (2001 Census) and borders Swale, Ashford, Tunbridge Wells, Tonbridge and Malling Boroughs and Medway Unitary Authority.

The Borough of Maidstone covers 40,000 hectares located at the heart of Kent. It includes the large urban area of Maidstone and a variety of rural settlements. Its countryside, set within 'the Garden of England', is of a high landscape quality and includes the Kent Downs Area of Outstanding Natural Beauty.

The main source of air pollution in the borough is road traffic emissions from major roads, notably the M2, M20, A20, A229, A249, A26 and A274. An Air Quality Management Area (AQMA) has been declared in August 2008 which incorporates the whole Maidstone urban area and M20 corridor where exceedences of the annual mean objective for nitrogen dioxide (NO_2) and 24-hour mean objective for fine particulates (PM_{10}) were predicted. Maidstone is subject to significant to in and out commuting, as well as an influx of school children, shoppers and tourists and suffers from significant congestion, especially on the approach roads to the town centre at peak hours. Other pollution sources, including commercial, industrial and domestic sources, also make a contribution to background pollution concentrations.

1.2 Legislative Background

Part IV of the Environment Act 1995 places a statutory duty on local authorities to periodically review and assess the current and the future air quality within their area – a process known as Local Air Quality Management (LAQM). The air quality objectives that apply to LAQM are defined in Air Quality Regulations 2000[3] and Air Quality (England) (Amendment) Regulations 2002[4] for seven pollutants benzene, 1,3-butadiene, carbon monoxide, lead, nitrogen dioxide, sulphur dioxide, particulates - PM_{10}.

This Action Plan focuses on those pollutants included in Air Quality Regulations for the purpose of Local Air Quality Management, in respect of the key identified pollutant sources affecting air quality within the Council's administrative area – namely nitrogen dioxide and fine particles (PM_{10}). The objectives set out in the AQS for these pollutants are presented in the table below.

[1] Mid Year Population Estimates for 2008, Office of the National Statistics.

[2] https://shareweb.kent.gov.uk/Documents/facts-and-figures/sep-forecasts-sep-09-web.pdf

[3] The Air Quality (England) Regulations 2000 (Statutory Instrument 928)

[4] The Air Quality (England) (Amendments) Regulations 2000 (Statutory Instrument 3043)

Table 1.1 – Air Quality Objectives included in the Air Quality Regulations for the purpose of Local Air Quality Management in England

Pollutant	Objective	Concentration measured as	Date to be achieved by and maintained thereafter
Benzene All authorities	16.25 µg/m^3	running annual mean	31.12.2003
Authorities in England and Wales only	5.00 µg/m^3	annual mean	31.12.2010
1,3 Butadiene All authorities	2.25 µg/m^3	running annual mean	31.12.2003
Carbon monoxide Authorities in England, Wales and Northern Ireland only	10.0 µg/m^3	maximum daily running 8-hour mean	31.12.2003
Lead All authorities	0.5 µg/m^3	annual mean	31.12.2004
	0.25 µg/m^3	annual mean	31.12.2008
Nitrogen dioxide [a] All authorities	200 µg/m^3, not to be exceeded more than 18 times a year	hourly mean	31.12.2005
	40 µg/m^3	annual mean	31.12.2005
Particles (PM_{10}) (gravimetric) [b] All authorities	50 µg/m^3, not to be exceeded more than 35 times a year	24 hour mean	31.12.2004
	40 µg/m^3	annual mean	31.12.2004
	18 µg/m^3	annual mean	31.12.2010
Sulphur dioxide All authorities	350 µg/m^3 not to be exceeded more than 24 times a year	1 hour mean	31.12.2004
	125 µg/m^3 not to be exceeded more than 3 times a year	24 hour mean	31.12.2004
	266 µg/m^3 not to be exceeded more than 35 times a year	15 minute mean	31.12.2005

a EU Limit values in respect of nitrogen dioxide to be achieved by 1st January 2010. There are, in addition, separate EU limit values for carbon monoxide, sulphur dioxide, lead and PM10, to be achieved by 2005, and benzene by 2010.
b Measured using the European gravimetric transfer sampler or equivalent.

Where the results of the review and assessment process highlight that problems in the attainment of health-based objectives for air quality will arise, the authority is required to declare an Air Quality Management Area (AQMA) – a geographic area defined by high levels of pollution and exceedences of AQS objectives. Section 84 of the Environment Act 1995 imposes duties on a local authority with respect to AQMAs. The local authority must carry out a further assessment and draw up an action plan specifying the measures to be implemented within the AQMA, and the time-scale for doing so, to move towards attainment of the air quality standards and objectives.

1.3 Scope of the Action Plan

Where local authorities have designated AQMAs, they have a duty to produce an Action Plan. This plan must set out what measures the authority intends to introduce in pursuit of the AQS objectives. The principal aim of the Air Quality Action Plan is to minimise the effects of air pollution on human health within the local authority area using all reasonable measures, within reasonable timeframes and by working towards achieving the AQS objectives and standards. In order to comply with the AQS objectives it may be necessary to include measures beyond

the boundaries of the air quality management areas. Some of the measures may also benefit areas not included within AQMAs thereby improving the health of the population in those areas.

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 may be targeted appropriately.

An air quality Action Plan must include the following[5]:

- quantification of the source contributions to the predicted exceedences of the relevant objectives; this will allow the Action Plan measures to be effectively targeted;
- evidence that all available options have been considered;
- how the local authority will use its powers and also work in conjunction with other organisations in pursuit of the air quality objectives;
- clear timescales in which the authority and other organisations and agencies propose to implement the measures within its plan;
- where possible, quantification of the expected impacts of the proposed measures and an indication as to whether the measures will be sufficient to meet the air quality objectives. Where feasible, data on emissions could be included as well as data on concentrations where possible; and
- how the local authority intends to monitor and evaluate the effectiveness of the plan.

Maidstone Borough Council has responsibility under Section 84 of the Environment Act 1995 to prepare and submit an Action Plan to the Department for Environment, Food and Rural Affairs (Defra). The Environment Act 1995 does not prescribe any timescale for preparing an Action Plan. However, the Government expect them to be completed between 12-18 months following the designation of any air quality management areas. The prime responsibility for preparing and submitting the Action Plan rests with district councils. However, there is a requirement on other relevant authorities to identify proposals in pursuit of the AQS objectives within their respective responsibilities and functions.

This draft Action Plan has been developed, in partnership with other relevant bodies, particularly Kent County Council and the Highways Agency, to incorporate the localised measures at the AQMA. The completed action plan will be circulated to all relevant authorities and strategic partners and to the members of the public.

[5] Policy Guidance LAQM.PG(09) (2009), Part IV of the Environment Act 1995, Local Air Quality Management, Published by Defra in partnership with the Scottish Government, Welsh Assembly Government and Department of the Environment Northern Ireland, The Stationery Office

2 Overview of Air Quality in Maidstone

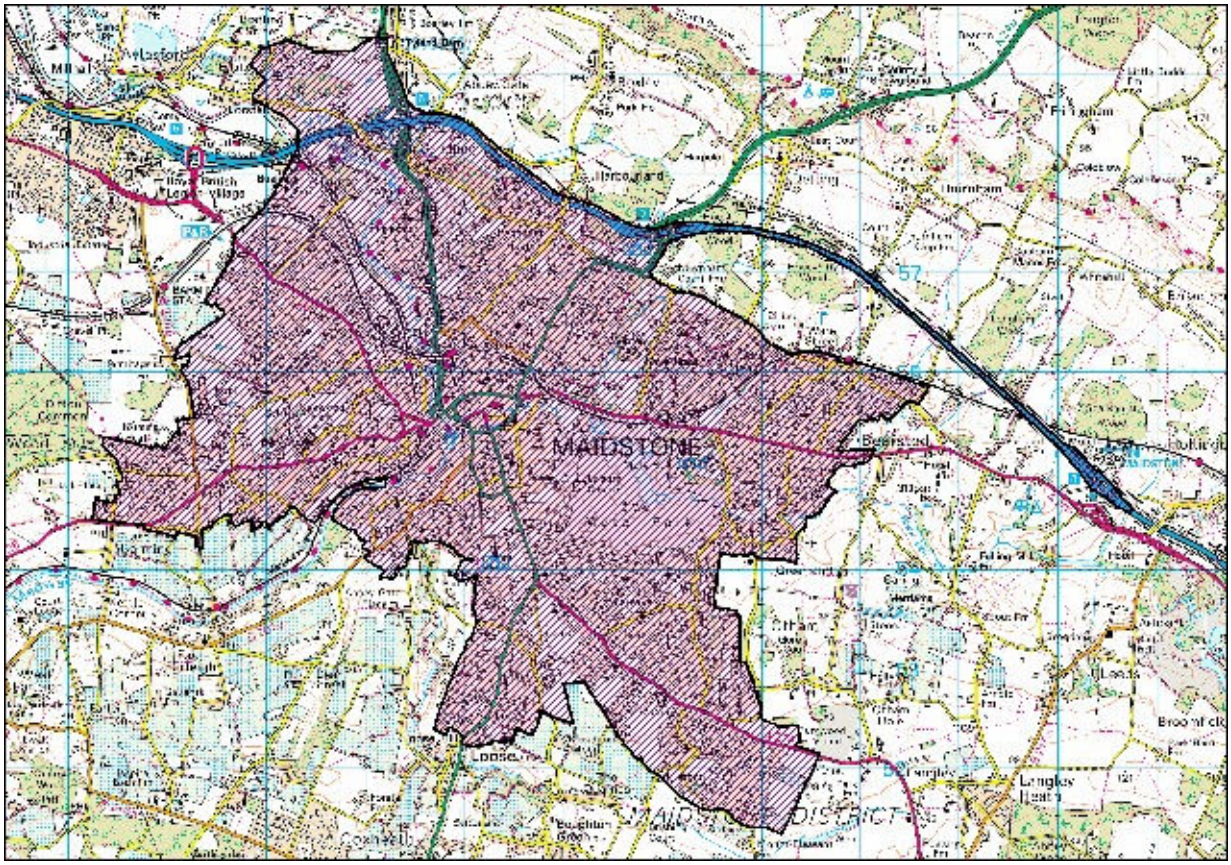
2.1 Local Air Quality Management – Review and Assessment

Between 1998 and 2001, Maidstone Borough Council undertook its first round of review and assessment of air quality. The conclusions of the first round were that it was necessary to declare an Air Quality Management Area (AQMA) based on exceedences of the nitrogen dioxide (NO_2) annual mean objective due to road traffic emissions on the M20. An AQMA was subsequently declared along the M20 corridor between Junctions 6 and 7.

The first phase of the second round of review and assessment of air quality, the Updating and Screening Assessment (USA), was completed in July 2003 and this provided an update with respect to air quality issues within Maidstone. The USA concluded that a detailed assessment was required for NO_2 and particulates (PM_{10}) due to emissions from road traffic in Maidstone town centre. The detailed assessment confirmed the conclusions of the USA, and Maidstone town centre was declared an AQMA in January 2005.

The third round of review and assessment, following the same stages as the second round, began with an Updating and Screening Assessment. Maidstone Borough Council completed this in June 2006, with the conclusion that a detailed assessment was required for NO_2 at the Fountain/ Tonbridge Road junction and on Well Road, and for NO_2 and PM_{10} at the junction of Loose Road and Sutton Road. The report recommended that the Council consider declaring Air Quality Management Areas at the Fountain Lane/Tonbridge Road junction, the Well Road/Boxley Road junction and at the Loose Road/Sutton Road junction based on the potential exceedences. Following extensive consultation, Maidstone Borough Council decided to declare an urban-wide AQMA. The current M20 AQMA has been revoked and the Town Centre AQMA has been amended to include the M20 AQMA and the whole Maidstone urban conurbation. The amended AQMA was declared in July 2008, the Further Assessment was submitted to Defra for review (November 2009) although some scenario modelling remains outstanding and the Air Quality Action Planning process is underway.

Figure 2.1 – Maidstone Town AQMA



2.2 Monitoring data

There is currently automatic monitoring of nitrogen dioxide (NO_2) and particulates (PM_{10}) undertaken by the Council at one location in the AQMA, Maidstone Roadside (Bridge Gyratory, Fairmeadow) in Maidstone town centre. This site continues to measure exceedences of the NO_2 annual mean objective. All other objectives are currently met.

Table 2.1: Maidstone Roadside continuous analyser concentrations (µg/m^3) in 2006 - 2008

Location	Within AQMA?	Description	2006	2007	2008
Maidstone Bridge Gyratory A229 Roadside	Yes	Annual Mean NO_2 > 40 µgm^3	**51**	**51**	**44**
		NO_2 Hourly Mean > 200 µgm^3 for more than 18 times per year	0	6	0
		% Data Capture	98	99	99
		Annual Mean PM_{10} > 40 µgm^3	33	31	24 (28)
		Number of Exceedences of the 24-hour mean (50 µg/m^3); 35 permitted.	25	27	12 (13)
		% Data Capture	99	99	99

There are additionally 41 diffusion tube sites in the AQMA; 13 of which were exceeding in 2008.

Table 2.2 - Diffusion Tube Results in Maidstone AQMA

Site ID	Location	Data Capture 2008 %	Annual mean concentrations (µg/m^3) adjusted for bias		
			2006 (Bias factor: 0.97)	2007 (Bias factor: 0.92)	2008 (Bias factor: 0.79)
Maid 01	High Street (Signpost near Argos)	100	**51**	**50**	**42**
Maid 03/04/05	Bridge Gyratory (Fairmeadow AQ Station)	100	**49**	**51**	**44**
Maid 10	Grange Lane South (Telegraph pole by Yew Tree PH)	83	37	**44**	35
Maid 11	Boarley Lane (Telegraph pole near letterbox)	83	39	36	30
Maid 12	Grange Lane North (Opposite Cookes's cottage)	33*	32	33	24
Maid 14	Boxley Close (lamp post by nos.38 &40)	100	39	**40**	32
Maid 15	Claremont Road (façade)	100	32	32	25
Maid 17	A20 Ashford Road (façade No. 12)	100	30	33	23
Maid 18	Bell Meadow (sign opposite no.10)	75	29	33	23
Maid 19	196 Loose Road (o/s no.196)	50*	31	34	25
Maid 20	Sheals Crescent (on blue lampost)	92	39	37	29
Maid 21	Tonbridge Road (signpost Walnut Tree PH)	100	40	**48**	33
Maid 22	A20 London Road (40mph sign by traffic lights)	83	35	35	31
Maid 23	Park & Ride	75	**41**	38	35
Maid 24	Brookbank (outside No. 10)	58*	28	33	24
Maid 25	10 Mote Road (Lamppost)	83	**46**	**55**	**43**
Maid 26	Drakes PH (Lamppost)	83	**41**	**41**	34
Maid 27	High Street (Lamppost by JPs Bar)	92	**47**	**47**	40
Maid 29	Knightrider Street	100	**42**	**44**	35
Maid 32	The Pilot Upper Stone Street (3m)	67*	**115**	**109**	**79**
Maid 33	The Pilot Upper Stone Street (1.5m)	92	**102**	**109**	**96**
Maid 34	Walters Upper Stone Street	50*	**50**	**56**	**57**
Maid 36	37 High Street	75	**49**	**50**	**42**
Maid 41	Amberleigh, Boxley Road	92	**48**	**47**	40
Maid 43	Well Road (Road sign by prison wall)	92	**52**	**55**	**47**
Maid 44	Well Road (facade between No.3 & 4)	100	**47**	**55**	40
Maid 45	Mote Park	50*	26	20	21
Maid 46	Scrubbs Lane (Oakwood Park)	92	20	17	17
Maid 47	Wheatsheaf PH, Loose Road/Sutton Road junction	75	**67**	**61**	**54**
Maid 48	Fountain Lane (Sears)	92	38	37	34
Maid 49	454 Tonbridge Road (façade)	92	**44**	**45**	39
Maid 50	157 Chatham Road Springfield	100	27	33	26
Maid 51	121 Boxley Road	92	**49**	**52**	**44**
Maid 52	565 & 567 Tonbridge Road	100	39	**47**	40
Maid 53	Wheatsheaf PH, Loose Road/Sutton Road junction	58*	**81**	**76**	**64**
Maid 54	42 Hildenborough Crescent	100	-	33	25
Maid 56	243 Loose Road	100	-	35	26
Maid 57	29A Forstal Road Cottages Forstal Road	83	-	**77**	**59**
Maid 58	Down Pipe on R & J Carpets Upper Stone Street	17*	-	**-**	**88**
Maid 59	Down Pipe on Harts Upper Stone Street	8*	-	-	31

*Less than 9 months data capture. Annualisation undertaken using five background sites in the Kent & Medway air quality monitoring network (Canterbury, Rochester Stoke, Thanet Airport, Tunbridge Wells Town Centre, Swale Sheerness).

2.3 Source Apportionment

The source apportionment work carried out in the Further Assessment 2009 at eight worst-case receptor locations provided the following results.

The source apportionment of NO_2 is estimated through monitoring and modelling the sum of NO_2 and NO which is termed NO_x. This is done because NO_2 cannot be measured directly. Source apportionment of NO_X, indicates road traffic emissions of NO_X are the main contribution to total NO_X concentrations, as they account for 69 - 91% of the total NO_X concentrations at receptors. Heavy-duty vehicles (HDV's include heavy goods vehicles, coaches and buses), contribute around 30 - 57% to the total NO_X concentrations at receptors. HDV contributions are disproportionably high given their proportion within the vehicle fleet in the AQMA based on real time traffic monitoring data. Background concentrations account for 9% to 31% of the total NO_x concentration at receptors, with 4 - 14% due to regional background concentrations outside the local authority's influence.

Source apportionment of PM_{10}, indicates background sources of PM_{10} make a significant contribution to total PM_{10} concentrations, as they account for 67-90% of the total PM_{10} concentrations at receptors, with the majority of this being made up of secondary particulates, residual and salt contributions. Local sources (non-background), like road traffic, contributes 10% to 33% of the total PM_{10} concentration at receptors. Light duty vehicles (LDVs include vans, cars and motorbikes) contribute around 3 – 12% and heavy-duty vehicles (HDVs) contribute around 2 - 12% to the total PM_{10} concentrations at receptors. HDV contributions are disproportionably high given their proportion within the vehicle fleet in the AQMA. Brake and tyre wear contribute around 4 - 10% to the total PM_{10} concentrations at receptors. This proportion will become more significant with time, as the brake and tyre wear component is not expected to decrease its contribution with time, whereas vehicle exhaust emissions of PM_{10} are expected to reduce.

The highest concentrations of NO_X were predicted at properties along Upper Stone Street in Maidstone town centre. The highest concentration of PM_{10} were predicted at properties at Harbourland Close near the M20 at Boxley; closely followed by properties along Upper Stone Street.

Figure 2.2 – Contribution of pollutant sources to annual mean NO_x concentration in the AQMA

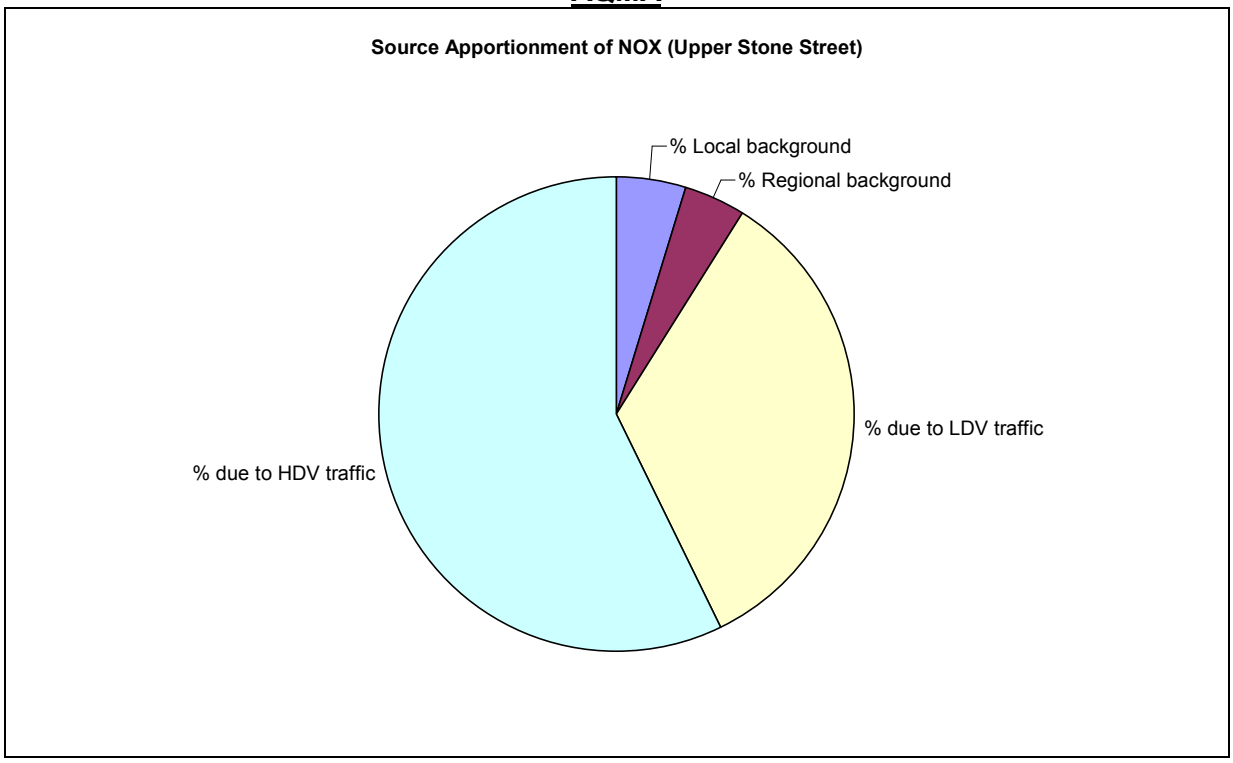
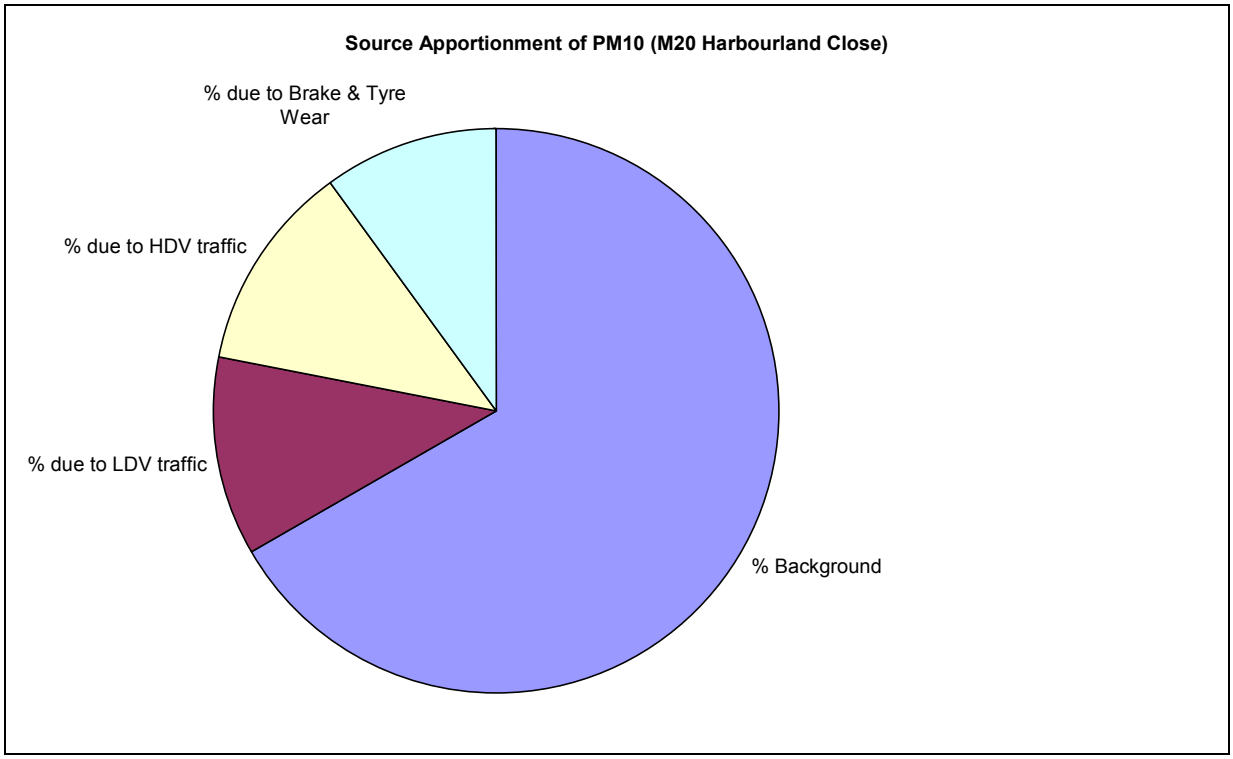


Figure 2.3 – Contribution of pollutant sources to annual mean PM_{10} concentration in the AQMA



2.4 Required Reductions in NO_2 and PM_{10}

In order to make a decision on the best options to employ, it is first necessary to calculate the exact reduction of NO_2 reduction (as NO_x) and PM_{10} reduction that would be required in order to meet the AQS objectives. This approach (LAQM TG09) highlights the maximum reduction in NO_2 (as NO_x) and PM_{10} required and assumes that all other specific receptors will require less of a reduction.

The reduction in NO_2 (as NO_x) was calculated in the Further Assessment 2009 from the receptor point of maximum NO_2 concentration measured along Upper Stone Street, for the year 2008. The maximum predicted NO_x reduction required within the Maidstone AQMA to comply with the NO_2 AQS objective is 202µg/m^3 (equivalent to a 242% improvement in NO_x). This equates to a 35.5µg/m^3 reduction in NO_2 (equivalent to 89% improvement in NO_2). This is at the worst-case location in the AQMA along Upper Stone Street. The required reductions vary across the AQMA, as shown in Table 2.3, and are generally well below the levels in Upper Stone Street.

Table 2.3 – Required NO_X/NO_2 Reduction in Maidstone AQMA

Receptor Location	Modelled NO_x (µg/m^3)	Reduction NO_x required µg/m^3 (83.7 µg/m^3 NO_x equivalent to achieve objective)	% Reduction NO_X	Modelled NO_2 (µg/m^3)	Reduction NO_2 required (µg/m^3) to achieve objective (40µg/m^3)	% Reduction NO_2
M20 – Greenfields Harbourland Close	96.9	13.2	15.8	43.5	3.5	8.8
Forstal Road – B&B	101.8	18.1	21.6	44.7	4.7	11.8
Well Road – 2 Boxley Road	82.2	-1.5	-1.8	39.6	-0.4	-1.0
Tonbridge Road/Fountain Road - 577 Tonbridge Rd	90.6	6.9	8.2	41.9	1.9	4.8
54 High Street	164.8	81.1	96.9	57.3	17.3	43.3
29 Upper Stone Street	286.1	202.4	241.8	75.5	35.5	88.8
Loose Road/Sutton Road - Wheatsheaf PH	183.7	100.0	119.5	60.4	20.4	51.0
A229 Chatham Road – 5 Grey Wethers	126.6	42.9	51.3	50.1	10.1	25.3

There were no predicted exceedences of the PM_{10} objectives in the AQMA at the receptors modelled and therefore there was no required reduction to achieve the objective. Particulates are non-threshold pollutants and as such general measures to reduce particulate levels are beneficial. However, the findings of the Further Assessment enables Maidstone Borough Council to focus their attention on NO_x which has now been confirmed as being the only air pollutant to not meet the AQO.

3 Local and Regional Policies and Strategies:

Government planning proposals and revocation of the Regional Strategy

Since writing the draft of this document (April 2010), the new Government has signalled its intention to radically change the planning system6. The details of the new system are as yet unclear but on 6 July 2010 the Secretary of State revoked the Regional Strategies (including the South East Regional Strategy) and the Government's Chief Planner issued advice on some of the immediate issues that arise from this announcement. Part of that advice states that Local Planning Authorities (LPAs) "should continue to develop LDF Core Strategies...reflecting local peoples aspirations and decisions on important issues..., and furthermore, that where Development Plan Documents are being prepared, LPAs may decide to review or revise their emerging policies in the light of the revocation, whilst ensuring that the requirements for soundness and other policy requirements under current legislation are met.

This is requiring the Borough Council to review its emerging Core Strategy in particular its housing and employment targets, together with its strategy for distributing development and the emerging transport strategy. As part of the Government's new localism agenda, a sound evidence base is crucial but also very important are the views of residents and businesses.

This all has implications for the preparation of related strategies and action plans, including the Air Quality Action Plan. While the key issues and challenges and responses are likely to remain broadly similar for the AQAP, the detail will be subject to change. For this reason, the AQAP policy section will remain under review until the Government's planning proposals and the emerging Core Strategy direction becomes clearer.

A description of key policies can be found below, including the revoked or soon to be superseded policies which retained for information purposes.

3.1 Maidstone Local Development Framework

The Maidstone Borough-Wide Local Plan was adopted in December 2000. As from 28 September 2007, only some of the policies in the Local Plan continue to form part of the development plan and are used in the determination of planning applications. Such policies are called 'saved' policies. This is part of the process whereby new local development framework documents will delete or replace adopted local plan policies. Planning Policy ENV1 with respect to control of pollution (air, land and water) was not saved. National and regional policies[7] more than adequately cover the same matters contained within ENV1. It is expected that the LDF will provide greater detail on how these national and regional policies relate to local circumstances.

The LDF comprises a number of documents[8] which will be produced over time and includes a Core Strategy. All other documents that comprise the LDF must be in conformity with the Core Strategy. The LDS milestone for the Core Strategy to be adopted is December 2011. Other Development Plan Documents will follow as outlined in the LDS.

Maidstone Local Development Framework, Core Strategy - Emerging Direction

[6] Coalition Government Manifesto, and Open Source Planning and Control Shift – Conservative Green Papers

[7] Planning Policy Statement 1 Planning and Climate Change; PPS 22 Renewable Energy; PPS 23 Planning and Pollution Control; South East Plan

[8] The general content, milestones (including adoption milestones) of the local development documents are set out in the Local Development Scheme. Refer to Maidstone Local Development Scheme, September 2009. http://www.maidstone.gov.uk/pdf/LDS%20Combined.pdf

The Core Strategy will set out the spatial strategy to sustainably manage growth. In general terms, it will set out how, where and when development will take place in Maidstone Borough over a 20 year period (2006-2026).

The Core Strategy will also address the need to improve air quality in the AQMA, including the town centre, key road junctions and the M20; the need to reduce greenhouse gas emissions to meet Government's targets; the need to increase the renewable energy capacity in the Borough; and adapt to climate change. Key measures being considered include sustainable construction and design standards; renewable energy targets; sustainable transport and travel initiatives, standards and infrastructure; water conservation and efficiency measures. Maidstone's Core Strategy is expected to play a key role in encouraging spatial development which leads to sustainable transport patterns in the Borough. Green and Blue Infrastructure is also expected to form a central part of the strategy, which will also have air quality benefits. National policy and best practice emphasises that developments in and around urban areas, including greenfield developments should be well designed and consistent with the principles of urban renaissance and sustainable development.

The Core Strategy will outline the policy framework to enable the preparation of the Town Centre Regeneration Area Action Plan to provide a policy framework and implementation plan for the revival of defined areas. This will play an important role in identifying the capacity for development and regeneration of Maidstone as the County town and a key transport hub prior to, and balanced with, appropriate edge of town greenfield development.

Whilst the priority is to develop existing brownfield sites in Maidstone town in the first instance, the Council has found[9] that not all future development in the Borough can reasonably be accommodated within the existing built up area of the Borough's towns and villages and it will be necessary to bring forward development on greenfield sites.

At the date of writing, Council members are reconsidering the housing target figure and consequential effects on spatial distribution in the light of the revocation of the Regional Strategy.

The Core Strategy is also expected to reflect the spatial implications of the Maidstone Economic Development Strategy (EDS). However, this is subject to the housing target decision. The EDS sets a target of 10,000 additional jobs to be created within Maidstone Borough and identifies priority sectors for development, including the 'knowledge economy'. Increasing economic growth and accommodating development will place additional pressure on existing infrastructure and generate the need for new infrastructure, and consequentially impact on air quality. Sustainable provision of infrastructure, in particular transport infrastructure is recognised in the EDS and action plan as a key element in the delivery of the objectives of the EDS.

The Core Strategy is currently being prepared with further consultation scheduled during the first half of 2011 with adoption by December 2011. The Maidstone Hub transport package is presently being formulated and the Maidstone Integrated Transport Strategy is being revised in conjunction with the preparation of the Core Strategy. Air quality will be a key consideration, particularly as it relates to transport and travel and infrastructure. The Sustainability Appraisal (SA) process will be followed to ensure all issues and potential

[9] The Government now promotes the use of a Strategic Housing Land Availability Assessment (SHLAA) as a key part of a robust evidence base for the LDF. The Maidstone SHLAA assessed the likely level of housing that could be provided through unimplemented planning permissions and areas of land (including previously developed and greenfield sites) that have development potential for housing. The SHLAA is not a policy making document, but is an important tool in revealing the capacity of the Borough to accommodate the necessary housing growth.

impacts are appropriately assessed. The Maidstone SA Scoping Report, November 2009[10] prepared by Scott Wilson outlines the process and range of issues to be considered.

An Air Quality SPD has been programmed for preparation in the LDS following the adoption of the Core Strategy. It will guide the management of Air Quality in the planning process and aims to maximise the benefits of the AQMA declaration.

3.2 Local Transport Plan for Kent (2006 – 2011) *to be replaced by the LTP III.(out for consultation Oct 2010)*

In 1998, the Government published a Transport White Paper "A New Deal for Transport" which outlined their commitment to a more integrated and sustainable transport system with greater emphasis on alternative forms of transport to the private car. The Government also introduced a system of Local Transport Plans (LTPs) which each highway authority had to prepare every five years which would outline their aims to improve local transport and the funding they required to do this. In the second round of LTPs 2006-11, the Government outlined four shared priorities for local transport, one of which was air quality and required LTPs to consider improvements to the transport network which would reduce air pollution in all declared Air Quality Management Areas.

The Local Transport Plan for Kent 2006-11[11], which was submitted in March 2006, aims to "stabilise and, where possible, reverse the adverse effect of transport and its infrastructure on the natural and built environment and on local communities". Specifically, the LTP contains an air quality policy EHC1 "to seek a reduction in traffic pollution on the local road network".

Since Kent lacks one large urban area with a population above 250,000, KCC is not currently required to set an LTP target for reducing congestion, but congestion and its impact on Kent's economy and communities is a priority for KCC. Maidstone has been highlighted as one of the urban areas which suffer from serious congestion. Located close to the County's motorway and trunk road network Maidstone has good links to the rest of the UK and to the coast via the M20. However, localised traffic congestion and poor journey time reliability is increasingly common on many local roads. A "Congestion Plan" is being prepared for Maidstone, which will summarise the key issues relating to congestion and inform future work.

Implementation of Maidstone's Hub Transport package will help alleviate local congestion. Urban Traffic Management and Control (UTMC) for Maidstone is already established and will be developed further to manage local traffic more effectively and provide better journey time information for all road users. Achieving a more sustainable modal share is also seen as an effective way of alleviating local congestion problems. The investment programmes outlined for the Channel Corridor area, which includes Maidstone, will continue to support public transport services and provide improvements to local walking and cycling networks. Investment in local bus infrastructure will benefit local services and for Park and Ride routes, enhance the accessibility of the town centre, and contribute to the continuing success of the local Quality Bus Partnership (QBP). Bus user satisfaction will also be addressed by providing new and improved infrastructure such as new interchanges.

There is also consideration in the Plan to the Major Scheme development of the South East Maidstone Strategic Route, linking the A274 with the A20 roundabout adjacent to M20 Junction 8. Relevant proposed LTP schemes likely to have direct and indirect impacts on local air quality within the AQMA are referred to where relevant within this Action Plan.

[10] http://www.maidstone.gov.uk/PDF/Maidstone%20SA%20Scoping%20Report%20Final%20Nov%202009.pdf

[11] http://www.kent.gov.uk/static/local-transport-plan/

3.3 Draft Local Transport Plan for Kent (2011-16)

A draft Local Transport Plan for Kent 2011-16 (LTP III) has been prepared and is currently out for consultation. It sets out the county council's strategy for the management and improvement of the local transport network. Initial consultation closes at the end of December 2010.

The guidance on local transport plans emphasises the links between climate change and air quality saying that "it is important that LTPs are effectively co-ordinated with air quality, climate change and public health priorities – measures to achieve these goals are often complementary". For example it also states that "with the transport sector representing 21% of total UK domestic greenhouse gas emission, action to move towards a low carbon transport system will be a key component in meeting our obligations under carbon budgets", which will be of benefit to air quality as well.

The key goals which will support reduction in air quality emissions are:

> **Contribute to better safety, security and health** – reduce social and economic costs of transport to public health, including air quality impacts in line with the UK's European obligations.
>
> **Reduce Carbon Emissions** – deliver quantified reductions in greenhouse gas emissions consistent with the Climate Change Bill and EU targets

The Local Transport Plan for Kent 2011-16will be key to the production of the transport elements in the core strategy and will supplement the guidance found in PPS1 with regards to emissions from developments. The LTP long term vision will be aligned with the LDF development objectives, so that it coordinates the transport and planning goals within the statutory process.

The importance of air quality in the development of policy documents was recently raised in the House of Commons Environmental Audit Committee report (2010)[12] . It emphasises that "air quality targets will not be met without a significant shift in transport policy" and that "what is needed is the political will to make this a priority and to commit the resources to address it now so that we can reap the benefits of improved health". The report also highlights the need for better understanding of air quality issues.

3.4 Kent Environment Strategy

The Kent Environment Strategy[13] was first drawn up in 2003 and was significant revised recently by Kent County Council in partnership with Kent local authorities and other organisations. The strategy includes objectives particularly relevant to air quality:

- Meeting National Air Quality Objectives
- Reducing the impact on environmental health
- Planning new development appropriately
- Tackling transboundary pollution

The Kent Environment Strategy Progress Report (2007) provides an update with respect to progress with actions relating to air quality, as shown below:

- Despite reductions in some air pollutants, overall air quality in Kent is showing no clear improvement;

[12] http://www.publications.parliament.uk/pa/cm200910/cmselect/cmenvaud/229/229i.pdf

[13] http://www.kent.gov.uk/publications/environment/environment-strategy.htm

- Long-standing problems have been exacerbated by traffic growth, increased ozone pollution from distant sources and extreme weather such as heat waves which are becoming more likely as a result of global warming;
- The identification of new Air Quality Management Areas (AQMAs) is an indication of the problem – but only a first step in solving it;
- The effort going into 'monitoring and action planning' is still not being matched by 'implementation' of actual measures to improve air quality;
- Reducing emissions from HGV and car traffic remains the key challenge to improve air quality.

3.5 Maidstone Integrated Transport Strategy (2005 – 2015) - *to be replaced by a revised strategy in-line with the LDF up to 2026*

Whilst the Local Transport Plan (currently LTP 2) for Kent is the main framework for transport investment in the Borough, the Maidstone Integrated Transport Strategy (MITS) produced in 2005 set out the Borough Council's vision for a sustainable integrated transport system. The Strategy was intended to be a dynamic document which would evolve with time and be reviewed annually with benchmarking against key targets.

The targets of the MITS include:

- Limit growth in traffic volume to 5% less than predicted over 10 years
- Meet emissions targets for NO_2 and PM_{10} by 2010
- Increase the use of public transport to 5% above current levels

The MITS was developed based on the situation 5 years ago. In the near future, MITS will be replaced by the Maidstone Hub Transport Strategy (MHTS), which will support the LDF Core Strategy and become the statutory document. When this takes place the MITS targets will also be replaced by targets for the LDF timescale (i.e. up to 2026)

MHTS will become the framework for all future investment – both public and private – in the transport network. Its role will be to coordinate this investment towards the LDF vision and objectives. It will apply the principles of the LTP 3 (i.e. national policy guidelines and objectives) to the local conditions and issues within Maidstone Borough which have been identified in the sustainability appraisal scoping report[14] as detailed in section 3.6.

3.6 The Sustainable Community Strategy for Maidstone Borough 2009 - 2020

The Local Government Act 2000 places a duty on local authorities to produce a community strategy which sets out the long-term vision for the economic, social and environmental well-being of a local area. The Sustainable Community Strategy replaces the Community Strategy (2003), 'Maidstone Matters', and has been drawn up by the Maidstone Local Strategic Partnership which includes representatives from the County and parish Councils, and public, private, voluntary and community sectors. Sustainable and integrated transport and environmental excellence and climate change are both listed as key areas within the Strategy and relevant actions with potential air quality benefits are listed below.

- Sustainable and Integrated transport actions:
  - MBC and KCC to jointly develop an Integrated Maidstone Transport Strategy
  - Develop a Parking Strategy
  - Support KCC School Travel Plan Officers in working with schools to reduce the number of children being brought to school by car
  - Bid for capacity improvements and public transport priority measures through the Kent LTP

[14] http://www.maidstone.gov.uk/PDF/Maidstone%20SA%20Scoping%20Report%20Final%20Nov%202009.pdf

- Enhance the MBC Park and Ride Service
- All LSP members to develop and implement robust green travel plans with targets to reduce inessential travel
- MBC to work jointly with other districts, KCC, the Highways Agency and the Police to alleviate the effect of Operation Stack
- Bus and rail operators to improve information, services and infrastructure
- Ensure new housing developments fund sustainable transport initiatives
- Create joint MBC/KCC Transport Task Group to work with Department for Transport, Network Rail and Highways Agency, building on Maidstone's designation as a Transport Hub
- MBC to work with KCC to take forward the programme of interventions described in the Economic Development Strategy, particularly M20 improvements, All Saints and South East Maidstone Strategic Link and improvements to rail service
- Transport Task Group to work with Network Rail and the rail service providers to develop faster rail services between Maidstone and central London, and encourage the expansion of the Thameslink network and CTRL domestic services to serve Maidstone East and Maidstone West stations.

- Environmental Excellence and Climate Change actions:
  - Develop and implement carbon reduction action plan for Borough council properties and fleet (including refuse vehicles)
  - Utilise One to One support programme from Energy Savings Trust to develop and implement multi-agency carbon reduction/climate change plan
  - Develop Borough Air Quality Action Plan
  - Increase thermal efficiency of buildings
  - New development to be built to over and above the national requirements utilising Code of Sustainable Homes
  - Reduce traffic and congestion and develop a low emission strategy that integrates with climate change, energy reduction and air quality plans for the Borough.

For further details, go to http://www.digitalmaidstone.co.uk/community/community_strategy.aspx

3.7 Maidstone Climate Change Strategy and Action Plan

"Climate Matters" Climate Change Strategy and Action Plan for Maidstone Borough Council was adopted in July 2005. This action plan has now been superseded by the Sustainable Community Strategy 2009, which incorporates climate change considerations. The Energy Savings Trust[15] are working with MBC as part of the One-to-One support programme and recommendations from the EST One-to-One Report will be used to help form a Carbon Emissions Reduction Action Plan (CERAP).

In November 2008, MBC's Cabinet agreed a 3% annual carbon reduction target for the council's operations. This means the council will aim to reduce its carbon emissions from buildings and vehicles by nearly 20% by 2015 and by over 30% by 31st March 2020. Between 2005 and 2007 the council cut its estimated carbon emissions by 7% from 6,156.51 tonnes CO2 to 5,724.41 tonnes CO2 - a reduction of 432 tonnes. Maidstone Borough Council has signed up to an agreement with government to help reduce the carbon emissions of residents by 11% by 2011. Kent County Council also aims to reduce its carbon emissions by 20% by 2015. MBC's savings are likely to come from better monitoring of electricity and gas use in

[15] www.energysavingtrust.org.uk

council buildings, utilising energy efficient vehicles and equipment and above all from energy conservation – reducing use and waste.

MBC are currently part of the Local Authority Carbon Management Programme run by the Carbon Trust. The purpose of the programme is to help each authority reduce its carbon footprint by setting a 5 year carbon emissions reduction target and develop a carbon management plan that details what the authority will do over the next 5 years to achieve this.

As well as acting to reduce carbon emissions from its own operations and more widely within the borough, the council is also working with KCC and other districts in Kent to make the community more resilient to climate change. This includes the development of a Local Climate Impacts Profile to provide a decision making resource that can be used to better understand how future impacts of climate change may affect service provision in Maidstone Borough and across Kent. By undertaking this project an effective and thorough decision making tool will be available across the county, which can be used to embed climate change into decision-making.

4 Consultation

Local Authorities are required to consult on their draft LAQM Action Plan. It is important for the success of the Action Plan to seek involvement from 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 by the Air Quality and Transport Steering Group, which includes relevant environmental and planning representatives from Maidstone Borough Council and the highways authorities Kent County Council and the Highways Agency.

The following is a list of statutory and non-statutory consultees to which the final draft Plan is also to be sent:

1. Department for Environment, Food and Rural Affairs
2. Highways Agency
3. Kent County Council
4. Maidstone Borough Council Councillors and Officers
5. Primary Care Trusts
6. Neighbouring local authorities
7. Local residents within and bordering the AQMA
8. Relevant local businesses, community groups and forums
9. 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 and are detailed in Appendix 2. The Plan will be presented to Maidstone Borough Council for endorsement and subsequently placed on the Maidstone Borough Council website at http://www.maidstone.gov.uk.

5 Action Plan Proposals for Maidstone Borough Council

It is essential that all relevant authorities provide the Council with the necessary information on their proposals that will help work towards the attainment of the AQS Objectives and EU Limit values, to be achieved by 2010. As the major source of pollution in the AQMA is transport related, those relevant authorities with responsibilities for transport have a very important role.

A summary of these proposals is outlined in the following pages, including the impact and timescales for these proposals. In order to inform the action planning process a simple assessment of the cost and benefit of each proposal has been undertaken. The following table gives an indication of the scoring used. A simple multiplication of the cost and impact, (score X score), gives some indication as to the cost effective score of the proposals. In other words the lowest cost (7) multiplied by the best air quality improvement (7) would lead to the the best cost effectiveness of 49. This methodology is commonly applied across Kent and the UK.

Table 5.1 - Scoring used to assess and prioritise proposals

Costs		Air Quality Impacts		Timescale*	
Score	Approximate cost	Score	Indicative impact		Years
7	<£100k	7	>5 µg/m^3	Short (S)	1- 2
6	£100-500k	6	2-5 µg/m^3		
5	£500k-1million	5	1-2 µg/m^3	Medium (M)	3-5
4	£1-10 million	4	0.5 - 1 µg/m^3		
3	£10-50 million	3	0.2 – 0.5 µg/m^3		
2	£50-100 million	2	0 - 0.2 µg/m^3		
1	>£100million	1	0	Long (L)	6+

* measures implemented already are denoted as " I ", otherwise denoted as ongoing - "O"

5.1 Quantification of the Action Plan

To help quantify the impact that the proposed measures may have on the exceedence areas, a project to quantify the air pollutant concentration gains or emission benefits of specific measures is to be undertaken in 2010. The project has been funded through the 2010/2011 Defra Air Quality grant and will be reported both through that mechanism and the annual progress report.

5.2 Health Impact Assessment

While drawing up the draft Action Plan, Maidstone Borough Council is undertaking a Health Impact Assessment (HIA) of the Action Plan measures proposed. This will identify whether measures proposed can be enhanced to improve health and health distribution among the population or require alteration to minimise any negative impacts on health and well-being. The results of the HIA are provided in Appendix 3.

5.3 Specific Measures to be implemented in the AQMA

To work towards achievement of the AQS objectives in the AQMA, the following measures will be/are proposed to be implemented: -

TRANSPORT MEASURES

Maidstone town is the County town for Kent and a key transport hub. This implies that it is seen as a focus for transport movements in this part of Kent and the interchange between various modes of transport, and thus has a wider role than just the delivery of its own housing and employment targets. It emphasises the need for the transport and travel strategy that will support the LDF Core Strategy to be coordinated with the transport and development aspirations of neighbouring planning authorities, and for cooperation between the Borough, County Council, the Highways Agency (responsible for the M20), and the bus and rail operators. The eventual Hub package of measures will be developed on the principle that would look at the improvement of highway capacity on its own as a last resort. Government policy expects; that sustainable spatial planning of new development will reduce the need for travel (i.e. large new housing sites should be accompanied by employment, schools, shops etc. within easy walking and cycling distance); the management of future demand for travel downwards (by making it more difficult or expensive to travel by car); the more efficient management of existing roads (i.e. better co-ordination of traffic signals etc.); and investment in sustainable transport improvements (bus lanes, cycle routes, interchange with rail services).

To help minimise and control air pollution from road traffic, Maidstone Borough Council will continue to work with relevant partners to consider air quality issues in relation to a range of transport and travel options within the Transport Hub package.

For example, the range of options being considered in the Maidstone Hub package include:

- Reducing the need to travel through sustainable spatial planning;
- Increasing the attractiveness of the alternatives to cars, e.g. walking, cycling, bus, rail;
- Improvements to public transport, such as bus priority lanes, improved park and ride facilities and services, improved and new rail services - more efficient services;
- Demand management of traffic, e.g. changes to parking standards, traffic management systems, road layout, travel planning;
- Road schemes[16] which reduce congestion and improve amenity in conjunction with other options.
- Encourage uptake of the use of low emission vehicles and strategies in both the public and private sectors.

Measure M1: Input from the Air Quality & Transport Steering Committee (AQTSC) to Transport Hub Package & any other appropriate travel scheme

The AQTSC will raise awareness of the impact on air quality of the Borough's housing and employment growth targets, and support the transport measures that would be needed to manage and reduce the potential growth in traffic that would be associated with the delivery of these targets.

This will be achieved by having regular meetings of the AQTSG to oversee Local Air Quality Management issues in relation to the proposed transport hub package; The identification and prioritisation of any transport and travel measures which may affect traffic flows in Maidstone; identification and appraisal of Section 278 works that may have an impact on the AQMA.

[16] For example, one of the options being currently explored as part of the Maidstone Hub transport package is a South East Maidstone strategic link road that would provide an alternative route between the M20 and south east Maidstone to provide improved access to the strategic road network and to reduce traffic movements through the town and along rural lanes including through Leeds and Langley. A key issue will be cost and viability, including other proposals needed to support and complement it.

Measure M2: M20 Junctions 4 - 7 Controlled Motorway and Cordon Project

The M20 J4-7 has been identified as a potential site for a controlled motorway scheme by the Highways Agency[17]. This is a busy stretch of motorway and congestion can affect journey time reliability. The introduction of a Controlled Motorway on both carriageways between these junctions will help deal with this issue. There are currently gantries displaying advisory speed restrictions. When fully operational a Controlled Motorway is designed to tackle issues of local congestion on the motorway and keep traffic moving. The system works by adjusting mandatory speed limits by using various sensors, which are able to detect the speed and flow of traffic. It works automatically and informs drivers of the reasons for the changes.

The same system has proved to be successful on the M25. It has also been used as part of the Active Traffic Management (ATM) trial used on the M42. Controlled Motorways have been shown to provide both safety and environmental benefits to road users:

- Reduction of road traffic collisions.
- More reliable journey times and improved traffic flows.
- Reduced noise and harmful vehicle emissions.

The legal process for enforcement of the variable speed limit is to be completed in 2010.

The Cordon Project, also a Highways Agency scheme, will create a managed area that incorporates the M20, M2, A229 and A249. Signage for this has already been implemented and close co-operation between KCC and the Highways Agency Control Centres is already developing.

Measure M3: Urban Traffic Management and Control (UTMC) Enhancements

A UTMC system is already operational in Maidstone town centre. This is being further developed through the LTP integrated transport programme, with additional variable message signs and automatic number plate recognition equipment being installed. An upgrade to the car park management system is complete and continual improvements are being made in order to improve the effectiveness of the UTMC. Developments of the UTMC will be continually reviewed through the AQTSC to ensure maximum air quality benefits from this measure.

Measure M4: Tackling Congestion Hotspots in Maidstone.

Maidstone has been highlighted in the LTP as one of the urban areas which suffers from serious congestion. Localised traffic congestion and poor journey time reliability is increasingly common on many local roads in the town centre. KCC are preparing a “Congestion Plan” for Maidstone, which will summarise the key issues relating to congestion and inform future traffic management work.

Measure M5: Improved Coordination of Roadworks

A new permit system has been put in place by Kent Highway Services, in order to help co-ordinate roadworks. MBC will work with KHS at KCC to produce a strategy which will help co-ordinate these roadworks in a way which minimises traffic flow disruptions.

[17] http://www.highways.gov.uk/roads/projects/18495.aspx

Bus Lane Priority Lanes: For example, an extension of the existing bus lane on the A274 Sutton Road and the A20 Ashford Road to create capacity for new bus routes. Similarly, potential will be considered on Investigations will include costs and impacts. This measure has the potential to improve public transport uptake and reduce traffic entering the AQMA.

Maidstone Quality Bus Partnership[18]:

A Quality Bus Partnership (QBP) was agreed with Arriva, the main bus service provider in the area, and Maidstone Borough Council in 2000. Since then, a range of improvements have been made to the buses, infrastructure and the services. It is intended to re-launch the Maidstone Quality Bus Partnership in 2010 with an emphasis on improving service reliability particularly where services are not considered to be as effective as they should be in attracting patronage.

There are 25 buses used on local bus services in Maidstone. The Maidstone Park & Ride service, paid for by Maidstone Borough Council and run by Arriva, received new buses in 2005. The 101 service, which is an express service between Medway and Maidstone, has also received new buses which are distinctly branded as the "Expressline". The service, which used to run every half an hour, now runs every 15 minutes during the week and passenger numbers have increased significantly, in part due to the reduced journey times between the two towns. Major improvements are also being made on the London Road corridor, with a programme of measures to increase the flow of buses (four new buses will be brought on line), to improve bus stops and provide better "real time" information.

In 2009 Kent County Council, in partnership with Tunbridge Wells Borough Council, Maidstone and Tunbridge Wells NHS Trust and Arriva Southern Counties, submitted a bid for Kickstart funding to the Department for Transport. If successful this will see a marked improvement in the service provided on the key inter-urban routes 6 and 7 between Maidstone and Tunbridge Wells.

Further investment in measures to support public transport services are being brought forward through the LTP. The future contribution of bus services to the delivery of the Growth Point targets is important, as provision must be made to accommodate additional services on the approaches to and within the town centre.

Rail Network Improvements

In the short term there are proposals to restore a link on the Maidstone East line to City destinations to act as a deterrent to rail heading which is currently taking place to stations outside of the Maidstone area (Staplehurst, Paddock Wood, Sevenoaks, and Swanley).

In the medium term there are proposals to add Maidstone East to the Thameslink network when this is expanded after the London Olympics. This would provide improved links to Kings Cross and north London destinations together with good links to rail services to other parts of the country.

MBC are working with Network Rail regarding their Route Utilisation Strategy for Kent aspiration to operate High Speed domestic services via the Medway Valley line to Maidstone West. Network Rail have also indicated that the possibility of providing a station on the High Speed line in the Maidstone area should be explored for the longer term and we support this.

[18] http://www.kent.gov.uk/transport-and-streets/public-transport/public-transport-in-kent/Maidstone-Quality-Bus-Partnership.htm

There may also be scope for developing "Park and Rail" for more local journeys into Maidstone and West Malling on both the Maidstone East and Maidstone West lines to relieve traffic congestion on the parallel highway network (M20, A20, A26). It is hoped to bring forward some more detailed proposals on this over the next couple of years.

Park and Ride Services and Facilities:

There are currently three Park and Ride sites in the Maidstone area, operated by Arriva:

- London Road - ME16 0LP
- Sittingbourne Road - ME14 3EN
- Willington Street - ME15 8JW

Investigations will include the consideration of new and amended services and facilities to support growth, particularly in the east, south east and north of the Town. For example, the Langley Park Farm Park and Ride site has been previously identified by Maidstone Borough Council as a potential replacement for the former Park and Ride operation at Coombe Quarry.

Measure M7: Measures targeting Heavy Goods Vehicles

Possible HGV time restrictions through the AQMA will be investigated as part of the Freight Quality Partnership and review of HGV routes in the town centre e.g. large waste and recycling vehicles routes to the waste management site. Possible investigation of town centre freight transport movements, notably with respect to the largest operators to develop a freight transport strategy for the town centre.

A South East Maidstone Strategic Link could influence freight movement by providing an alternative route between the M20 and south east Maidstone (particularly the Park wood industrial estate). However, the economic viability of the SEMSL is in serious doubt.

Measure M8: Tackling Air Quality hotspots with hourly NO2 objective exceedences

Investigating the potential for implementing schemes which reduce peak hour flow could yield some solutions. The LDF transport strategy will be considering "Demand management" relating to peak hour road use as a pertinent issue relating to congestion and air quality.

Investigating the use of actions which specifically discourage or reduce exposure may also be helpful.

Measure M9: Redesign of Maidstone High Street and Town Centre Area Action Plan -

Maidstone Borough Council invited submissions to a two-stage, International Open Design Competition for regeneration (£4m) of the High Street in Maidstone town centre. The competition, which launched in January 2009, was organised by Maidstone Borough Council and managed by the Royal Institute of British Architects (RIBA).

The Jury Panel chose the Letts Wheeler's scheme, due to its clutter free, simple homogenous approach to the design. The main vehicular carriageway is moved to the south of the street to create two large pedestrian squares outside the Town Hall and in Lower High Street to enable events to take place and restaurants to spill on to the street.

A programme of consultation with various interested groups is being carried out to refine the design and the final design will go back to Cabinet for approval.

The High Street has been identified in the Further Assessment as one of the hotspot areas within the AQMA. There is an opportunity, through careful design of the new town centre, to bring local air quality benefits in this area as there will be vehicular restrictions to access and further pedestrianised areas. This could create a more attractive and inclusive environment by

giving priority to vulnerable road users through restricting and rationalising motor vehicle movements in the High Street

Preparation of the Town Centre Regeneration Area Action Plan will provide the policy framework for the development and regeneration of Maidstone Town centre and its role as a key transport hub.

Measure 10: MBC will seek improvements in Emissions Standards for Council Fleet and Public Service Vehicles

Emissions from the Council fleet are being measured by Maidstone Borough Council as part of the requirements of national indicators 185 (for carbon dioxide reduction from local authority operations), and indicator 194 for air quality (% reduction in NOx and primary PM_{10} emissions through local authority's estate and operations).

No targets have been set for emissions standards as yet, but proposals are being considered for the Council fleet e.g. for lease cars, waste collection fleet (Euro 4 for all vehicles) and Park and Ride buses.

POLICY MEASURES AND PARTNERSHIP WORKING

Measure M11: MBC will ensure local air quality is fully integrated into the LDF process and development scenarios are appropriately assessed with respect to the potential impacts on air quality.

An air quality Supplementary Planning Document (SPD) is under development which will guide the management of air quality in the planning process and aims to maximise the benefits of the AQMA declaration.

With significant development proposed in the area up to 2026, assessment of the impacts on the highways and transport networks (and resulting environmental impacts) and consideration to measures to deal with potential impacts will be crucial. Sustainable travel patterns will be a key driver to the achievement of sustainable development in the area and to minimise negative impacts on air quality.

Measure M12: MBC will seek to request contributions for developments likely to have an air quality impact on the AQMA, either through the use of S106 agreements or through a Community Infrastructure Levy (CIL)/ strategic tariff.

PPS23 outlines the statutory basis for applying a combination of planning conditions and legal obligations to address the environmental impacts of proposed developments. In particular, it notes that "Section 106 Agreements can be used to improve air quality, make other environmental improvements"… "or offset the subsequent environmental impact of a proposed development."

Another relevant adopted development plan policy which supports the use of such contributions in relation to air quality issues is NRM9 in the South East Plan. Therefore MBC will give consideration to the development of a framework for calculation of contributions in relation to air quality issues either for use in S106 agreements or through a Community Infrastructure Levy (CIL). CIL/tariff levels may be debated through the Core Strategy Independent Examination. Contributions secured, (either through S106 agreements or a CIL), would be used to fund initiatives that assist emissions reduction in support of Local Air Quality Management.

Measure M13: MBC will ensure effective co-ordination between climate change (carbon emission reduction), air quality strategies and action plan measures.

There are significant overlaps between the two areas, so joint working will maximise the benefits. There are also potential areas where carbon reduction strategies and local air quality conflict (e.g. use of some types of biofuel in the vehicle fleet and increased uptake of biomass boilers).

Coordination of two areas of work will increase the positives and reduce the negatives in both areas of work.

Measure M14: MBC will continue its active involvement and support of the Kent and Medway Air Quality Partnership.

MBC is a member of the Kent and Medway Air Quality Partnership, which was formed in 1992. The major aims and objectives of the Partnership are to:

- Facilitate a co-ordinated approach through Kent and Medway for the Local Air Quality Management obligations placed on local authorities under the Environment Act 1995.
- Compile, update, and maintain an Emissions Inventory of air pollution sources in and around Kent, to assist with the LAQM process.
- Comment on and influence the economic, planning and transport policies within the county so that air quality issues are properly considered and addressed.
- Gain an understanding of the health implications associated with poor air quality and the threat it poses to the health of Kent and Medway's communities.
- To promote an awareness of air quality issues by working with national agencies, neighbouring authorities, and European partners and to participate in joint initiatives to further the knowledge and understanding of air quality issues.
- Liaise with DEFRA and Government bodies to assist with the implementation of the National Air Quality Strategy.

The Partnership has developed a draft Air Quality and Planning Guidance in 2009. This guidance is aimed at developers, their consultants and local authorities. It provides technical advice on how to deal with planning applications that could have an impact on air quality. If the procedures in this guidance are followed, it will help to ensure consistency in the approach to dealing with air quality and planning across Kent. The Guidance is currently undergoing consultation and is awaiting endorsement by the Kent Environmental Health Managers Group and Kent Planning Officers Group.

Measure M15: MBC will continue its active involvement and support of the Low Emissions Strategies (LES) Partnership and Low Emissions Strategy promotion.

Maidstone Borough Council is a member of the Low Emission Strategies (LES) Partnership[19]. The partnership comprises a Peer Group of 15 local authorities across England working together to support local implementation of LES. LES provide a package of measures to help mitigate the transport impacts of development. Their primary aim is to accelerate the uptake of low emission fuels and technologies in and around a new development, thereby

[19] http://www.lowemissionstrategies.org/

complementing other design and mitigation options, such as travel planning and the provision of public transport infrastructure.

MBC will utilise these links to advance opportunities to develop trial electric or low carbon vehicles and lead by example.

MBC will actively seek funding opportunities to incentives the uptake of low carbon technologies and infrastructure. An infrastructure grant for the installation of electric vehicle charging points will be applied for in 2010 and future opportunities for sponsorship and partnership working will be also pursued in accordance with guidance on local transport plans (DfT 2009).

Measure M16: MBC will ensure effective co-ordination of local air quality

A Tonbridge & Malling Officer involved with local air quality management will attend MBC Air Quality & Transport Steering Committee meetings. T & M and MBC will develop a strategy for joint working on air quality issues, particularly with regard to the Forstal road area on our shared border in Aylesford.

Measure M17: MBC will investigate potential use of NOx reducing paving paints in the AQMA.

A review of the scientific studies carried out and of the cost to benefit comparisons will be undertaken.

5.4 General Measures to be implemented Borough-Wide

LEADING BY EXAMPLE

To ensure that the impact of Maidstone Borough Council's operations have minimum impact on air quality, Maidstone Borough Council gives a commitment to the following: -

- **Measure M18:** MBC will work in partnership with the PCT to establish Health Baselines in various parts of the AQMA plus other parts of the borough**.**
- **Measure M19:** MBC will work with KCC, HA and other partners to encourage the planting of tree species which benefit air quality within the borough, through the planning process, Maidstone's Green Spaces Strategy and community partnerships.
- **Measure M20:** MBC, KCC and HA will carry out regular emissions testing of its vehicle fleet to ensure that all vehicles comply with the law.
- **Measure M21:** MBC KCC and HA will promote the uptake and use of cleaner or alternative fuels where possible.
- **Measure M22:** MBC KCC and HA will establish and implement a rolling programme for replacing older more polluting vehicles with newer cleaner vehicles, which comply with the prevailing EURO standard.
- **Measure M23:** MBC KCC and HA will improve the Council's vehicle fuel consumption efficiency by better management of their fleet activities.
- **Measure M24:** MBC KCC and HA will investigate options for better travel planning amongst their employees.
- **Measure M25:** MBC KCC and HA will assess their energy needs and make recommendations to the Council on reduction of carbon emissions.

Maidstone Borough Council has become one of eight councils in Kent, East and West Sussex and Surrey to become part of the EST's one to one support programme. The one-to-one support programme aims to help local authorities reduce area-wide carbon emissions and demonstrate local leadership in addressing climate change. The programme works on a seven stage process that takes place over two years to develop, implement and review a climate change action plan. In the second year the council will be able to bid for up to £25,000 towards implementing its plans.

Maidstone Borough Council staff have access to free park and ride tickets, subsidised bus tickets and a car sharing scheme. These schemes will be assessed and promoted through the MBC travel plan which will be reported against through KCC iTrace.

EDUCATION AND COMMUNITY INITIATIVES

To ensure that members of the public have access to information about air quality and can make informed choices, Maidstone Borough Council gives a commitment to the following: -

- **Measure M26:** MBC to promote and support localised energy generation in both private households and public buildings.
- **Measure M27:** MBC will implement initiatives to educate communities on air pollution issues and ways to minimise impacts on air quality.
- **Measure M28:** MBC will provide the public with relevant information thus enabling commuters to make informed choices about their transport options.
- **Measure M29:** MBC will continue to work in partnership with KCC to increase uptake and implementation of School Travel Plans, Workplace Travel Plans and Residential Travel Plans , particularly where likely to impact on the AQMA..

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, workplaces and residential developments and area-wide, including mixed use developments.

A School Travel Plan is a set of measures to help cut the number of car journeys people make to school, encourage more journeys by public transport, and increase walking and cycling. There are a number of schools within and the AQMA, where implementation of School Travel Plans will be of particular significance. The DfT and Kent Local Transport Plan target is for all Kent schools to have travel plans by 2010.

A Workplace Travel Plan should be tailored to the needs of individual businesses. It considers journeys from home to work, but can also include business journeys, travel by visitors, deliveries, contractors and company cars. Large organisations may benefit from a whole range of new ideas and changes, while small businesses may only need to make one or two very simple changes to make a big difference. 'New Ways 2 Work' is a KCC led initiative to encourage everyone from small businesses to major corporations to look more closely at the impact which commuting and business travel has on their staff, productivity and corporate image. This promotes simple steps that organisations can take, such as setting up a car sharing scheme, or asking for KCC help to set up a comprehensive Workplace Travel Plan.

Measure 28 seeks to support KCC travel plan officers through the planning process to raise the standard of workplace and residential travel plans, ensuring the Travel plans are implemented, monitored and reviewed over time to reduce single occupancy car journeys and encourage other modes of transport

- **Measure M30:** MBC will continue working partnerships with KCC, Sustrans and the Maidstone Cycling Forum to ensure that walking and cycling initiatives are promoted and supported in Maidstone. An updated cycle strategy for the town is to be developed.

- **Measure M31:** MBC and KCC will encourage their employees to consider the use of active transport (e.g. walking and cycling) in their daily duties by providing incentives, such as walking and/or cycle usage mileage..

- **Measure M32:** MBC will continue to work with KCC and transport providers to support and promote increased uptake of public transport modes.

Schemes such as the Kent Freedom Pass which provides unlimited all-year round use of local bus services in Kent, for one payment of just £50 to school children in the academic years 7-11 have proved very successful. KCC first introduced the scheme in June 2007 in three pilot areas intended to run until 2009. However, due to its success all remaining districts are now included (Maidstone as from June 2008). Since its introduction it has proven very successful, encouraging children away from car travel and on to Kent's bus network. By the end of the first year, pass holders had made more than 1 million bus journeys and the 10,000th pass was issued in October 2008. There are now more than 17,000 passes in circulation.

SECURING AIR QUALITY BENEFITS THROUGH STATUTORY FUNCTIONS

To ensure that air pollution is controlled by legislation and targeted enforcement, Maidstone Borough Council will continue the following: -

- **Measure M33**: All relevant air quality issues will be highlighted within planning applications and mitigation measures considered where possible.

- **Measure M34:** MBC and Environment Agency (EA) will permit and regularly inspect industrial premises under the Environmental Permit regulatory regime.

- **Measure M35:** MBC and EA will enforce Environmental Permitting Regulations and/or statutory nuisance legislation to control smoke, dust, fumes or gas emissions from commercial and domestic premises which are causing a nuisance or are prejudicial to health.

- **Measure M36:** MBC and EA will enforce relevant legislation to reduce the burning of commercial and domestic waste and ensure regulated incinerator facilities are fully compliant.

- **Measure M37:** MBC will promote composting in a bid to reduce pollution from domestic bonfires.

AIR QUALITY MONITORING

To ensure that there is adequate air pollution monitoring data with which to manage air quality across the borough: -

- **Measure M38:** MBC will continue to monitor a range of air pollutants throughout Maidstone and make the monitoring information freely available to the public in an easily understood form.

- **Measure M39:** MBC will ensure that all air quality monitoring data reported to the public is both accurate and precise by implementing quality control measures.

- **Measure M40:** MBC will establish additional monitoring sites across the borough in locations where poor air quality is suspected.

Monitoring data is made available through the Kent & Medway Air Quality Monitoring Network - http://www.kentair.org.uk/

Table 5.1- Measures to be Implemented AQMA

Measure	Actions	Lead Authority	Timescale	Status	Impact	Cost	Cost Effective Score	Targets/ Indicators
Measure M1: Input from the Air Quality & Transport Steering Committee (AQTSC) to Transport Hub Package & any other travel schemes within the Borough.	a) Regular meetings of the AQTSG to oversee Local Air Quality Management issues. b) Identification and prioritisation of any transport and travel measures which may affect traffic flows in Maidstone.	**KCC** Transportation & Development + **MBC**	LT	Potential schemes identified. Funding required.	5	3	15	- - Annual traffic counts that KCC carry out at the inner and outer cordons around the Maidstone town - Response to Integrated Transport Strategy and LDF consultation. - Identify status of any transport or infrastructure schemes identified in the Integrated Transport Strategy and LDF to ensure quantitative assessment of air quality implications. - Identification of funding sources for air quality assessments of any identified schemes. - Source funding and carry out a feasibility study investigating the potential for the use of traffic orders or Low Emission Zones for the hotspot areas.
	c) Section 278 Works	**KCC** County Works Improvements Team + **MBC**	2010	Ongoing	2	7	14	
Measure M2: M20 Junctions 4 - 7 Controlled Motorway and Network Performance Monitoring.	- Highways Agency to seek ministerial approval - Investigate ways to monitor effect - KHS to coordinate any information emerging from the controlled motorway system with the KCC Urban Traffic Management Scheme & Control System	**HA** + **KCC & KHS** Transportation & Development	2010	Await legal process for enforcement of the variable speed limit	3	4	12	- Ministerial approval of Controlled Motorway. - Implementation of traffic management measures by target year. -Identify funding for monitoring.

Measure M3: Urban Traffic Management and Control (UTMC) Enhancements.	Collection and analysis of data.	**KCC & KHS** Transportation & Development **Jacobs** Technical Director Traffic Systems	2010+	Improvements to equipment (2 year programme ends March 2010)	3	5	15	- 10% reduction in congestion on baseline 2005/6. - Annual review of situation.
Measure M4: Tackling Congestion Hotspots in Maidstone.	MBC to work with the KCC Network Management Team to identify congestion hotspots in Maidstone, using various data such as journey time, NI 167, ANPR; plus grade these hotspots against a congestion priority ranking system	**KCC** Network Management Team **+** **KHS** (Transportation & Development Manager) **+** **MBC**	2010+	Review & investigation ongoing	4	5	20	- Review and update the 2006 KCC congestion hotspots report. - Establish annual periodic review of congestion hotspots from 2011 onwards. - Congestion performance indicator NI 167. - Reduction of journey times into Maidstone. - Annually report any other action taken.
Measure M5: Improved Co-ordination of Roadworks.	Strategy to be developed to improve co-ordination of road works in relation to Maidstone Air Quality hotspots. Ensure air quality is one of the relevant triggers for permit considerations and conditions.	**KHS** (Transportation & Development Manager**) + Jacobs** (Traffic systems Technical Director) + **KCC** Network Performance Team (Network Management Manager & Roadworks Manager) + **MBC**	2010+	Permit scheme commenced 25th January 2010	2	7	14	- Periodic review of new permit scheme as outlined in the KCC document entitled "Measuring the Success of the Kent Permit Scheme (2010). - Implementation & review of co-ordination strategy.
Measure M6: Improvements to Public Transport	1) Maidstone Quality Bus Partnership: Lobby for fleet emissions improvements within Partnership agreement	**KCC** (Transportation & Development Manager) + **MBC**) + Arriva Bus Company	2010	Funding & approval required	4	5	20	- To decrease age of fleets and to increase percentage of EU 4 & 5's within fleets plus increase proportion of low emission vehicles in use.
	2) Bus Lanes	**KCC** (Transportation & Development Manager) **MBC**	LT	Approval required & funding through development	2	6	12	- Implementation of scheme through LDF core strategy. - Passenger numbers. — Improvements to public transport schemes update report to be submitted to AQTSG annually (April)

	3) Park and Ride		LT	Approval required & funding through development	4	4	16	- Implementation of scheme through LDF core strategy. - Passenger numbers.	
	4) Rail Network Improvements	**KCC** (Transportation & Development Manager) + **MBC** + **South Eastern** + **Network Rail**	2010	Ongoing improvements	3	4	12	- Feasibility study J8 M20 Maidstone Parkway. - Implementation of schemes. - Passenger numbers. - Research potential for Park & Rail scheme	
Measure M7: Optimisation of the types and distributions of HGVs in Maidstone town, particularly with respect to air quality, congestion and business needs issues.	Identify funding sources for freight/HGV distribution study. -Identify sources of information. - Develop & implement a Freight strategy.	**KCC** Network Performance Team + **MBC**	2011/12	Funding required plus ongoing investigation re relevant sources of information	4	7	28	- Identify funding sources. - Preparation of Freight/HGV distribution study. - Develop & implement a Freight/HGV strategy.	
Measure M8: Tackling hotspots with hourly NO_2 objective exceedences.	- Investigate the potential for implementing schemes which reduce peak hour flow of traffic. - Investigate the use of actions which specifically discourage/reduce exposure where hourly exceedences.	**MBC** **KHS** (Transportation & Development Manager)	2010+		2	7	14	- Investigation report regarding schemes to reduce peak hour flow of traffic. - Investigation report regarding schemes to discourage /reduce exposure at road sites where members of the public may be exposed to levels of pollution in breach of the hourly NO2 Objective. - Demand Management to be a consideration in the LDF transport strategy.	
Measure M9: Town Centre Regeneration Action Plan.	Maidstone High Street redesign & improvement measures.	**MBC**	2010/11	High Street works start Autumn 2010; phasing subject to funding	3	3	9	- Implementation of High Street improvement scheme. - Adoption/implementation Area Action Plan.	
Measure M10: MBC & KCC will seek improvements in Emissions Standards for KCC & MBC Council Fleets and Public Service Vehicles.	Development of Green Procurement Strategy.	**MBC** + **KCC Operations** (Street Scene Manager)	2010	Currently in development but not approved by cabinet yet	3	6	18	- Average age fleet and Euro category/Fuel type.Target to be set)	

Measure M11: MBC will ensure local air quality is fully integrated into the LDF process and development scenarios are appropriately assessed with respect to potential impacts on air quality.	An air quality Supplementary Planning Document (SPD) is being developed and may be implemented following LDF adoption.	**MBC**	2013	Await LDF adoption 2011 and subsequent final draft of SPD	4	7	28	- Adoption of Air Quality SPD or similar guidance.
Measure M12: MBC will request contributions for developments likely to have an air quality impact on the AQMA. either through the use of S106 agreements or through a Community Infrastructure Levy (CIL).	- Framework to be developed for calculation of contributions in relation to air quality issues either for use in S106 agreements or in a CIL. - CIL/tariff levels may be debated through the core strategy Inquiry.	**MBC**	2010+	Ongoing	3	7	21	- Contributions secured, (either through S106 agreements or a CIL/ strategic tariff), to be used to fund initiatives that assist Local Air Quality Management.
Measure M13: MBC will ensure effective co-ordination between climate change and air quality strategies and action plan measures.	Strategy to be developed to improve co-ordination between climate change and air quality strategies and action plan measures.	**MBC**	2010+	Ongoing	3	7	21	- Implementation of co-ordination strategy - Reciprocal attendance of air quality and climate change working groups/steering committees
139 **Measure M14:** MBC will continue its active involvement and support of the Kent and Medway Air Quality Partnership.	- Attend quarterly meetings of partnership and share information. -Continue annual payment of fee to support membership and running of the Kent and Medway Air Quality Network. - MBC will continue to work together the Kent and Medway Air Quality Partnership on promotional activities to raise the profile of air quality in Kent and Maidstone.	**MBC**	2010+	Ongoing	2	7	14	- Membership of the Partnership and Network continued. - Number of Partnership events MBC involved with which raise the profile of air quality in Maidstone
Measure M15: MBC will continue its active involvement and support of the Low Emissions Strategies (LES) Partnership.	Attend meetings; participate in relevant workshops and questionnaires/surveys.	**MBC**	2010+	Ongoing	3	7	21	- Membership of the Partnership continued. - Application of LES.

Measure M16: MBC will ensure effective co-ordination of local air quality management with Tonbridge & Malling Borough Council.	-T**&M BC** attendance of **MBC** Air Quality & Transport Steering Group; - Development of strategy for joint working, particularly in relation to air quality improvements along Forstal Road, Aylesford.	**MBC** + **T&M BC** Environmental Protection Team	2010/11		2	7	14	- Organisation of MBC+T&MBC meetings to discuss potential actions and targets. -Development of Strategy for joint working in relation to Local Air Quality Management. - Preparation/Implementation of joint strategy for AQ improvements along Forstal Road, Aylesford.
Measure M17: MBC will investigate potential use of NO_X reducing paving and paints in the AQMA.	Survey of current studies and evidence	**MBC**	2010/11		2	7	14	- Review carried out of studies undertaken by other local authorities and any other supporting evidence; - Identify potential funding sources - Implementation of improvement schemes.

Table 5.2 - Measures to be Implemented Borough-wide

Measure	Actions	Lead Authority	Timescale	Status	Impact	Cost	Cost Effective Score	Targets/Indicators
Measure 18: MBC will work in partnership with the PCT to establish Health Baselines in various parts of the AQMA plus other parts of the borough	- PCT attendance of MBC Air Quality & Transport Steering Group. - Undertake Health Baseline study to a) Identify conditions that may be exacerbated by poor air quality b) Review & report on data.	**MBC** + **PCT**	2010+	Funding Required	1	7	7	- Identify suitable contact with PCT for Steering Group role. - Identify funding source for Health Baseline study. - Progress with establishing Health Baseline.
Measure M19: MBC will work with KCC, HA and other partners to encourage the planting of tree species which benefit air quality within the borough, through the planning process, Maidstone's Green Spaces Strategy and community	Strategy to be developed to improve co-ordination of tree-planting programmes with respect to air quality benefits	**MBC** + **KCC** + **HA**	2010/11		2	7	14	- Preparation/Implementation of co-ordination strategy.

Measure M20: MBC KCC and HA will carry out regular emissions testing of their vehicle fleets to ensure that all vehicles comply with required emissions standards.	Establish which groups are responsible for organising this and what the time schedules involved are	**MBC + KCC + HA**	2010	Ongoing improvements	2	7	14	- %Failure rate in each financial year.
Measure M21: MBC, KCC and HA will promote the uptake and use of cleaner or alternative fuels for vehicles where possible.	- Establish contact points - Determine strategy/advise note and annually review content	**MBC + KCC + HA**	2010	Ongoing improvements	2	7	14	- List of any promotion campaigns planned/implemented. - Number/Proportion of cleaner vehicles within fleets or clean fuels infrastructure in each financial year.
Measure M22: MBC KCC and HA will establish and implement a rolling programme for replacing older more polluting vehicles with newer cleaner vehicles, which comply with the prevailing EURO standard.	Development of Green Procurement Strategy (MBC) Identification of KCC and HA green procurement policies Identification of fleet composition for MBC,LCC and HA	**MBC + KCC + HA**	2010	Ongoing improvements	2	7	14	- Number/proportion of new/improved vehicles within fleets in each financial year.
Measure M23: MBC KCC and HA will improve their vehicle fuel consumption efficiency by better management of fleet activities and consider their activities in relation to hotspots.	- Develop fleet management plan to improve fuel efficiency; - Investigate fleet activities in relation to pollution hotspots e.g. waste management fleet routes.	**MBC + KCC + HA**	2010+	Ongoing improvements	2	7	14	- Implementation of smarter driver programme. - Preparation/ Implementation of Fleet management plan. - Progress against targets for NI185.
Measure M24: MBC and KCC will investigate options for better travel planning	- Review of MBC Travel Plan in order to bring up to date - iTrace software license to be procured for MBC staff.	**MBC + KCC**	2010+	Ongoing improvements	2	7	14	- a MBC Travel Plan Co-ordinator will be appointed and a Travel Plan developed, implemented, promoted and monitored in liaison with KHS Travel Planning

amongst their employees.	- iTrace training for MBC staff to use iTrace to be implemented. - Review of KCC Travel Plan.							team. - Full implementation of iTrace. - Implementation of KCC Travel Plan & review of progress with targets.
Measure M25: MBC and KCC will both be assessing their energy needs and make recommendations on reduction of carbon emissions.	MBC to take forward recommendations from the EST One to One report to help form a Carbon Emissions Reduction Action Plan (CERAP).	**MBC + KCC**	2010	Ongoing improvements	2	7	14	- Implementation of CERAP. - Progress against targets for NI186. - Progress against some targets for NI185.
Measure M26: MBC and KCC to promote and support localised energy generation in both private households and public buildings.	MBC to include measures which promote and support localised energy generation in both private households and public buildings in the Carbon reduction Action plan (CERAP).	**MBC + KCC**	2010	Base level setting	2	7	14	-Implementation within CERAP and reported annually. - Number of promotional events and opportunities demonstrated annually. -develop quantifiable baseline statistics for both KCC & MBC. -
Measure M27: MBC will implement initiatives to educate communities on air pollution issues and ways to minimise impacts on air quality.	-Develop AQ education plan/strategy -Put plan into action	**MBC**	2010	Ongoing improvements	2	7	14	- Initiatives identified; - Initiatives implemented

Measure M28: MBC will provide the public with relevant air quality information thus enabling the public to make informed choices about their transport options.	-- Up to date air quality information for the Maidstone Borough will continue to be available to the public through both Maidstone Councils digital website and the Kent and Medway Air Quality Network.	**MBC**	2011	Funding required for Air Alert (AQ Grant applied for 2010)	2	7	14	- Investigate funding sources. - Consider Air Alert or similar service. -Continued membership of KAMAQN.
Measure 29: MBC will continue to work in partnership with KCC to increase uptake and implementation of School Travel Plans, Workplace Travel Plans and Residential Travel Plans, particularly where likely to impact on the AQMA.	1) **MBC** to ensure all **relevant** commercial planning applications have travel plan conditions or section 106 agreements applied in accordance with current best practice (DfT delivering Travel Plans through the Planning Process (April 2009) and KCC Guidance on transport Assessment and Travel Plans (Oct 2008)). 2) **MBC & KCC** to produce Travel Plan Strategy which: a) Details procedure for **tracking & possible requirement for** enforcement of planning conditions requiring travel plans. b) Details procedure for **tracking & possible requirement for** enforcement of Travel plans implemented through section 106 agreements. c) Details procedure for Travel Plan Information storage at KCC and MBC.	**MBC** + **KHS** Sustainable Transport – Travel Planning Team	2010+	Ongoing Improvements	2	7	14	-Number of new travel plans. - Number of active Travel plans within AQMA - Report on Travel plans travel survey results which will impact on the AQMA. - Promotion of Travel Plan initiatives e.g. Sustrans' TravelSmart. - Implement & regularly review Travel Plan Strategy -Develop Business Case for Travel Co-ordinator & identify potential funding streams.

	3) **KCC** to monitor travel Plan uptake across the Borough 4) **MBC & KCC** Investigate use of Maidstone Borough Travel Planning Coordinator.							
Measure 30: MBC will continue working partnerships with KCC, Sustrans and the Maidstone Cycling Forum to ensure that walking and cycling initiatives are promoted and supported in Maidstone.	- An updated Cycling Strategy for Maidstone is being developed. - Appropriate MBC plus KCC staff to attend Maidstone Cycling Forum meetings. - Identify walking & cycling schemes (such as infrastructure improvements and Park & Cycle). - Identify walking & cycling promotional opportunities around Maidstone Borough.	**MBC** + **KCC** (Mobility Management Team Leader & Cycling Transport Planner)	2010	Ongoing improvements	2	7	14	- Implementation new/revised cycling strategies. - To produce a report/list of schemes to advance through the Maidstone Cycling Forum. - Number of walking &/or cycling initiatives in operation. - Establish the use of cycle monitoring counts at key points on cycle routes.
Measure M31: MBC and KCC will encourage their employees to consider the use of active transport in their daily duties by providing incentives, such as walking and/or cycle usage mileage.	- Continue to investigate and develop the use of various incentive schemes. - Develop new/revised MBC & KCC cycling strategies. - MBC to investigate use of annual survey on how/what modes of transport employees use to travel to work.	**MBC** + **KCC** (Climate Change Officer & Mobility Management Team Leader)	2010+	Ongoing improvements	2	7	14	- % MBC employees walking/cycling to work. - Incorporate new/revised cycling measures within MBC Travel Plan in line with the new MBC Cycling Strategy to be developed.
Measure M32: MBC will continue to work with KCC and transport providers to support and promote increased uptake of public transport modes.	Promote schemes such as the Kent Freedom Pass and Smart and integrated ticketing.	**MBC** + **KCC** Sustainable Transport Team	2010	Ongoing improvements	2	7	14	- % Uptake schemes. - Passenger numbers.
Measure M33: MBC Environmental Health will comment upon planning applications to ensure that all relevant air quality issues are highlighted and mitigation measures are considered wherever possible.	The Pollution Team will continue to work with Planning Development Control as Statutory Consultees	**MBC**	2010+	Ongoing improvements	3	7	21	- Total number of planning applications consultations responded to in each financial year - Total number of planning applications with air quality conditions/ assessments.

Measure M34: MBC and Environment Agency (EA) will permit and regularly inspect industrial premises under the Environmental Permit regulatory regime.	MBC & EA will continue to monitor and carry out their statutory duties where and as appropriate.	**MBC + EA**	2010+	Ongoing improvements	2	7	14	- Number of inspections carried out in each financial year. - Number of enforcement actions taken
Measure M35: MBC and EA will enforce Environmental Permitting Regulations and/or statutory nuisance legislation to control smoke, dust, fumes or gas emissions from commercial and domestic premises which are causing a nuisance or are prejudicial to health.	MBC& EA will continue to monitor and enforce statutory nuisance legislation in this area.	**MBC + EA**	2010+	Ongoing improvements	2	7	14	- Number of relevant nuisance complaints in each financial year
Measure M36: MBC and EA will enforce relevant legislation to reduce the burning of commercial and domestic waste and ensure regulated incinerator facilities are fully compliant.	MBC will continue to monitor and enforce legislation in this area.	**MBC + EA**	2010+	Ongoing improvements	2	7	14	- % reduction in number of bonfire complaints. - % compliance of EA relevant regulated facilities in the Borough.
Measure M37: MBC will promote composting in a bid to reduce pollution from domestic bonfires.	Reintroduce discount/promotion campaign for compost bins	**MBC**	2010+	Ongoing improvements	2	7	14	- % uptake composting bins. - Number bonfire complaints.
Measure M38: MBC will continue to monitor a range of air pollutants throughout Maidstone and make the monitoring information freely available to the public in an easily understood form.	Continued support for Kent & Medway Air Quality Monitoring (K&MAQN) Network	**MBC**	2010	Ongoing improvements	1	7	7	- Continued membership of the K&MAQN Network continued.

Measure M39: MBC will ensure that all air quality monitoring data reported to the public is both accurate and precise by implementing quality control measures.	- Regular fortnightly calibrations and filter changing of continuous monitoring equipment in MBC's air quality stations - Annual audit of air quality stations' equipment - Appropriate use and care of NO2 diffusion tubes regularly deployed around the borough	**MBC**	2010	Ongoing improvements	1	7	7	- QA/QC measures and training adopted.
Measure M40: MBC will establish additional monitoring sites across the borough in locations where poor air quality is suspected.	MBC will continue to carry out and report on their statutory duties under the Review & Assessment process for LAQM	**MBC**	2010	Ongoing improvements	1	7	7	- Poor air quality sites identified monitored and dealt with as through the process of Review & Assessment. - Additional monitoring sites established as and when required.

6. Implementation and Monitoring

Maidstone Borough Council will work jointly on the action plan measures with the relevant partners including the Highways Agency, Kent County Council, transport operators, schools and local businesses. To secure the necessary air quality improvements, there must be involvement by all local stakeholders who should actively work to encourage community participation in the process.

The Air Quality and Transport Steering Group has been set up to take positive action in managing air quality in the Borough of Maidstone and ensure integration with County and National perspectives. This will be achieved through partnership working between internal departments and external organisations that have a mutual interest in air quality issues. The group will assist in the fulfilment of MBCs statutory functions in relation to air quality, develop action plans, support educational promotions for residents, business operators and visitors to the Borough and co-ordinate policy documents to ensure air quality within the Borough is effectively managed for future generations.

The implementation and effectiveness of the Action Plan will be carefully monitored through air quality monitoring of NO_2 and PM_{10} at relevant locations within the AQMA. In addition, traffic flow changes on the key roads will also be assessed through the review and assessment process and as a result of the uptake of action plan measures. Targets and indicators have been set for measures to monitor progress with implementation.

The Air Quality and Transport Steering Group will ensure regular review of the action plan proposals to evaluate progress and this will be reported annually as part of the LAQM Action Plan Progress Report.

7. Glossary of Terms

Abbreviation	Full Name
AQMA	Air Quality Management Area
AQS	Air Quality Strategy
DEFRA	Department for Environment, Food and Rural Affairs
DFT	Department for Transport
HDV	Heavy-Duty Vehicles
HGV	Heavy-Goods Vehicles
KCC	Kent County Council
LAQM	Local Air Quality Management
LDD	Local Development Documents
LDF	Local Development Framework
LEZ	Low Emission Zone
LGV	Light-Goods Vehicles
LSP	Local Strategic Partnership
LTP	Local Transport Plan
MBC	Maidstone Borough Council
NAQS	National Air Quality Strategy
NO	Nitric Oxides
NO_2	Nitrogen Dioxide
NO_x	Oxides of Nitrogen
PM_{10}	Particles of up to 10 µm diameter
$\mu g/m^3$	Micrograms per cubic metre
UTMC	Urban Traffic Management and Control
VMS	Variable Message Signage

8. References

DEFRA (2007) Air Quality Standards (England) Regulations 2007, the Stationery Office

Defra in partnership with the Scottish Executive, Welsh Assembly Government and Department of the Environment Northern Ireland (2007) The Air Quality Strategy for England, Scotland, Wales and Northern Ireland, The Stationery Office

DEFRA (2009) Policy Guidance LAQM.PG(09)

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

EPUK (Formerly NSCA) (2000) Air Quality Action Plans

EPUK (Formerly NSCA) (2001) Air Quality: Planning for Action

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

Kent County Council (2003) Kent Environment Strategy

Maidstone Borough Council (2000) Maidstone Borough-Wide Local Plan

Maidstone Borough Council (2009) Sustainable Community Strategy for Maidstone Borough 2009 - 2020

Maidstone Borough Council (2009) LAQM Further Assessment

Appendix 1 DEFRA Action Planning Requirements Compliance Checklist

WORK AREA	CONSIDERED/INCLUDED	LOCATION IN ACTION PLAN/ COMMENTS
Adherence to Guidelines and Consideration of Policies		
Statutory Consultees consulted?	Included	Appendix 2
Consulted with other Local Authorities and internal departments?	Included	Appendix 2
Statement of Pollutant causing AQMA?	Included	Section 2
Principle sources of pollutants identified?	Included	Secion 2
Have other local authorities' plans and policies been considered?	Considered	Reviewed and considered through steering group and at drafting stage.
Options timetable included?	Considered	Options timetable not included due to lack of control on factors affecting that timetable. Dealt with through Measures requiring annual reporting of timescales.
Have options been costed?	Included	Estimates included in Table 5.1 & 5.2
Have the impacts been assessed?	Included	Qualitative assessment carried out to create Table 5.1 & 5.2. Further Qualitative consideration took place through consultation process (See Appendices).
Checklist of Measures		
Have options been considered?	No	Measures have been drafted in order to develop options as policy develops. Ensuring Air Quality is considered
How many options considered?	None	Not applicable at this stage
Transport impacts assessed?	No	Not at this stage. As LTP3 and MBC's LDF is developed transport impact assessments can be carried out.

		Until then the available options are too broad and generic to be quantified.
Have air quality impacts been assessed modelled or measured?	considered	Quantification due to start end 2010
Have socio-economic impacts been assessed?	included	Appendix 3 – Health Impact Assessment
Have other environmental impacts been assessed?	included	Appendix 3 – Health impact assessment
Have costs been considered?	included	Estimates included in Section ?
Appropriateness and Proportionality		
Do measures seem appropriate to the problem?	Yes	
Have the measures been assessed?	Yes	Qualitatively
Are the measures likely to succeed?	Yes	
Have wider impacts been assessed?	Yes	Appendix 3 – Health Impact Assessment
Was the costing method appropriate?	Yes	
Is it likely that the AQMA objective will be met?	All but Upper Stone Street	
Do the chosen options comply with Government Policies?	Yes	
Implementation		
Are measures realistic?	Yes	
Have responsibilities been assigned to the relevant party?	Yes	
Does the assigned party have the necessary powers?	Yes	
Is the financing secure and identify who pays?	Yes	

Appendix 2 Consultation Outcome

1. Department for Environment, Food and Rural Affairs

No comments regarding the draft action plan received to date (October 2010)

2. Highways Agency

Commented on original draft. No further comments.

3. Kent County Council

a) Responses from Sustainable Transport team

I'm generally happy with measure 29 which we have our name against. The only amendment I would request is point 3 in column 2 which currently says:

3) **KCC** to monitor travel Plan uptake across the Borough

I would request that this says:

'KCC to monitor Travel Plan uptake across the Borough with the support and co-operation of **MBC** where enforcement measures are required.'

We are currently working on a draft document addressing the monitoring an enforcement of Travel Plans and MBC are likely to be consulted initially through the KPOG channel.

b) Responses from Sustainable Transport Team, Mobility Management Team Leader

I've added some comments to the document, which I hope are helpful and pertinent.

Overall comment:

It would be nice to see greater emphasis/priority given to active travel supported by the reported Benefit Cost Ratio's etc. I've just come back from Bruges and while it is much flatter, there is still no reason why Maidstone could not become as cycling and pedestrian friendly. It would be much cheaper than implementing loads of measures to improve traffic flows

c) Responses from Climate Change team

1. Measure contacts- I don't think there needs to be any KCC contact for this measures 10 & 31. The KCC contact for measures 24 should be Graham Tanner (you already have him as the contact for other measures), but there needs to be a MBC co-lead as well.

2. Measure comments- M21, does this refer to electricity, heating, transport, own existing estate, new estate buildings, planning? It seems a bit vague, so I would like to see this better defined so that it can be effectively measured. As the measure is worded at present I'm not sure what evidence could be best collated to support the action. Also, when it comes to purchasing energy for our own buildings, KCC made the decision to focus on energy efficiency rather than green tariffs. I understand that many councils have managed to lower their carbon emissions by switching to green tariffs, rather than actually reducing their energy consumption. So perhaps the meaning/purpose of this measure should be refined to ensure that energy efficiency is the priority, rather than energy generation.- M26; 'promote' and 'support' are very

qualitative actions so it may prove difficult to provide anything but circumstantial evidence. It might be more appropriate to establish a baseline and then seek to improve.

d) Response from Kent Highways Services:

Updated our records on relevant contact.

4. Maidstone Borough Council Councillors and Officers

Environment and Transport Overview & Scrutiny 20th April 2010:

At the end of the meeting several proposals were made and these have (where possible) been incorporated:

a) The Committee endorsed the report in principle but agreed that:

i) The wording of the actions be strengthened; and
ii. A simplified report be produced to support the public consultation;

b) The Council continues to lobby Kent Highways Services for the development of the South East Maidstone Strategic Link Road; and

c) The Council invest in Park and Ride in conjunction with Kent County Council and the feasibility of a Park and Ride facility south of Maidstone be explored.

Responses from Spatial Planning:

Spatial Planning amended the policy section in light of recent changes in planning policy.

Responses from Environmental Management Officer & Private Sector Housing

M13 – In terms of the Strategy to be developed – is it ok if this is just something that is covered in the new 'Climate Change Framework' and forms part of this – as opposed to something completely new?
M21 – All ok
M22 – In terms of the Green Procurement Strategy that needs to be written – could it be written as a new chapter / amendment to the current procurement strategy where this is probably covered in some respect?
M23 – All ok
M24 – I cannot be the contact for this I'm afraid. I have been told by my manager that I do not have space for this within my workload at the moment and although I would like to remain involved in the process through the links with Climate Change etc, I would be unable to be the main contact. Also, in terms of the contact for KCC – would this be better off being Graham Tanner?
M25 – All ok
M26 – All ok
M30 – All ok

Transport Policy Officer

No comments at this stage.

5. Primary Care Trusts

Responses from PCT – Responded via Steering group. No comments via formal consultation.

6. Neighbouring local authorities – All Kent Authorities

Response from Ashford only.

1.1 para 3 reads; "Maidstone is subject to significant to in and out …."
Is there a bit missing?

As part of the Maidstone hub transport strategy, I am sure you will already be considering the bridge gyratory. The 2 box junctions are never / rarely adhered to (one by the mobile AQ monitoring station and the other at the cross over from the bottom of the high street / Bishops Way). I am sure you are already considering asking KCC traffic management to put penalty cameras on these junctions and lights here. This has worked extremely well in Oxford City centre where drivers almost never sit across box junctions / jump lights as they all have penalty cameras, with a resultant much improved peak time traffic flow and improved town centre AQ results.

7. Local residents within and bordering the AQMA

We had a small response (12) from local residence through the leaflet and questionnaire/ online survey that was carried out between June and September. The example leaflets and questionnaire can be seen in appendix 4. A summary of the findings are listed below.

Summary answer to 1. We would like to know how good you think the air is in Maidstone

36.3% of public responses believe that air quality is poor all over the Borough, which is not true
91% of public correctly identify traffic as the key source for the Borough

Summary of 2. Is the quality of the air you breathe important to you -

91% said yes

Summary 3: Do you think we should try and reduce

a) the number of vehicles on the road – yes - 72.7%, no – 18%
b) Lorries & heavy vehicles on the road – 91%, no – 9%
c) Older more polluting vehicles – yes - 72.2%, no – 18%

Summary of 4:Here are the actions we want to take please list 1-3 order of priority (ranked 1 – 10 points, 2 = 5 points, 3 = 2 points)

The public chose:

1) Reduce peak-hour traffic flows (30)
2) Reduce traffic congestion in the town centre (27)
3) Improve co-ordination of road works (25)

A close Joint 4th

4) Improve freight distribution in Maidstone (22)
4) Promote uptake of public transport through smart ticketing (pay as your travel) and discount passes (22)

5) Improve and increase tree planting. (17)

Very little support for other measures (10 or less)

Example comments:

"Maidstone is extremely pedestrian unfriendly with a discourse of motorised ownership inherently established"

"make park and ride drivers turn their engines off whilst waiting"

"It is not just the town centres/motorways, that suffer high levels of pollution. Some minor roads suffer the same or higher levels, especially in rush hour"

"You have not mentioned the lack of good transport links to/from Maidstone. This is crucial if you wish commuters to leave their cars at home and not drive"

"I live in Downswood and the cost of the number 8 bus is prohibitive compared to the 501 Park and Ride service but this is hard to get to with young children! Can we have better bus pricing please to make this a more affordable option, perhaps especially in the run-up to Christmas?"

8. Relevant local businesses, community groups and forums

Responses from community groups and local businesses were gathered during the workshop for the Health impact assessment, carried out on 23rd February 2010 Details of these can be seen in the appended HIA report (appendix 3)

9. Other relevant local stakeholders

No response from Natural England.

No response from Environment Agency

Appendix 3 - Health Impact Assessment

Executive Summary:

The Health Impact Assessment of the measures contained within the Maidstone Town Air Quality Management area show that without exception, all measures will have health benefits and most need vigilance to ensure ootential negative impacts are not overlooked as measures are implemented. It shows that the Action Plan will provide support to the Council's aim of achieving environmental excellence

Appendix 4 – Public Consultation Leaflets and Questionnaire

Maidstone
Our Air...Our Health...
Our Future...

www.maidstone.gov.uk

MAIDSTONE
Borough Council

The quality of our air affects everyone... ourselves, our children and their future. It is important that we think about our actions and the impact they have upon the environment. Using our car a little less, car sharing, using public transport and staggering our journeys can help improve the air we breathe enormously.

Improving Air Quality

The Maidstone Town urban area, including a section of the M20 motorway has been declared an Air Quality Management Area. This means the quality of the air in some parts of this area does not reach the recommended government targets; the major pollutant being exhaust fumes from lorries, buses, vans and cars.

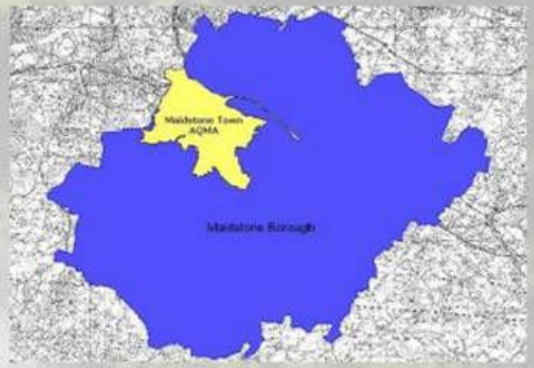
To improve air quality in this area Maidstone Borough Council has devised an Air Quality Action Plan. We want to know what you think about our plan.

Maidstone's Air Quality Action Plan

Our Air Quality Action Plan sets out a number of realistic actions to reduce pollution. These include:

- Raising awareness generally of air quality issues;
- Promoting walking and cycling;
- Encouraging people to make more use of public transport; and
- Reducing traffic and tackling congestion issues.

Map Showing Maidstone Borough and the Air Quality Management Area (in yellow)



YOU can help by...

- Filling in our survey form and telling us what you think about our plans and what actions are most important to you (the closing date for this is Friday 3rd September 2010);
- Telling us about any further actions we could take;
- Working together to make a difference to air quality; and
- Trying to make small changes to your lifestyle to reduce car use.

We are planning an education programme that we can take into primary schools to tell students about air quality and the actions they and their parents can take to improve air quality.

If you would like more information or to volunteer to help us spread the word about improving air quality, please give us your contact details on the survey form or email pollution@maidstone.gov.uk

A summary and full copy of the Air Quality Action Plan can be found on our website www.maidstone.gov.uk

If you would like this publication in another community language or in an alternative format such as large print, Braille or audio, please telephone 01622 602351.

Please recycle this publication when you have finished with it.

We would like you to consider our plans to improve air quality in Maidstone and tell us what you think.

Your opinion matters, thank you for taking the time to complete this questionnaire.

1. We would like to know how good you think the air is in Maidstone. Please tick which statement you agree with most?

	Agree 1					Disagree 6
Statement	1	2	3	4	5	6
The air quality in Maidstone is poor all over the borough.						
There is poor air quality in some places in the town and around the M20/ major roads.						
Most of the poor air quality in Maidstone is due to traffic, particularly lorries and heavy vehicles						
Air quality would improve if we tried to use our cars less often or changed our cars for less polluting alternatives, such as an electric or hybrid model.						

2. Is the quality of the air you breathe important to you?

Yes ☐ No ☐ No opinion ☐

3. Do you think we should try to reduce:

- The number of vehicles on the road? Yes ☐ No ☐ Unsure ☐
- Lorries & heavy vehicles on the road? Yes ☐ No ☐ Unsure ☐
- Older, more polluting vehicles? Yes ☐ No ☐ Unsure ☐

4. Here are the actions we want to take, please tick the 3 most important to you in order of priority, ie. 1, 2 and 3.

- ☐ Reduce peak-hour traffic flows
- ☐ Reduce traffic congestion in the town centre
- ☐ Improve coordination of road works
- ☐ Improve road infrastructure
- ☐ Improve traffic management on the M20
- ☐ Improve freight distribution in Maidstone
- ☐ Improve emissions from buses & taxis in Maidstone
- ☐ Improve the Council fleet (newer and cleaner vehicles)
- ☐ Undertake emissions testing for vehicles at the roadside to remove polluting vehicles
- ☐ Promote the uptake of public transport through smart ticketing (pay as you travel) and discount passes
- ☐ Promote walking and cycling
- ☐ Require all commercial developments and schools to implement travel plans
- ☐ Inspection of industries for compliance with emissions
- ☐ Reduce burning of commercial and domestic waste
- ☐ Improve and increase tree planting
- ☐ Educate communities about air quality issues
- ☐ Provide the public with regular and easy to understand information about air quality