Contents

Greater Manchester Air Quality Action Plan

- Raising Awareness of Air Quality Issues
- Action through Building Design and Land Use Planning
- Energy Efficiency
- Emissions Inventory Development
- Action by Other Organisations
- Action Plan Table
- Table 4.3 – Proposed Actions

Chapter 5 – Monitoring and Evaluation

- Introduction
- Air Quality Review and Assessment
- Air Quality Monitoring in Greater Manchester
- Air Pollution Emissions: EMIGMA (Emissions inventory for Greater Manchester and Warrington)
- Monitoring Road Traffic Targets and Indicators
- Monitoring Industrial Emissions
- Monitoring Domestic Emissions
- Monitoring and Reviewing the Action Plan

Glossary

Background Documents

Part 2

Local Annexes (Appendix A1 –A10)

- Introduction to the Area
- Summary of Review and Assessment Results – Location of AQMA and Extent of the problem
- Strategic Context Related to Air Quality
- Sources of Pollution in the Area
- What is Being Done Already
- What Options are to be Introduced Locally
- What Options Require Partnership/Action by Others
- local consultation
- A local Action Plan for the Local Authority

Appendix A11

- Detailed Assessment for Each of the Proposed Actions in this Plan
- Actions Not Currently Included in the Action Plan

Executive Summary
The Greater Manchester Air Quality Action Plan

Local Air Quality Management

Greater Manchester, with a population of almost 2.5 million people, is one of the largest conurbations in the country. The 10 member authorities, Bolton, Bury, Manchester, Oldham, Rochdale, Salford, Stockport, Tameside, Trafford and Wigan recognise that a joint approach to dealing with air quality in such a large conurbation is the best environmental option.

The Local Authorities have cooperated in the production of their individual review and assessments of air quality, each of which showed that without any action to control air quality, exceedences of the annual average nitrogen dioxide objective and, to a lesser extent, the daily particulate objective are likely in many urban areas across Greater Manchester.

Accordingly authorities have co-ordinated the declaration of AQMAs within their districts. The AQMAs reflect the highly built up areas of the conurbation and the major transport contribution to the elevated levels of air pollution. A study into the sources and concentrations of the pollution showed that for the nitrogen dioxide annual mean objective to be met by 2005, total nitrogen oxide emissions would need to be reduced by about 30% in town centres and central urban locations across the conurbation.

The Greater Manchester Air Quality Action Plan

The 10 Greater Manchester Authorities have worked together to produce an Air Quality Action Plan, which covers the whole of Greater Manchester and details the measures that will be taken across the area and summarises how the Plan will be evaluated. It is accompanied by related annexes for each of the 10 district authorities providing a more detailed, local focus to the wider actions and strategies. Annual 'action programmes' and progress reports on the Action Plan will be key to the success of the Plan.

Consultation and Participation

The views of a wide range of people have been sought throughout the preparation of the Action Plan. Consultation began with an information leaflet and questionnaire entitled 'Clearing the Air' circulated in November 2000; followed by a Focus Group with interested organisations in December 2001 and 'Transport Matters' Newsletters in May 2002 and in November 2003 as the Plan progressed. Comment on the final draft has also been sought from Defra. Views have in general been supportive of the action and have included comments and suggestions for actions which have been considered as part of the preparation of the Plan.

Monitoring and Evaluation

The primary objective of the Action Plan is to improve air quality to meet the Government's health related standards by 2005. Changes in air quality within Greater Manchester will be measured directly at monitoring stations throughout the area. Data will be analysed and published as part of the ongoing annual Air Quality Progress Reports to Defra.

Progress in implementing the Action Plan will also be assessed by reviewing to what extent planned measures and actions have been implemeneted using key indicators for each 'action area' from within the Plan.

Implementing the Plan

The Plan is closely linked to other Greater Manchester plans, particularly the Greater Manchester Local Transport Plan (GMLTP), community and environmental plans including Local Agenda 21, development planning and energy conservation. This integrated approach founded upon partnership working between member authorities and between the relevant professional disciplines including environmental health, planning and transport engineers is seen as essential to the implementation of an effective Plan.

The Greater Manchester Authorities are working with other agencies that also have a role to play in achieving better air quality. These include, the Highways Agency, which is responsible for the Motorway and Trunk Road network, the Environment Agency which has responsibilities for emissions from certain large industrial processes and Manchester Airport.

The Air Quality Action Plan sets out in more detail the measures that are to be introduced by the 10 Greater Manchester Authorities and GMPTE to improve air quality.

Many of these measures are taking place through existing plans and strategies, in particular the GMLTP. The actions set out in the Plan are predicted to improve air quality and make activities in the area more sustainable. They include:

- **Promoting the use of Public Transport**
- **Cleaning up bus emissions**
- **Encouraging walking and cycling**
- **Travel Plans**
- **Goods vehicle emission and routing efficiency through Freight Quality Partnerships**
- **Traffic management and traffic calming**
- **Improved Energy Efficiency**
- **Enforcement of Pollution Control Legislation**
- **Roadside Emissions Testing**
- **Feasibility study into Low Emission Zones**
- **Reviewing the Regulation of Taxi Exhaust Emissions**
- **Air Quality Guidance for Developers**
- **Actions by other Organisations**

The Way Forward

The Greater Manchester Authorities are fully committed to meeting the Government's health objectives and intend to continue their joint working on the identified range of air quality improvements needed to deliver those targets.

The success of the Plan will be founded upon:

Development of a fully integrated public transport system, including a major expansion of Metrolink, which provides people with alternatives to the private car

Demonstrating the value and tangible benefits of cleaner air in order to gain the active support of people who live and work in, or visit the Manchester area, recognising that everyone needs to participate in a successful Air Quality Action Plan

Implementation of the Action Plan through targeted actions whose costs and benefits have been evaluated and are appropriate to the wider needs of the Greater Manchester.

Integration of the air quality improvements into the wider context of safe, healthy and sustainable urban communities within the Manchester area.

Co-operative working with relevant third parties, such as the Highways Agency in relation to the motorway network, to deliver air quality improvement related to national policy issues, which are largely outside the control of the Greater Manchester Authorities.

Chapter 1
The Background to the Greater Manchester Air Quality Action Plan

The Greater Manchester Area

1.1 Greater Manchester is one of the largest conurbations in the Country, with a total population of almost 2.5 million. Historically employment in the area was based around heavy industry, particularly cotton and engineering works. Following the decline of traditional industry in the area, a significant amount of effort is being made to regenerate run down areas.

1.2 Much of the area is urban, with thriving residential, industrial and commercial areas. There are however substantial green spaces, including large parks and countryside. The transport network serving the area includes a number of motorways such as the M60, M6, M56, M61 and M62. Manchester Airport is located in the south of the conurbation, and is the third busiest airport in the country.

1.3 The ten Greater Manchester authorities of Bolton, Bury, Manchester, Oldham, Rochdale, Salford, Stockport, Tameside, Trafford and Wigan have all been involved in the production of this plan

National Air Quality Strategy

1.4 In 1997 a National Air Quality Strategy for the UK was published. This set out the Government's proposals for improving and protecting ambient air quality and set out health-based standards for eight pollutants.

Table 1.1: Summary of the Air Quality Objectives

Substance	Air Quality Objective Levels	Date by which objective to be achieved
Benzene	16.25 micrograms per cubic metre or less when, expressed as running annual mean	31 December 2003
1,3 – Butadiene	2.25 micrograms per cubic metre or less, when expressed as a running annual mean	31 December 2003
Carbon Monoxide [#]	10 milligrams per cubic metre or less, when expressed as a running 8 hour mean	31 December 2003
Lead	0.5 micrograms per cubic metre or less, when expressed as an annual mean	31 December 2004
	0.25 micrograms per cubic metre or less, when expressed as an annual mean	31 December 2008
Nitrogen dioxide	200 micrograms per cubic metre or less, when expressed as an hourly mean, not to be exceeded more than 18 times a year	31 December 2005
	40 micrograms per cubic metre or less, when expressed as an annual mean	31 December 2005
PM_{10} [#] (Fine particles)	50 micrograms per cubic metre or less, when expressed as a 24 hour mean, not to be exceeded more than 35 times a year	31 December 2004
	40 micrograms per cubic metre or less, when expressed as an annual mean	31 December 2004
Sulphur dioxide	266 micrograms per cubic metre or less, when expressed as a 15 minute mean, not to be exceeded more than 35 times a year	31 December 2005
	350 micrograms per cubic metre or less, when expressed as an hourly mean, not to be exceeded more than 24 times a year	31 December 2004
	125 micrograms per cubic metre or less, when expressed as a 24 hour mean, not to be exceeded more than 3 times a year	31 December 2004

[#] - The objectives for PM_{10} and Carbon Monoxide are currently under review.

1.5 In 1999 the National Air Quality Strategy was amended, taking into account directives from the European Union on Air Quality. New Air Quality Regulations were made which set out objectives for seven pollutants that all local authorities must meet in their areas. These are set out in Table 1.1. The eighth pollutant, ozone, was not included in the regulations because of its transboundary nature. The requirement to achieve the ozone objective remains with the Government.

Health Effects of Poor Air Quality

1.6 High levels of air pollution are known to affect health and the environment. The elderly and the very young, especially those with pre-existing medical conditions such as heart disease, bronchitis, asthma and other types of lung disease are most at risk of suffering adverse health effects from poor air quality. Very high concentrations of some pollutants are associated with the development of cancer, including leukaemia and lung cancer, although the effect of air pollution is very small in comparison with other risk factors such as smoking. Summaries of the health effects associated with different pollutants are shown in Table 1.2.

1.7 The air quality objectives have been set at a level to safeguard the health of the population. The health effects shown in the Table are only likely to occur at very much higher levels than those found in the air we breathe. Nitrogen dioxide and fine particles have been identified as the only pollutants where the air quality objectives may not be met (See Figure 2.2).

Table 1.2: Health effects of the pollutants in the Air Quality Regulations

Pollutant	Main Sources	Health Effects
Benzene	Petrol vehicles	Carcinogenic, in particular associated with development of leukaemia.
1, 3 Butadiene	Road transport	Carcinogenic linked to bone marrow cancer, lymphomas and leukaemia.
Carbon monoxide	Petrol vehicles and industry	Interferes with transport of oxygen around the body. Affects the heart and brain.
Lead	Industry	Causes brain impairment in young children.
Nitrogen dioxide	Road transport and power generation	Linked to respiratory problems e.g. altered lung function, increased prevalence of respiratory illness.
Particles (PM10)	Road transport, power generation and industry	Associated with respiratory problems e.g. coughs, colds, shortness of breath and bronchitis. PM_{10} is made up of many substances, some of which may increase the risk of developing cancer.
Sulphur dioxide	Power generation and industry	Linked to respiratory problems, people with asthma are most at risk.

Local Air Quality Management

1.8 Local Authorities were given the following responsibilities, under the Environment Act 1995, for Air Quality Management:

- *Review and Assessment of Air Quality.*
  Local Councils must review and assess air quality in their area, to determine whether the air quality objectives will be met. Review and Assessment results for the Greater Manchester authorities are summarised in Chapter 2.

- *Designation of Air Quality Management Areas (AQMAs)*
  If the air quality Review and Assessment reveals that one or more of the air quality objectives is unlikely to be met on time the Council must declare an Air Quality Management Area (AQMA) covering the part (or parts) of the city/borough where the objectives may not be met.

- *Further Review and Assessment of Air Quality*
  Local authorities that have declared AQMAs are also required to carry out a 'Stage 4' Review and Assessment to determine whether the assumptions made in the earlier Review and Assessments were correct and to identify which sources contribute to exceedances of the objectives. A further detailed air quality assessment, for all the pollutants covered by the air quality objectives, will need to be produced by April 2004.

- *Development of an Action Plan*
  Once an AQMA has been declared the Council must develop an Action Plan, which sets out how the air quality objectives will be met. The Action Plan should describe the policies and powers the Council intends to develop and utilise in pursuit of the air quality objectives. All the Greater Manchester authorities have declared AQMAs.

1.9 Many important actions needed to improve air quality are outside the Councils control. In these circumstances the Council has to make it clear that their powers are limited and that compliance with the air quality objectives is reliant on action by other agencies and individuals.

The Greater Manchester Air Quality Strategy

1.10 In Greater Manchester, a regional approach to dealing with air pollution has been adopted, recognising that the sources of pollution do not respect political boundaries.

1.11 A Greater Manchester Air Quality Strategy, 'Clearing the Air', was produced in 1997 setting out the framework for improving air quality in the region. It links air quality to planning, transport, sustainability and environmental health functions.

1.12 It was identified that there would be benefits from the authorities in Greater Manchester working together on some aspects of the air quality Review and Assessment. The authorities have worked with ***aric*** and the Greater Manchester Transportation Unit (GMTU) to annually update the emissions inventory for Greater Manchester (EMIGMA) originally prepared by consultants on behalf of the Government. In addition joint bids have been successfully made

to DEFRA for Supplementary Credit Approval funding to carry out atmospheric dispersion modelling to predict ground level pollution concentrations.

European and National Policies to Reduce Pollution

1.13 There are a number of European and National policies that are expected to contribute to improving air quality over the next few years. These include tighter emission standards for new vehicles and additional controls over certain industrial processes. Some of the relevant policies are summarised below.

Table 1.3: European and national policies to reduce pollution

Policy	Summary
Air Quality Framework and Daughter Directives	The Framework Directive establishes the principle that the European Union can set limit values for specified pollutants. The Daughter Directives set out what those limit values are.
Auto Oil programme	All new vehicles must comply with stringent emission standards. There are also controls over fuel quality, which also reduce emissions.
Acidification strategy	This is a strategy which aims to reduce areas at risk of acid rain by reducing emissions of SO_2, NO_x, and ammonia. It consists of: • A Directive which limits the sulphur content of liquid fuels. • Emission limits for new large combustion plant and a national limit for total SO_2 emissions from existing plant.
EC Solvents Directive	This aims to reduce emissions of volatile organic compounds from certain industrial installations.
Integrated Pollution Prevention and Control Directive	This limits emissions from certain industrial installations, requiring them to take steps to ensure that EC objectives are met. Many of these processes are already controlled under national legislation (Environmental Protection Act 1990).
UNECE convention on long range transboundary air pollution	This aims to reduce the impact of transboundary pollution from one country to another by requiring emission reductions. It covers heavy metals, including cadmium, lead and mercury as well as some of the pollutants with objectives in the national air quality strategy.
Planning framework	The land use planning system and the transport framework are expected to have regard to the national air quality strategy.

1.14 Although air quality is expected to improve as a result of these initiatives, local action will also be necessary to reduce pollution in Greater Manchester to meet the levels set in the Governments air quality objectives.

Links to other Greater Manchester Plans and Strategies

1.15 The Greater Manchester Air Quality Steering Group was set up in 1996. The group is made up of senior local government officers from a variety of different professions representing each of the 10 Greater Manchester Authorities. It was this group that was responsible for the Greater Manchester Air Quality Strategy described previously. Ensuring

that air quality is fully integrated into other strategies and that these strategies also complement the air quality initiatives is a key objective of the Group.

1.16 By means of this multi-disciplinary approach the Air Quality Action Plan is clearly linked to other important areas of work including the Local Transport Plan, development planning, energy conservation, community plans and environmental strategies such as Local Agenda 21 plans. Some of the key strategies and policies are given below:

Greater Manchester Strategy

1.17 The Association of Greater Manchester Authorities (AGMA) has produced a draft strategy for Greater Manchester. It sets out the key issues, which AGMA believes, need to be addressed in order for Greater Manchester to become:

- A world class city region at the heart of a thriving North West, capable of successfully competing internationally for investment, jobs and visitors; and
- A vibrant, safe and healthy environment in which to live work and earn, in a cohesive manner which enables people of all ages, communities and cultural backgrounds to reach their full potential.

Corporate Plans

1.18 A corporate plan has been produced by each of the GM authorities. The plans set out what each Council's core values and corporate priorities are over the coming years.

1.19 The content of the corporate plans varies between authorities but each recognises the importance of sustainability and improving the environment, aims which link directly to the Air Quality Action Plan.

Community Strategies

1.20 Community strategies are produced by local strategic partnerships made up of representatives from a variety of organisations within each Borough. They represent the communities' aspirations for the borough. The Air Quality Action Plan is consistent with the objectives of improving the quality of life and producing a healthier environment.

Local Transport Plan

1.21 The Greater Manchester Local Transport Plan (LTP) is a five year strategy which sets out how the transport network will be improved in the period up to 2005/6. Improving air quality is one of the key objectives of the LTP. A number of strategies have been developed through the LTP to encourage and improve public transport, cycling and walking. Chapter 4 contains more information on the programmes within the LTP that are expected to contribute to improving air quality.

Unitary Development Plans and Development Control

1.22 Each of the 10 GM authorities has a Unitary Development Plan (UDP) that establishes policies that guide the general location of development in the Borough and ensure that such development does not adversely affect its surroundings.

1.23 The impact of air quality on or by new development is a material consideration and is therefore taken into account in the planning system.

Home Energy Conservation Act (HECA) 1995

1.24 The Greater Manchester Authorities are all producing HECA Strategies, these aim to improve the energy efficiency of the residential properties in their area. Improving energy efficiency reduces the need to burn fuel, thus reducing domestic emissions.

Regeneration Initiatives

1.25 The Greater Manchester authorities are committed to the regeneration of run down areas and creating opportunities for economic growth. Many of the designated Air Quality Management Areas lie within the poorer areas of the conurbation targeted for regeneration. This often means development takes place within AQMAs. However, regeneration initiatives give the Greater Manchester authorities the opportunity to improve the wider environment and provide sites for employment.

Local Agenda 21 / Environment Strategies

1.26 The sustainable development principles introduced through Local Agenda 21 have, in most authorities, now been incorporated into other plans, such as Community Strategies. Many of the actions contained in this Plan have strong links to sustainable development and are also expected to improve the wider environment.

The Greater Manchester Air Quality Action Plan

1.27 This Action Plan is made up of two parts. The first part details the actions that will be taken across the Greater Manchester area and summarises how the Plan will be evaluated. Each of the 10 Greater Manchester authorities have also produced a local annex setting out what they intend to do within their own area. These can be found in the second part of the plan, along with Appendix A11, which assesses the proposed actions in more detail and describes why some actions that were identified during the consultation programme are not currently included in the Plan.

1.28 A draft report was produced during the summer of 2003. This final Action Plan has been produced to take into account comments on the draft report made by Defra and others during the consultation period up to the end of December 2003. More information on the consultation that has been carried out is available in Chapter 3.

1.29 The air quality objectives have target years of 2004/05, however some of the actions contained in the Plan will not be completed until after the relevant dates. Large capital projects, such as Metrolink, will take several years to plan and build and cannot be introduced

in the short term. They will not therefore contribute to meeting the objectives in the initial target years.

1.30 There are, however, a number of planned actions that have been introduced before 2004/05, including the introduction of a comprehensive 'Cleaner Vehicles Campaign'. The Greater Manchester authorities believe that the combination of actions set out in this plan, in conjunction with the national initiatives, will significantly improve air quality in the area.

1.31 In undertaking the development of this Plan across the 10 Greater Manchester Authorities it has become evident that there are a series of additional considerations which influence the decision making process over those Plans developed by single Local Authorities. In particular there is a clear need to seek commitment across the conurbation to ensure that politicians are consulted locally and across the wider area, through the Association of Greater Manchester Authorities. Their agreement has been sought to allow for the effective development of the Plan. This has resulted in delays in producing the final Plan and will inevitably result in the need for longer timescales in delivery of the Plan. It is understood that Greater Manchester has produced the only joint Action Plan and it is felt that the benefit from considering cross boundary issues in this way is essential for its effective implementation.

Aims and Objectives of the Action Plan

1.32 The main aim of the Action Plan is clearly to deliver improved air quality across Greater Manchester, and in particular those locations which have been designated as Air Quality Management Areas. In order to achieve this the Action Plan has the following aims and objectives:

- To ensure that air quality is integrated into other local authority plans, strategies and activities;
- To develop closer relationships with organisations that can help deliver improved air quality;
- To identify new partners that can work with the Greater Manchester authorities to improve air quality;
- To raise awareness of air quality issues amongst the population of Greater Manchester; and
- To encourage individuals to recognise that they can make choices which can lead to improved air quality.

Delivering the Action Plan

1.33 The report focuses on the actions that the Greater Manchester authorities and the Greater Manchester Passenger Transport Executive/Authority are already taking, and intend to take in the future, to improve air quality. It considers in detail those actions that the Greater Manchester authorities can implement or influence directly.

1.34 The Greater Manchester authorities have been working with other agencies that also have a role to play in achieving improved air quality. In particular a significant amount of pollution is created by vehicles travelling on motorways in the area. The Highways Agency has control over motorways and the air quality objectives may not be met without action to deal with emissions from traffic on the motorway network.

1.35 The Environment Agency has responsibility for emissions from certain larger industrial processes. The Greater Manchester authorities are therefore working with the Environment Agency to ensure that emissions from new or existing processes do not lead to exceedances of the air quality objectives.

1.36 Manchester Airport has also contributed to the Air Quality Action Plan. The Airport already does a lot of work to try to reduce the impact it has on air quality, this includes encouraging more people to travel to the Airport by public transport and reducing pollution from Airport activities.

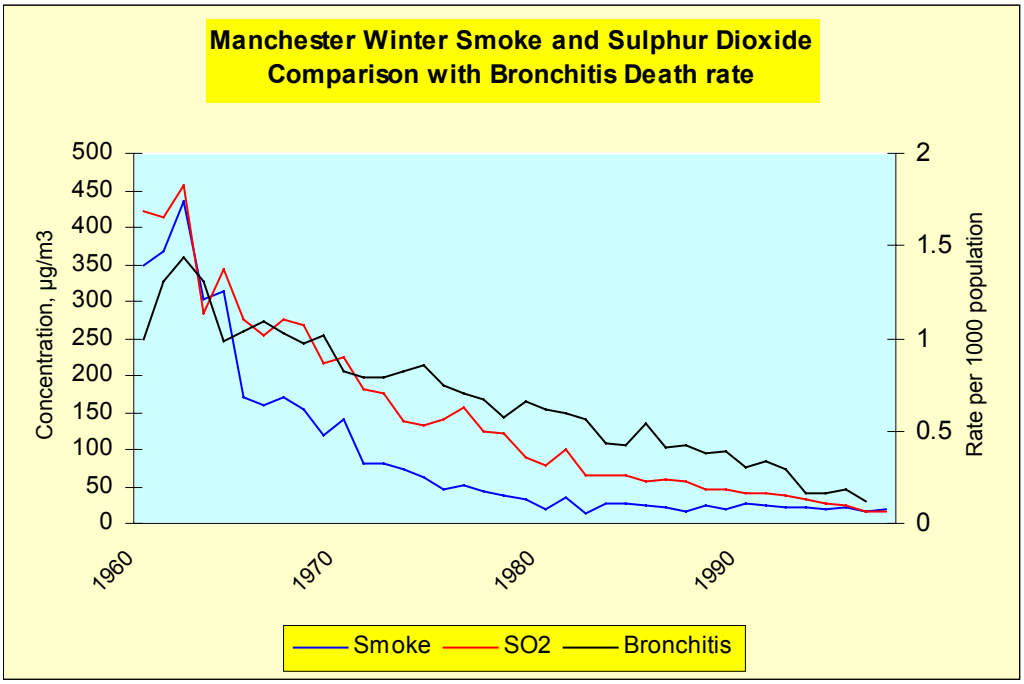
1.37 The Greater Manchester authorities believe that the Government continues to have an important role to play in ensuring that air quality continues to improve. In particular the Greater Manchester authorities would like the Government to do more to tackle traffic growth and develop more sustainable transport policies, including controlling emissions from Heavy Goods Vehicles.

Chapter 2
Pollution Sources in Greater Manchester

Air Pollution in Greater Manchester

2.1 Over the last 40 years significant progress has already been made to improve air quality in Greater Manchester. In particular the introduction of Smoke Control Areas and the trend away from domestic coal/wood burning has significantly reduced levels of smoke and sulphur dioxide in the area. Figure 2.1 shows how levels of smoke and sulphur dioxide have fallen in Manchester since 1960 and compares these figures with the death rate from bronchitis. It can be seen that the bronchitis death rate closely follows the trend of reducing smoke and sulphur dioxide, particularly during the 1960s and 70s.

Figure 2.1: Comparison of winter smoke and sulphur dioxide concentrations with bronchitis death rate in Manchester

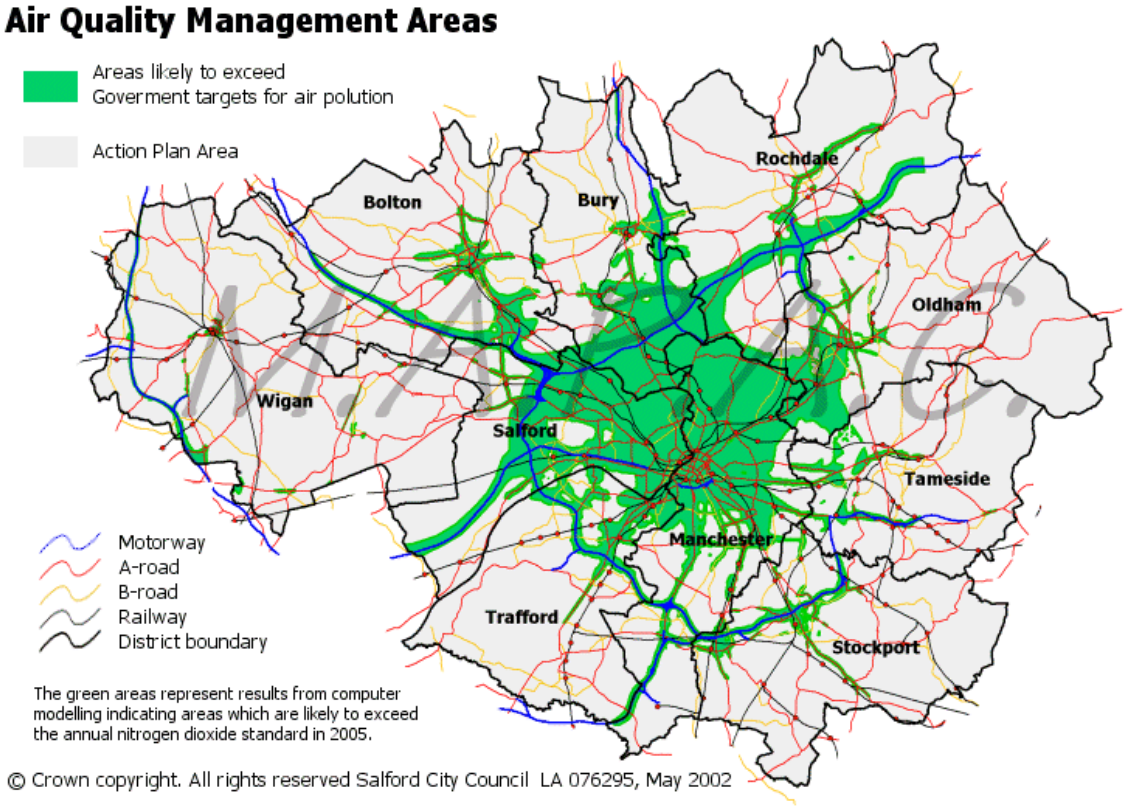


2.2 Local Councils have all recently completed their first detailed Review and Assessment of air quality in their areas. This work demonstrated that without any action there would be a widespread exceedance of the annual average nitrogen dioxide objective across the Greater Manchester conurbation. The objective is predicted to be exceeded in busy urban centres and close to the major routes of the highway network.

2.3 The daily particulate objective is also predicted to be exceeded, but on a much smaller scale. Exceedances are expected at busy road junctions and along routes with high congestion levels.

2.4 Air Quality Management Areas (AQMAs) have been declared which cover the areas in Greater Manchester where the air quality objectives are unlikely to be achieved. These are shown in Figure 2.2. The major highway routes, including motorways, can clearly be seen on the map as areas where the air quality objectives are not expected to be met.

Figure 2.2: Air Quality Management Areas in Greater Manchester



2.5 Domestic sources now contribute towards a much smaller proportion of pollution emissions in the area. The challenge facing Councils, communities, businesses and other organisations in Greater Manchester is tackling pollution from other sources. A lot of work has gone into identifying what the major pollution sources are across Greater Manchester, so that the action plan can be targeted towards these areas. This 'source apportionment' work helps to focus actions and provide a cost-effective approach to improving air quality.

Emissions of Pollution in Greater Manchester

2.6 Across the whole of the United Kingdom in 1999 approximately 44% of oxides of nitrogen were estimated to come from road transport and approximately 40% from industry, particularly the energy sector (NETCEN 2002).

2.7 Figure 2.3 depicts the percentage of nitrogen oxides (NO_x) and particulate matter that would be emitted from various sources within Greater Manchester in 2005. The highest contributor to emissions of NO_x within Greater Manchester is road traffic (53%) of which 38% of all NO_x emissions are from goods vehicles. Emissions from domestic and industrial sources are also significant (17% each).

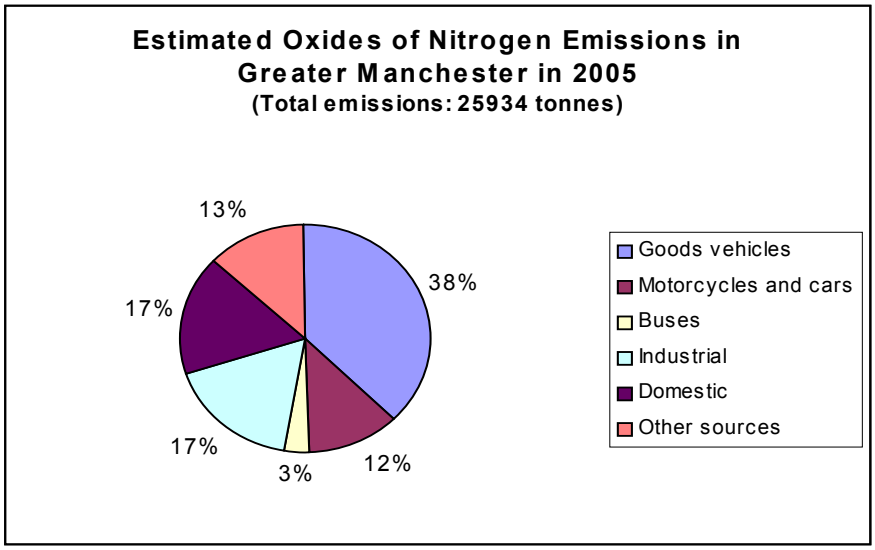
2.8 It is widely predicted that emissions from individual petrol and diesel engines will fall between now and 2005 as vehicle and fuel technologies improve. However, these improvements may be partly offset by the predicted increase in the amount of traffic using the highway network, particularly motorways, by 2005.

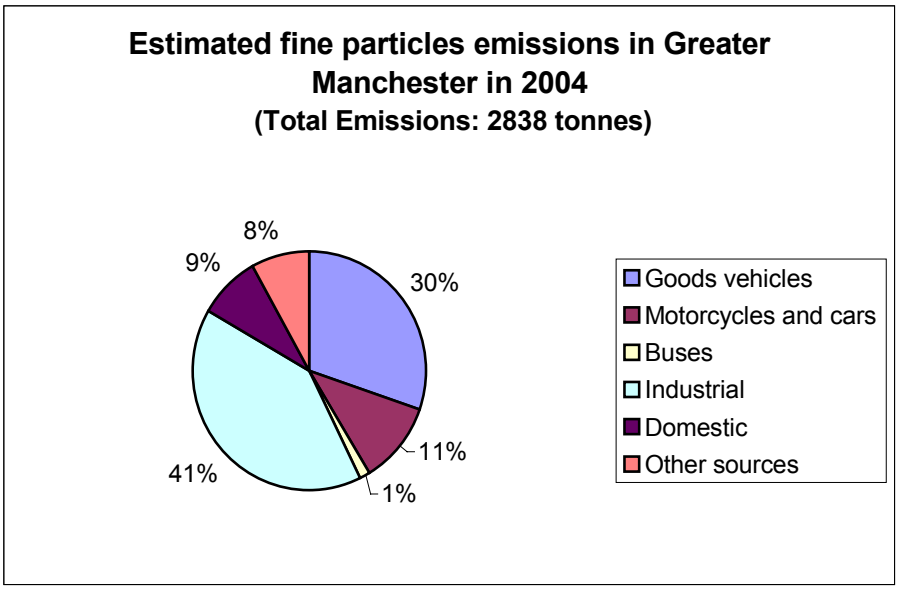
2.9 Emissions from road traffic tend to have their main effect at local level, elevated pollution concentrations are found close to busy roads. They are released at ground level preventing widespread dispersion or dilution. This means that concentrations can build up locally over a period of time. Industrial emissions however tend to be released at a much higher level (typically over 15m). This means that the pollution travels a greater distance from the source and is therefore subject to more dilution before reaching ground level. The relative contribution to ambient air concentrations from industrial sources is likely to be far less localised than that of road traffic sources, even though for certain industrial processes they are released in much higher concentrations.

Source apportionment summary

2.10 Widespread exceedances of the annual nitrogen dioxide objective were identified by each of the Greater Manchester authorities. During 2001/02 source apportionment work was commissioned to determine the relative contribution from each source to the overall total. This was carried out by computer modelling of the emissions across Greater Manchester and prediction of the resulting concentrations in the air. The study determined the relative contribution of each of the major sources to the overall ground level nitrogen dioxide and particulate matter concentrations, taking into account the dispersion of the emissions and 'typical' weather parameters.

Figure 2.3: Emissions of nitrogen oxides and fine particles in Greater Manchester (***aric***, 2002)





2.11 Road and non-road sources were split into 9 categories. The road sources included cars and motorcycles, heavy and light goods vehicles, buses, car journeys under 3km (distances that could easily be walked or cycled), car journeys between 3 and 8km (distances for which public transport such as buses or trams could be used) and car journeys over 8km (longer distances for which public transport such as trains would need to be used). Non-road contributions have been estimated in terms of industrial sources and domestic fuel burning.

2.12 The spatial contribution to annual average NO_x concentration from the various sources is shown in Figures 2.4 to 2.6 at the end of this Chapter. By comparing the individual plots to the total NO_x plot, an indication of the relative contribution of each of the source sections can be ascertained. This has helped the Greater Manchester authorities to identify the emission sources in the areas the Air Quality Action Plan needs to concentrate on.

2.13 Interpretation of the maps shows that goods vehicles contribute the most to ground level pollution across Greater Manchester. Pollution from cars and motorcycles is also a significant source. The major road network, in particular the motorways, are identified as areas where ground level pollution concentrations are highest.

2.14 Whilst emissions from buses contribute to only a small proportion of the total, in some locations buses can contribute to elevated pollution levels. Since improvements to the public transport system are needed to encourage modal shift, it is therefore important that the Action Plan addresses emissions from buses as well as other road traffic.

2.15 Emissions from industrial sources and domestic fuel burning contribute towards a much lower proportion of ground level pollution concentrations than road traffic. Emissions from these sources may not lead to exceedances of the air quality objectives on their own, but in combination with other sources they do contribute to the problem.

Stage 4 Review and Assessment

2.16 The Environment Act 1995 requires that every authority that has declared an Air Quality Management Area must carry out a further Review and Assessment of air quality in their area. This Stage 4 Review and Assessment should be prepared 12 months from the date the authorities' AQMA comes into effect.

2.17 Stage 4 is expected to clearly identify both the degree and extent of predicted exceedances and helps to demonstrate how the individual actions contained within the action plan contribute to reducing the breaches of the objectives.

2.18 Each of the 10 Greater Manchester authorities has completed a Stage 4 assessment. This assessment goes into much more detail about local sources of pollution than the Air Quality Action Plan and includes the source apportionment exercise discussed above. As had been the case throughout the review and assessment process and AQMA designation, the Stage 4 reports were submitted separately to DEFRA by each individual authority.

2.19 A summary of the individual conclusions reached on the degree of exceedance for NOx is presented in table 2.1. (Note that the individual reports expressed this assessment in different ways, and this represents a review based on grouping of receptor locations). Copies of the Stage 4 assessments are available from each local authority, whose contact details can be found on the http://www.mapac.org.uk website.

Table 2.1: Degree of Exceedance of Air Quality Objectives in Greater Manchester

	Percentage reduction in total NOx emissions needed to meet the annual mean nitrogen dioxide Objective (2005)		
	motorway locations	**urban locations / town centres**	**suburban roadside locations**
Bolton		25	17
Bury		27-35	17
Manchester		40-46	17
Oldham		32	10
Rochdale	16-32	6-16	
Salford	50-60		
Stockport		32	16
Tameside		32	10-21
Trafford		16-25	6
Wigan	31	23	13
Average*	40	30	15

* Approximate averages based on worst case (i.e. the highest value were a range is given).

2.20 Across Greater Manchester the following approximate reductions in total NOx emissions are estimated to be required for the nitrogen dioxide annual mean Objective to be met (based on 2005 projected emissions):

- 40% at motorway locations;
- 30% in town centres and central urban locations
- 15% in suburban roadside locations

Note that greater reductions are estimated to be required for compliance at all city centre and motorway receptors in the regional centres of Manchester and Salford.

Updating Screening and Assessment (USA).

2.21 Under the requirements of Part IV of the Environment Act 1995, all local authorities are required to periodically review and assess air quality in their areas. The second phase of this process is currently underway. In the recently revised guidance note LAQM TG(03) DEFRA have indicated that local authorities should take a risk based approach to undertaking all reviews and assessments of air quality. The aim of this approach is to ensure that the amount of work undertaken for each pollutant is proportional to the risk of the objectives for that pollutant being breached. It is therefore recommended that the current and future reviews and assessments be undertaken in two stages as detailed in Table 2.2.

Table 2.2 – Approach to further Review and Assessment

Level of Assessment	Objective	Approach
Updating and screening assessment	To identify those matters that have changed since the last review and assessment, which might lead to a **risk** of an air quality objective being exceeded	Use checklist to identify significant changes that require further consideration. Where such changes are identified, apply simple screening tools to determine if an exceedance of an objective is likely – this warrants a Detailed Assessment
Detailed Assessment	Provide an accurate assessment of **likelihood** of air quality objective being exceeded at locations of relevant exposure. This should be detailed enough to allow the declaration or amendment of an AQMA	Use quality assured monitoring and validated modeling methods to determine current and future pollutant concentrations in areas where risk of exceeding objectives is significant.

2.22 Due to significant changes in the modelling process and the emissions factors used by the Greater Manchester Authorities during the first phase of the review and assessment of air quality, large parts of Greater Manchester will be included in a detailed re-modelling exercise that was already part of an agreed programme of work designed by the ten Greater Manchester Authorities. Any areas identified for detailed modelling by Local Authorities during their USA will also be included in this exercise.

2.23 The results of the detailed modelling exercises are due to be published in the spring of 2004. It is expected that the results of this exercise will lead to the boundaries of air quality management areas being re-drawn.

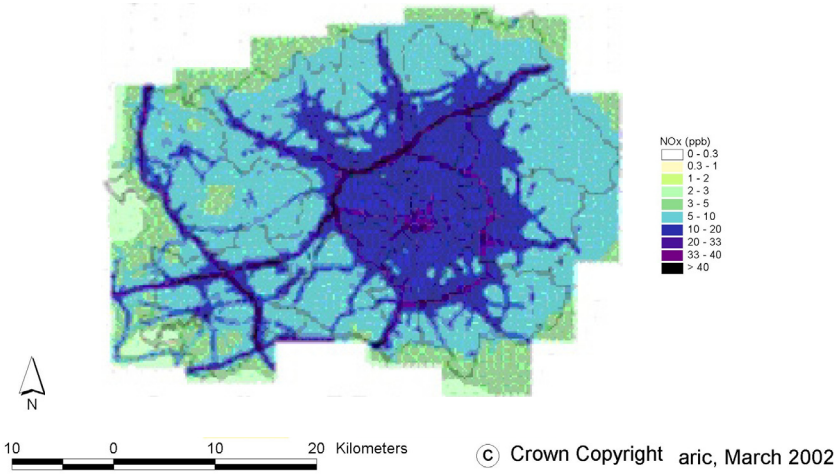
Sources Outside Local Authority Control.

2.24 Pollution from major industrial processes, rail, aviation and motorways is not within Local Authority control. However, through consultation with process operators and regulators some influence can be exerted. In particular the Greater Manchester authorities are working in partnership with the following organisations:

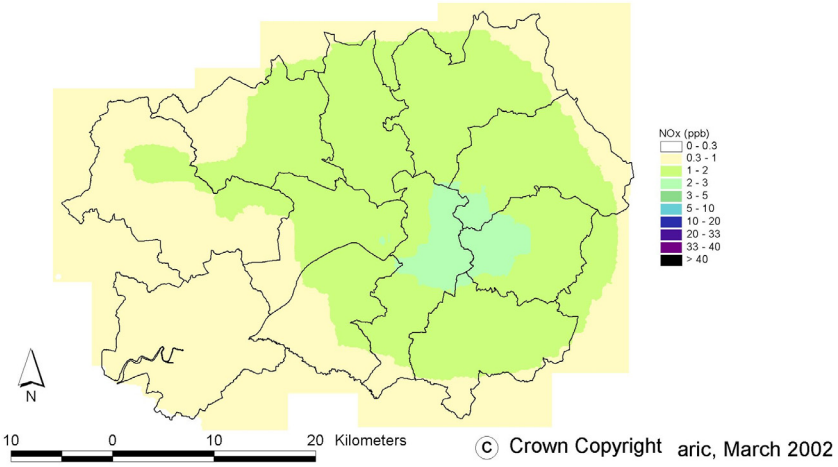
- The Highways Agency to identify ways of reducing the impact of major routes such as motorways;
- The Environment Agency in their control of large Industrial Processes; and
- Manchester Airport in their commitment to increasing the use of public transport for Airport related journeys and reducing pollution from other airport related activities wherever possible.

Figure 2.4: Predicted ambient oxides of nitrogen sources in Greater Manchester 2005.

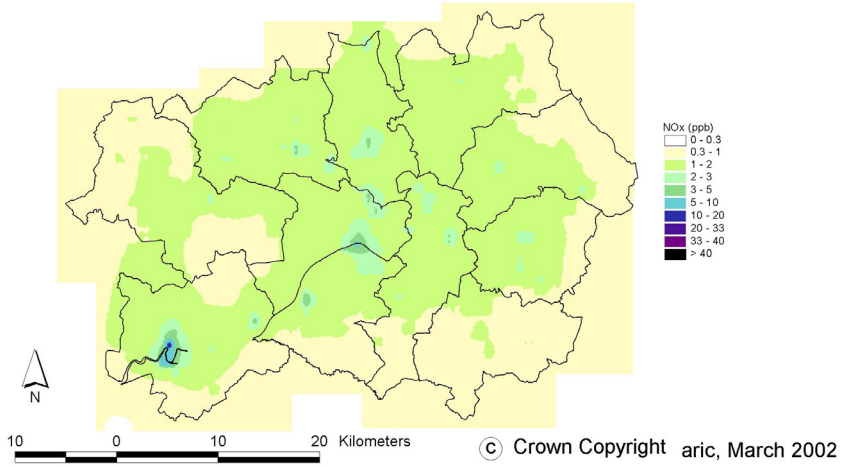
NOx from road sources in Greater Manchester and Warrington (2005)



NOx from domestic fuel burning in Greater Manchester and Warrington (2005)



NOx from industrial sources in Greater Manchester and Warrington (2005)



Total NOx in Greater Manchester and Warrington (2005)

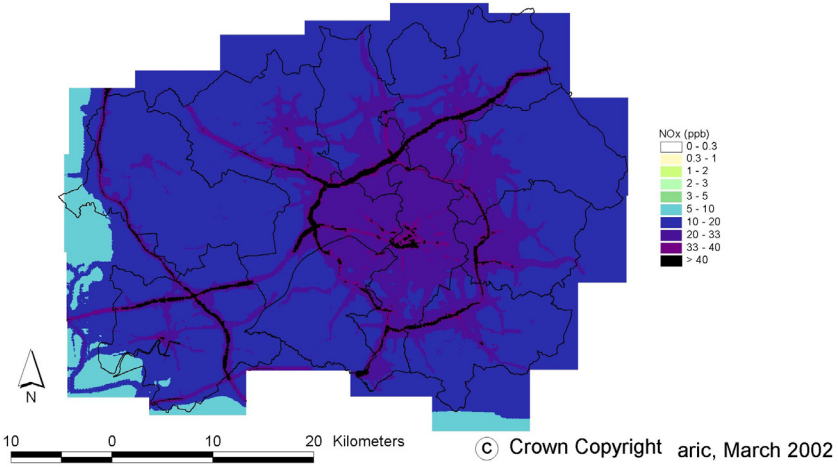
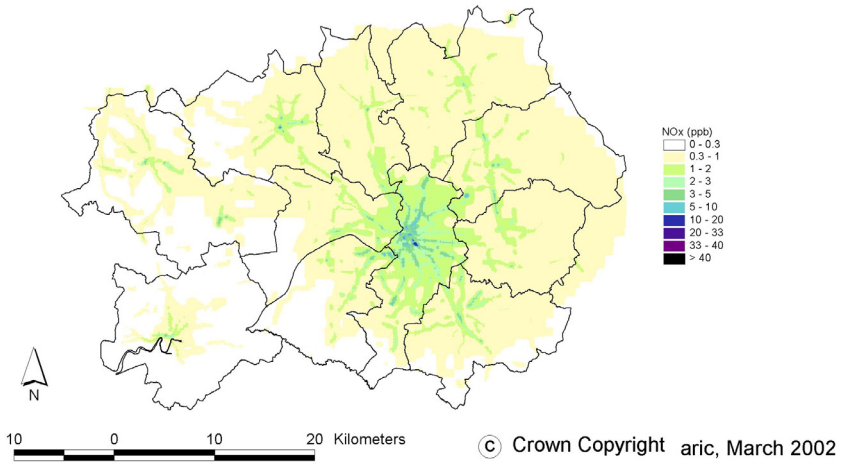
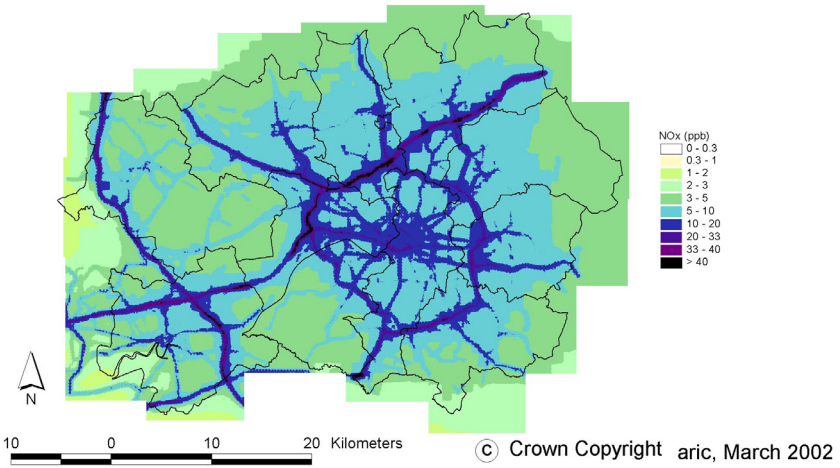


Figure 2.5: Predicted oxides of nitrogen levels from road traffic sources in Greater Manchester 2005.

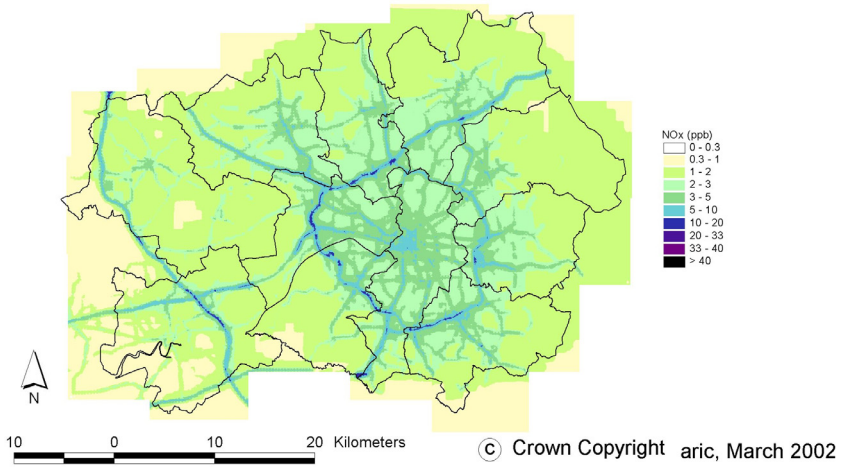
NOx from buses in Greater Manchester and Warrington (2005)



NOx from goods vehicles in Greater Manchester and Warrington (2005)



NOx from cars and motorcycles in Greater Manchester and Warrington (2005)



NOx from road sources in Greater Manchester and Warrington (2005)

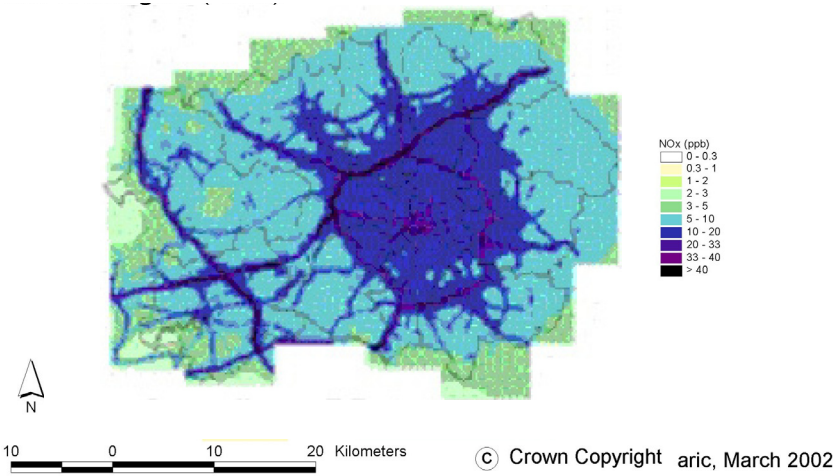
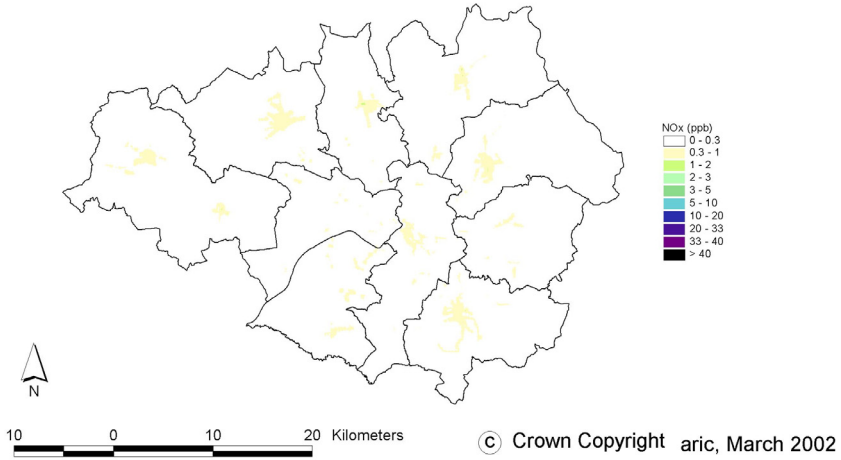
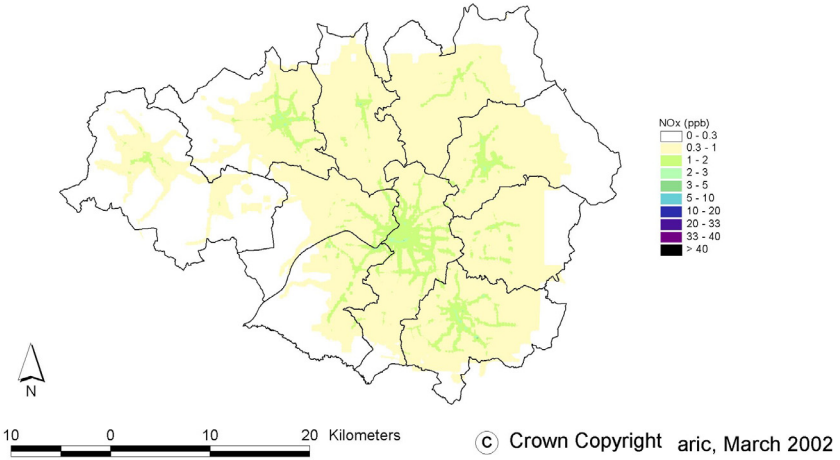


Figure 2.6: Predicted oxides of nitrogen levels from car journeys in Greater Manchester 2005.

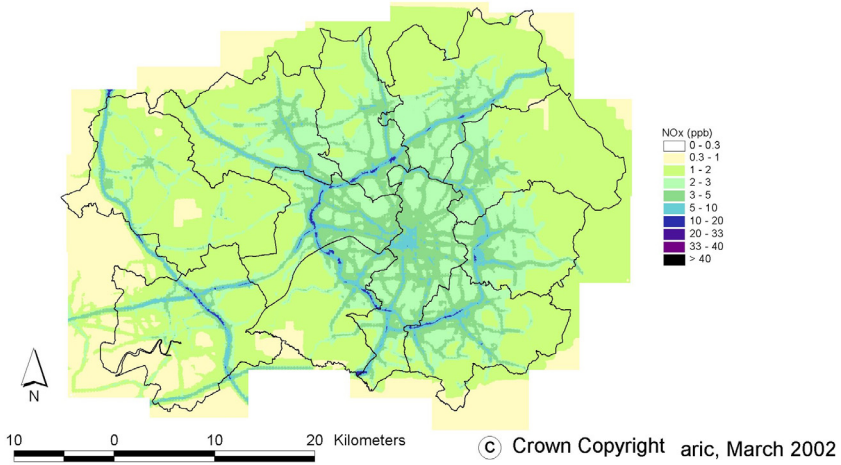
NOx from car journeys under 3km in Greater Manchester (2005)



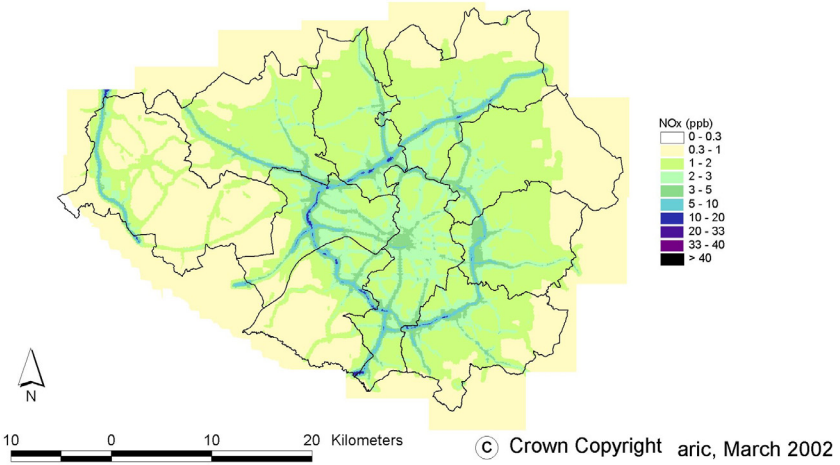
NOx from car journeys between 3 and 8 km in Greater Manchester (2005)



NOx from cars and motorcycles in Greater Manchester and Warrington (2005)



NOx from car journeys over 8 km in Greater Manchester (2005)



Chapter 3
Consultation and Participation – How the plan has evolved

Introduction

3.1 The views of a wide range of people have been sought during the preparation of the Action Plan. The Greater Manchester authorities recognise that for the Action Plan to be successful its actions will need to impact upon the lives of residents, businesses and organisations in the area. The results of the key Greater Manchester consultation initiatives are set out below. Consultation has also taken place within the districts. This work is summarised in the Local Annexes. More detailed reports of the consultation results have been produced and are available separately[1].

3.2 Consultation on potential options to improve quality in Greater Manchester began in November 2000, with the publication of a leaflet entitled 'Clearing the Air'. The main purpose of this leaflet was to inform the public about the findings of the air quality Review and Assessment process and to seek views about the extent of Air Quality Management Areas in Greater Manchester. A total of 100,000 leaflets were published and distributed across the area. A questionnaire was included which asked respondents what they thought their Local Councils should be doing about air quality.

Table 3.1: Summary of results of 'Clearing the Air' consultation

What do you think your Local Council should be doing about air quality?			
Policy	Number of responses	% of responses	% of respondents
Encouraging people to use public transport	651	18.0	63.0
Reducing emissions from industry	572	15.8	55.6
Emission testing of vehicles	474	13.1	46.1
Providing more park and ride facilities	430	11.9	41.8
Providing more information about air quality	390	10.8	37.9
Persuading people to walk or cycle more	383	10.6	37.3
Providing special car occupancy, bus or cycle lanes	311	8.6	30.3
Charging motorists to enter towns and using the money for public transport	278	7.7	27.7
Charging firms who provide free parking	122	3.4	11.9
Total responses	3611	100	-
Total respondents	1028		

[1] Copy available from Oldham MBC Environmental Services West End House West End St Oldham OL9 6DW Caroline Greenen on Tel: 0161 911 4486.

3.3 The most popular options were encouraging people to use public transport, reducing emissions from industry and emission testing of vehicles. Less popular options included charging firms that provide free parking and charging motorists to enter towns. The results can be seen in Table 3.1.

3.4 The Greater Manchester element of the Air Quality Action Plan has subsequently undergone further consultation. A focus group meeting with interested parties and organisations was held in December 2001, the Transport Matters Newsletter was circulated across Greater Manchester during May 2002 and the Manchester Area Pollution Advisory Council (MAPAC) website was further developed to provide summaries of the key actions and progress with air quality in Greater Manchester.

Greater Manchester Air Quality Action Plan Focus Group

3.5 The Greater Manchester Air Quality Action Plan Focus Group was held on 6th of December 2001 at The Lowry Centre, Salford. It was a consultation exercise with the aim of generating ideas and determining acceptance of a range of possible options for inclusion in the Greater Manchester Air Quality Action Plan. The group was invited from a wide range of the public, industrial, transport and commercial sectors across Greater Manchester. The session was facilitated by Tim Williamson from the National Society for Clean Air and Environmental Protection.

3.6 A list of options for inclusion in the Action Plan were drawn up and their level of acceptance determined by delegates through a number of workshops. Each group within the workshop considered a specific range of options, which were split into various classifications, including:

- Traffic Management & Restrictions;
- Public Transport;
- New Options 1 (suggested by delegates);
- Travel Plans & Domestic Emissions;
- Planning and Industry; and
- New Options 2 (suggested by delegates).

Delegates worked in groups to discuss possible options within their subject area. The results were compiled in a table, with consideration given to the potential impact of each option, and their feasibility, cost and timescale.

3.7 Each group then moved in a carousel session in order to comment on other groups' options. A scoring exercise was then undertaken, where delegates added a tick, cross or question mark to the different options to indicate their view on the acceptability of each option.

3.8 The results of the focus group were collated and have been used as the basis for wider consultation across Greater Manchester both within the Transport Matters newspaper and the website (http://www.mapac.org.uk).

Summary of the Results of the Focus Group

3.9 A Consensus was reached on many of the focus group options. Over 90% of participants on the day agreed that the Plan should include the following options:

- Improvements to public transport (100%);
- Public education and raising awareness of air quality issues (96%);
- Improved cycling and walking facilities (96%); and
- Greater consideration of air quality in the planning process (91.6%).

The figures in brackets give the percentage of people who agreed that the option should be included in the Plan.

3.10 Other options receiving a high level of support (between 50 -90%) included:

- Subsidised public transport services (88.5%);
- Electric tram systems (87.5%);
- Pedestrianisation (84.8%);
- Home insulation schemes (78.6%);
- Speed restrictions (76.9%); and
- Introduction of Low Emission Zone (62.9%).

3.11 Participants were given the opportunity to indicate whether they felt more information was needed before they could decide if a particular option should be included in the plan. Many of the options where less than 50% of the participants agreed that they should be included in the plan were identified as needing more detailed consideration. These included:

- Bypasses and road building (40.6%);
- Congestion charging (40%);
- High occupancy vehicle lanes (39.2%);
- Park and ride schemes (37.5%);
- Car free days (34%);
- Bonfire bans (30%);
- Traffic calming (27%); and
- Restrictions on private vehicles (25%).

Transport Matters Newsletter

3.12 In May 2002 the Greater Manchester Local Transport Plan Team produced a newspaper - 'Transport Matters'. About 100,000 copies of the newspaper were produced. These were circulated to members of the public through outlets including supermarkets, community centres, council offices, GMPTE Travelshops and local bus and train stations. They were also distributed by hand at Manchester Piccadilly train station and at selected car parks in Manchester City centre.

3.13 The newspaper contained a four page section, which followed on from the 'Clearing the Air' leaflet and gave the opportunity for members of the public to think about the various options in more detail. A questionnaire was included, which asked for views on which

measures would best help reduce air pollution from road transport. The questionnaire was also available electronically, through the MAPAC website (http://www.mapac.org.uk).

3.14 Just over 1500 completed questionnaires were returned and the responses have been analysed by the Greater Manchester Transportation Unit (GMTU). Questionnaires were returned from people living throughout Greater Manchester.

3.15 The respondents returning the questionnaires had the following profile:

- 44.8% were female, 55.2% male;
- 60.1% had use of a car;
- 91% were aged 26 or over;
- 92.9% gave their ethnic origin as white; and
- 15.1% said they had a disability which affected travel.

Overall there were a higher proportion of responses from males and a lower proportion of responses from the under 26 age group than found in the Greater Manchester population as a whole. The proportion of respondents having use of a car was similar to that of the wider population.

3.16 Respondents were asked to select the transport measures that they thought would most help to reduce air pollution. A summary of their responses is as follows:

Which traffic management measures do you support?

Opinions were fairly evenly divided but the three most selected measures were:

1. Using computer controlled traffic lights to improve traffic flow (47.3%);
2. Improving conditions for pedestrians (40.4%); and
3. Building bypasses around congested areas (39.0%)

The least popular measures, selected by under 20% of respondents, were 'Reducing speed limits on busy high speed routes to smooth out traffic flows' and 'Reserving lanes for vehicles with more than one occupant'.

Which public transport measures do you support?

The clear winner was 'Building new Metrolink lines' selected by 61.2% of respondents. Opinion on other measures was more evenly divided although 'Providing electronic information at stops to tell you when the next bus, train or tram will arrive' came second, selected by 47.0% of respondents. More or longer trains came last, chosen by 27.4% of respondents.

Which traffic restriction measures might we use?

The majority of respondents (73.3%) selected 'Creating pedestrian only areas' as one of their favoured options. The introduction of Low Emission Zones had a moderate amount of support (40.8%). The least favoured option was 'Raising Parking Fees in town centres' (16.6%).

Which individual vehicle emission controls should we introduce?

The top three most selected options were:

1. Encouraging public transport and taxi operators to achieve the lowest possible emission levels (64.8%);
2. Encouraging drivers to switch to cleaner fuels (53.2%); and
3. Enforcing new laws to stop drivers leaving engines running (47.0%).

The least popular option was 'Publicity campaigns to raise awareness of traffic pollution issues' (31.1%).

What can we do to limit pollution resulting from housing, shopping, industrial and leisure developments?

The four measures aimed at encouraging businesses to reduce pollution or giving a higher priority to air quality in land use planning were all voted for by more than 60% of respondents.

The only option voted for by less than 60% of respondents was 'Limiting parking spaces at new developments' which was selected by only 19% of respondents.

Comments on the Draft Action Plan from Defra

3.16 The Draft Action Plan was sent to Defra for comments in June 2003. Defra responded with a number of positive comments as well as suggestions on how the Plan could be improved. The following aspects of the draft Plan were praised by Defra:

'Overall the Greater Manchester Action Plan has been well developed and should be commended on taking a regional approach. Particular strengths of the Plan include:

- *Extensive consultation*
- *Broad assessment of measures*
- *A longer term strategy to monitor how the Plan is progressing.'*

3.17 The areas of improvement identified by Defra included inconsistencies in numbering, particularly between the main text and the local annexes, lack of consultation with the Regional Health Authority, and insufficient consideration of alternative fuels as a means of reducing pollution from transport. It was also suggested that further work is required to determine the extent to which a Low Emission Zone would improve air quality in Greater Manchester.

3.18 The most fundamental concerns were related to insufficient details with regard to timescales, costings and identification of responsibility with regard to many of the proposed actions within the Plan.

3.19 In order to address the issues raised by Defra the Greater Manchester authorities have provided more detail about the measures contained in the Plan and this is set out in Chapter 4. Consultants were commissioned to help to quantify the effectiveness of the proposed measures and to come up with suggestions for new measures to improve air quality. Where the need to carry out additional work to assess the proposed measures has been identified (e.g.

Low Emissions Zone), a clearer timetable setting out how this will progress and when key decisions will be made has been included.

Further Consultation

3.20 Consultation with members of the public and other interested parties on the draft Action Plan took place during November and December 2003. A further 'Transport Matters' newsletter was produced, which was widely distributed. Copies were placed in every supermarket in Greater Manchester and were also available from Council Offices and public transport facilities. The leaflet was also mailed to around 1500 individuals and organisations in Greater Manchester, including all those who wanted to be informed after the last Transport Matters newssheet. Details of all the proposed measures in the Draft Action Plan were included in the publication.

3.21 The full draft Greater Manchester Action Plan was made available on the www.mapac.org.uk website.

3.22 Consultees were asked to send their comments on the draft Action Plan to a freepost or email address. In particular views were sought on the following questions:

- Do you generally agree with the proposed measures contained in the draft Air Quality Action Plan?
- Is there anything else you think your Council should be doing to improve air quality in your area?

3.23 The response rate to the questionnaire has been poor. Just 50 responses had been received by the end of the consultation period. Of these 70% generally agreed with the Plan's proposals, 10% were against and 20% did not indicate a preference. Most of the comments made were related to the need to improve the reliability, quality and security of public transport. All the suggestions made by the respondents had already been considered during the development of the Plan. Any further responses made after the consultation deadline will be considered and incorporated into the Action Plan progress report.

Consultation with Health Professionals

3.24 Representatives of the Health profession were invited and attended the focus group meeting held at the end of 2001. Health professionals were therefore actively involved in the development of the actions contained within this Plan to improve air quality.

3.25 The Greater Manchester Health Protection Unit has been consulted in respect of the Plan and is supportive of attempts to improve health through improvement in air quality, which will be of particular benefit to the most vulnerable residents of Greater Manchester.

3.26 Individual Local Authorities have also consulted with corresponding Primary Care Trusts in respect of the Plan's Local Annexes.

Chapter 4
Actions to Improve Air Quality

Introduction

4.1 This chapter sets out the measures that will be introduced by the 10 Greater Manchester Authorities and the Greater Manchester Passenger Transport Authority / Executive (GMPTA/E) to improve air quality. The results of the source apportionment study and the consultation detailed in Chapters 2 and 3 have been used in the production of the Plan.

4.2 The local annexes contain more details on the specific actions being taken by each local authority, while Appendix A11 contains more information about all the 46 measures included in the Action Plan.

4.3 Many of the actions the Greater Manchester authorities intend to implement in order to improve air quality are taking place through other existing plans and strategies. In particular many of the actions are taking place through the Local Transport Plan. The Greater Manchester authorities are committed to taking action to improve air quality in the area and believe that many of the actions contained in the Plan will also have a beneficial effect by improving the quality of life for residents and making activities in the area more sustainable.

4.4 The Greater Manchester authorities have also been working with the Environment Agency, the Highways Agency and Manchester Airport to improve air quality in the area. The work these organisations are doing is described later in this Chapter.

4.5 The Chapter ends with Table 4.3, which summarises the action the Greater Manchester authorities intend to take. The table includes a column which estimates the likely air quality improvement of the action. This gives an indication of whether the impact of the proposed action is expected to be high, medium or low. The determination of likely air quality improvement is not straightforward. It depends on the scale of a particular scheme, which may have an effect over a large or small geographic area.

4.6 The table also sets out who has responsibility for ensuring that the actions are carried out and also includes an indication of whether the schemes are to be implemented locally or across the whole of Greater Manchester.

Implementation of the Action Plan

4.7 The timescale for implementing the actions contained in the plan will vary for individual schemes and may be different for each local authority. Appendix A11 summarises the likely timescale for the implementation of the key initiatives being introduced and co-ordinated across Greater Manchester.

4.8 A column has been included in table 4.3 setting out when the actions will be implemented. Where local schemes may take place at slightly different times the timescale has been grouped as; Short (up to 2 years), Medium (2-5 years) or Long (over 5 years) from the end of 2003.

4.9 The cost of implementing the schemes has also been included in Table 4.3. Where costs have been difficult to determine, for example where a scheme involves the partnership of other organisations, the costs have been ranked as High, Medium or Low (High = More than

£500,000 to implement, Medium = £100,000 - £500,000, Low > £100,000). The local annexes also contain a column where the costs for each of the proposed Actions are ranked in this way.

4.9 An assessment of the likely air quality improvement has been carried out using information from available sources. The Greater Manchester Authorities have also commissioned consultants to provide an indicative air quality assessment of some actions, including speed limit reductions, the Cleaner Vehicle Campaign and a review of the London LEZ study. The likely air quality improvement from all the actions contained in the Plan have been estimated, where it has not been possible to quantify accurately the air quality improvement it has been ranked as either High, Medium or Low. It has been most difficult to assess the air quality improvement arising from 'soft' measures, for example those that encourage people to use alternative modes of transport but there is a commitment to review the impact of these elements of the Plan through the annual Air Quality Progress Report.

4.10 Monitoring and evaluation of the actions contained in the Plan are essential to quantify its effectiveness. Chapter 5 sets out how the Greater Manchester Authorities intend to assess and monitor the ongoing implementation of the Plan.

Reducing Emissions from Road Traffic

4.11 Road traffic is a major source of pollution in Greater Manchester. The amount of pollution emitted from vehicles can be reduced by managing traffic, encouraging the use of alternative less polluting forms of transport, and encouraging the use of cleaner vehicles and fuels.

4.12 Improving air quality is a key objective of the Greater Manchester Local Transport Plan (LTP), a five-year strategy designed to improve the transport network in Greater Manchester. Most of the transport related measures included in this Air Quality Action Plan are being progressed through the LTP.

Local Transport Plan Measures to Reduce Road Traffic Emissions

Promoting the use of public transport

4.13 A key element of the LTP strategy is to improve public transport and encourage its use. By getting more people to use public transport as an alternative to car travel, total vehicle emissions can be reduced. This work includes a number of major infrastructure projects such as Greater Manchester's Metrolink extensions and the Quality Bus Corridors (QBC) project, along with other schemes to support the use of public transport, such as the provision of Park and Ride facilities and better public transport information.

4.14 Greater Manchester's existing Metrolink network has been extremely successful in attracting people out of their cars. The first phase between Bury and Altrincham, via Manchester City Centre, was opened in 1992 and is estimated to have taken up to two and a half million car journeys off the road each year. A new line out to Salford Quays and Eccles was opened in July 2000, and funding has been secured for a third phase of expansion throughout Greater Manchester which will take several years to build and will include extensions to:

- Oldham and Rochdale;
- South Manchester and Manchester Airport;
- East Manchester and Ashton-under-Lyne; and
- Possible extensions to Trafford Park and the Trafford Centre, East Didsbury and Stockport, and The Lowry are also being promoted.

4.15 Metrolink is powered by electricity and does not produce any pollution at street level. Generating the electricity to power Metrolink produces two thirds less particulates per passenger kilometre of travel compared with using a car.

4.16 The Quality Bus Corridor (QBC) project is creating a network of high quality bus routes throughout Greater Manchester which give more priority to buses, pedestrians and cyclists, have better waiting facilities, more frequent and reliable bus services, and employ high quality buses. One such scheme has been completed on the Eccles Old Road/A57 in Salford, together with a section of the Hazel Grove corridor on the A6 in Stockport, and parts of the Leigh-Bolton route. Work is underway to complete these and several other corridors, including the Rochdale to Hyde, Manchester to Oldham/Lees/Grotton/Waterhead, and Manchester to Bury corridors.

4.17 Funding has also been secured to enable the full QBC network to be completed, including a route between Leigh and Manchester; a set of orbital routes around the north of the conurbation linking Bolton, Bury, Rochdale and Middleton; and a major scheme in the south including Manchester Airport known as the 'SEMMMS' (South-East Manchester Multi-Modal Study) scheme.

4.18 Bus Quality Partnerships are agreements between local authorities and bus operators to work together to secure bus improvements. Agreements can include standards for environmental quality, for example local authorities can require buses to meet specified air quality emissions standards on certain designated bus routes.

4.19 A Quality Partnership Agreement has already been signed by the Greater Manchester District Councils, the Passenger Transport Authority and Executive and public transport operators, which covers all forms of public transport throughout Greater Manchester, and includes the provision of more 'low emission' buses. This Agreement will be reinforced by bringing forward individual agreements for each QBC.

4.20 In appropriate locations, Park and Ride facilities can encourage drivers to use public transport for part of their journey. This can lead to reduced traffic and less traffic generated pollution from the routes and in the locations served by Park and Ride.

4.21 Park and Ride facilities currently exist at a number of rail and Metrolink stations across Greater Manchester, and work is underway to identify further suitable sites, including sites linked to the QBC network. A Greater Manchester Park and Ride Strategy is being developed as part of the LTP to guide the provision of future sites. The Strategy will involve an assessment of the likely impact of sites, including their effect on air quality.

4.22 A programme has also begun to install a Real Time Passenger Information (RTPI) system at bus stops on the QBC network throughout Greater Manchester. The Government is part funding this project, which will provide accurate information on the actual arrival times

of buses and make bus use more attractive. A bid has been made through the LTP for extra funding to ensure that the entire QBC network can be covered by the system.

Cleaning up bus emissions

4.23 In addition to promoting the increased use and availability of public transport, GMPTE is working to improve overall emissions from the existing public transport fleet. It has adopted an Environmental Strategy, which includes measures to reduce the contribution to pollution made by buses, including:

- Offering grants to fit particulate traps to older buses, which can reduce particulate emissions by up to 95%;
- Specifying that new contracts to operate subsidised services for GMPTA must be operated by vehicles fitted with traps, a requirement introduced in April 2002; and
- Purchasing and evaluating an alternative fuel vehicle for the Ring and Ride service.

4.24 Bus operators in Greater Manchester are also contributing towards improving air quality by implementing policies to reduce emissions from buses, including investing in new buses designed to modern, low emissions specification, such as buses with Euro III engines.

Encouraging walking and cycling

4.25 Improvements are being made throughout Greater Manchester to make it easier and safer for people to make their journeys by walking or cycling, rather than by driving. Encouraging people to switch to such non-polluting forms of transport will help Greater Manchester to meet its air quality objectives.

4.26 Greater Manchester strategies on cycling and walking have been developed as part of the LTP and include targets for increasing levels of walking and cycling. All Districts now have, or are working towards, their own local cycling and walking strategies, and will be identifying and publicising networks of key pedestrian routes and local cycle networks.

4.27 The sort of schemes that are being introduced to help pedestrians and cyclists include:

- Giving pedestrians greater priority in town centres through, for example, pedestrianisation;
- Improving existing footways and pedestrian routes and providing new ones where they are needed;
- Installing crossing facilities such as Pelicans and green man facilities at traffic signals;
- Providing cycle maintenance facilities and ‘bike rescue’ services;
- Providing information on routes and other promotional material;
- Creating new cycle routes and providing cycle parking facilities; and
- Introducing traffic calming.

Travel Plans

4.28 Car travel can also be reduced through the introduction of Travel Plans by businesses, hospitals, local authorities and other organisations. A Travel Plan is typically a package of practical measures to reduce reliance on the car for journeys to work or during work. In addition to commuting and business travel, a Travel Plan can aim to reduce the environmental impact of travel by customers and visitors, and of vehicle fleets.

4.29 Travel Plans should be tailored to a particular site and can include measures such as car sharing schemes, improvements to public transport services, offering cheaper public transport fares through subsidies or operator discounts, improving walking and cycling facilities, offering flexible working practices such as working from home, switching to alternative cleaner fuels, ensuring vehicles are regularly serviced, fitting emissions reducing technology to fleet vehicles or offering driver training.

4.30 A School Travel Plan is similar to a workplace Travel Plan and is a document setting out a package of measures for reducing the number of car trips made to a school, or group of schools, by parents and staff, and for improving safety on the school journey. By encouraging greater use of public transport, cycling and walking for school journeys, School Travel Plans can also help to reduce traffic and pollution, particularly during peak hours.

4.31 All Greater Manchester local authorities are developing their own Travel Plans or have them in place already, and an important part of the LTP strategy is to promote Travel Plans to schools, businesses and other organisations. The Government recognises the importance of this work and is funding a Travel Co-ordinator at each of the Greater Manchester local authorities. The local authority Travel Co-ordinators are available to offer help and advice to any organisation wanting to develop a Travel Plan and Travel Plan Co-ordinators throughout Greater Manchester share good practice with one another.

Freight Quality Partnership

4.32 Heavy goods vehicles (HGVs) are a significant source of exhaust emissions in Greater Manchester. As part of the development of a GMLTP Freight Strategy, a Greater Manchester Freight Quality Partnership has been set up. This includes representatives of both the haulage industry and the local authorities, who are working together to minimise the environmental impact of road freight, including emissions to air.

4.33 The partnership is looking at ways of reducing emissions from goods vehicles and is aiming to ensure that road freight is transported as efficiently as possible. The Partnership will carry out a variety of measures to reduce goods vehicle emissions and these will include measures such as encouraging the shift to the use of rail for freight transport deliveries, examining potential for changing from heavy to light goods vehicles in busy town centres and generally promoting best practise in relation to air quality.

4.34 It is important to emphasise that the movement of freight is a national issue and that HGVs travelling through Greater Manchester are likely to be based and operating throughout the country and possibly abroad. It will therefore be very difficult for the Greater Manchester Freight Quality partnership to have a direct major impact on freight nationally and this will limit their potential to achieve improvements in Greater Manchester. National measures are therefore essential to complement the ongoing and planned work in Greater Manchester.

Traffic management and traffic calming

4.35 As part of the Local Transport Plan, the Greater Manchester Authorities will continue to implement an extensive programme of traffic management and traffic calming schemes, particularly in residential areas. Although these are designed primarily to reduce accidents, they also lead to reductions in through traffic, which can improve local air quality. The types

of schemes introduced to date include area-wide traffic calming, 20 mph zones and Home Zones.

4.36 Home Zones are streets where use of the road is shared between motor vehicles and other road users. Phase 1 of Greater Manchester's first Home Zone has been completed, at Northmoor in Longsight. The Northmoor Home Zone is one of only nine pilot Home Zone schemes in the country. Greater Manchester has been awarded Centre of Excellence status by Government for its work on integrated transport planning, particularly its pioneering work on Home Zones.

4.37 Following successful bids to Government for funding, further Home Zones are planned, including: Oldham's Estate, a residential development in the Sharples area of Bolton; the Victoria Estate in Whitefield, Bury; Northmoor Phase 2; Wardleworth in Rochdale; Ashton West End in Tameside; the Addison Crescent Estate in Trafford and the Browning Street area of West Leigh in Wigan.

4.38 Following a change in the law, a number of local authorities in Greater Manchester have taken over responsibility for enforcing parking restrictions from Greater Manchester Police and the traffic warden service. Those districts that have not yet introduced Decriminalised Parking enforcement are all proposing to do so at some stage. Effective monitoring and enforcement of waiting restrictions will help to reduce traffic congestion and assist the operation of bus priority lanes, which in turn will help to work towards meeting the air quality objectives in Greater Manchester.

Additional Transport Measures Included in the Air Quality Action Plan

4.39 Assessment of the original programme of 'actions' indicated that they would not be sufficient to meet fully the Air Quality Objectives. The Greater Manchester authorities are fully committed to meeting the Objectives and in order to develop further the Action Plan, AGMA employed environmental consultants, Posford Haskoning, and the Greater Manchester Transportation Unit to assess the potential additional measures available to reduce air pollution. This has resulted in the identification and development of the following extra transport measures:

- Low emissions zone – initial emissions benefit study
- Low emission zone – full feasibility study
- Powershift and CleanUp campaigns
- GM Cleaner vehicles Campaign

Low Emissions Zone – Initial Benefit Study

4.40 The Greater Manchester Transportation Unit (GMTU) was recently commissioned by the ten GM authorities to undertake a preliminary traffic emission reduction scenario study (GMTU, 2003). The objective was to investigate how road traffic emissions in GM would be reduced if older less efficient vehicles were to be replaced by more up-to-date vehicles complying with stricter emission standards.

4.41 Three database runs were undertaken:

- a standard base run, using information from the current database (2001 base year);

- a revised base run, using existing traffic speed and flow data, but incorporating a revised set of emission factors to account for the take-up of improved fuels, such as low-sulphur petrol, and retro-fitting of emission abatement systems such as particle traps;
- a test run based on the revised base run, but incorporating the following fleet composition changes:
  - all vehicles complying with Euro II emission standards by 2005 (i.e. all pre-Euro II vehicles in the standard 2005 database become Euro II), and
  - all vehicles complying with Euro III emission standards by 2010 (i.e. all pre-Euro III vehicles in the standard 2010 database become Euro III).

GMTU Study findings

4.42 The results have been made available in a draft report, and are summarised below:

Table 4.1 GMTU Vehicle Emission Scenario Study – Summary Results

		revised base case reduction, % (approx)	test case reduction, % (approx.)
NOx	**2005**	5%	16%
	2010	3%	18%
PM_{10}	**2005**	11%	11%
	2010	6%	12%

Based on total road emissions across Greater Manchester calculated in tonnes per year

4.43 The study findings indicate that significant reductions in total traffic-derived NOx and PM_{10} emissions would be brought about by the test scenario. However there are a number of qualifications to this preliminary study. The GMTU draft report notes that if the proposed stricter standards were not imposed nationally, then some road users might chose not to re-new their vehicles. These drivers may be forced to use alternative routes to avoid local restrictions, and as a consequence traffic flows and congestion may increase emissions outside the controlled area. These issues were of course discussed prior to the implementation of the congestion charge in London, and evidence to date indicates that this has not made a significant impact. However the potential degree of this impact would depend on the geographical extent of the controlled area.

Likely impacts on air quality

4.44 The potential impact on ground level air pollutant concentrations would not be as significant as the percentages given in Table 4.1. The traffic-derived contribution to nitrogen dioxide concentrations has been shown to be 56% across GM, and the reduction in emissions would apply only to that proportion. Furthermore reductions in NOx emissions would not translate proportionally to reductions in NO_2 concentrations. The reduction in NOx emissions by 2005 as projected by the GMTU study would serve to bring a significant part of the existing AQMAs within the Objective value, in suburban and many roadside locations; however the required reduction of 30-40% in the regional centres and motorway locations would not be met.

4.45 In practice the imposition of the test scenario would be unlikely to be implemented by 2005, and it is the 2010 target Objectives that should be considered. The existing EU Limit Values for nitrogen dioxide are those currently imposed in the UK for compliance by 2005. However even with these same standards in place by 2010, the projected 18% reduction in NOx emissions by 2010 would be likely to have the same effect as described above, in that the geographical extent of the GM AQMA would be reduced but that exceedances would remain in city centres, and at locations adjacent to the major arterial road network and motorways.

4.46 For PM_{10}, the projected emission reductions would be on primary particulate emissions, and the secondary and locally-derived coarse components would not be affected by the emissions control measures. Furthermore it is likely that more stringent Objectives for particles will be established for compliance by 2010, and if the current provisional Objectives are laid down in statute then it may be that an AQMA for breach of the daily and/or annual mean PM_{10} Objective will become the priority for future controls.

4.47 Nevertheless, the GMTU study has indicated that significant emission reductions might be achieved by the early introduction of more stringent vehicle emission standards. As traffic-derived pollutants are the principal focus of the GMAQAP, then the study forms a useful basis for further research on ways in which the constituent authorities must fulfil their obligation to *work towards* meeting the air quality Objectives.

4.48 The Greater Manchester Authorities have commissioned GMTU to carry out a further emissions reduction study to provide additional baseline information on the potential benefits of a LEZ. The study will assess the potential effectiveness of a LEZ across different geographical areas such as:

- Manchester City Centre
- The Manchester/Salford regional centre
- Within the inner relief road
- Regional centre, plus rolling out to outlying town centres,
- Within the M60 orbital motorway.

4.49 The study will also investigate different vehicle classifications (HGVs only, include LDVs, taxis, buses etc).

4.50 This further scoping study will provide information on the likelihood of different LEZ scenarios providing the required total emission reductions to comply with the air quality objectives, the likely comparative impact on air quality of the different geographical zones and also the likely comparative impact on air quality of the inclusion in the LEZ of only certain vehicle classifications.

4.51 The study will cost around £5,000 and will be completed by the end of March 2004. The results of the study will be used to inform the decision about whether to commission a full feasibility study described below.

Low Emission Zone – Full Feasibility Study

4.52 The results of the preliminary studies described above will assess the likely air quality benefits of a LEZ study. However before a decision could be made about whether to

introduce a LEZ in Greater Manchester a full feasibility study would need to be completed. A London LEZ feasibility study has already been carried out and was reported in July 2003. The study took almost two years from inception, and currently represents the definitive UK research into the technical, economic, political, social and health implications for such a scheme.

4.53 Much of the extensive research undertaken to produce the London LEZ report can be usefully applied to the Greater Manchester conurbation. There will be common issues such as the legal basis for implementation, the practicalities and technology required for enforcement, costs and cost effectiveness, and timescales for implementation. The options examined in the London study in terms of vehicle classifications would also inform any proposals for GM, possibly narrowing the scope (and costs) of any local feasibility study. However the principles and methodology would need to be applied to the air quality characteristics of GM, and the emissions reductions, pollutant concentration reductions and overall air quality impact would need to be determined.

4.54 A provisional scope for implementing such a scheme in Greater Manchester would be subject to political will and consensus, even before an inception phase could be considered. This stage would require identification of stakeholders, consultation and scoping. The feasibility study itself would then need to address at least

- the options:
  - geographical area (Manchester city centre only, Manchester/Salford regional centre, regional centre plus outlying town centres, within the inner relief route boundary, within the M60 orbital)
  - vehicle classifications (rigid and articulated HGVs only, or inclusion of LDVs, taxis, buses etc);
- legal basis
  - traffic regulation orders
  - enforcement matters
- impacts
  - air quality
  - health
  - socio-economic
- timescales and costs
  - political agreement
  - inception / scoping
  - feasibility study & reporting (18 months in the London case)

4.55 The feasibility study report would provide information on the predicted air quality impacts of various LEZ options, the likelihood of the objectives being met, the health benefits and the associated costs. The study would also need to consider how the scheme would be administered and enforced. The feasibility study is expected to cost around £100,000 to carry out and would take around 18 months to complete.

4.56 Consultation on the possible benefits of the LEZ feasibility study will take place in the summer 2004, following completion of the preliminary impact study. Dependent upon the outcome of the consultation and the identification of funding, the detailed study would begin in April 2005.

Reducing Emissions from Transport Through Alternative Fuels and New Technology

Powershift Programme and the Use of Alternative Fuels

4.57 To promote the use of alternative cleaner fuels the Government has backed the *Transport Action Powershift* initiative which is independently run by the Energy Saving Trust. This initiative provides grants, sets standards and makes information available on clean fuel vehicles. *Powershift* will fund

- A percentage of the cost of converting existing vehicles up to one year old
- A percentage of the difference in cost between a clean fuel vehicle and its petrol or diesel equivalent

4.58 The initiative also aims to generate vehicle orders from businesses, transport operators and local authority partners and individuals.

4.59 The use of alternative fuels can lead to a significant reduction in emissions, for example a large van run on LPG releases around 11% of NO_x emissions compared to a diesel-fuelled version.

4.60 In connection with this Action Plan the local authorities of Greater Manchester will promote the use of cleaner fuels and wherever possible raise awareness regarding *Powershift* and grant availability.

4.61 Each local authority also has a role to play in reducing emissions from their own vehicle fleet. More detail on the action being taken to reduce Council fleet emissions can be found in the local annexes.

CleanUp grants and the use of technology to reduce emissions from vehicles

4.62 The fitting of particulate traps will reduce emissions of particulates by up to 95%, whilst the fitting of oxidation catalysts can reduce emissions of hydrocarbons, and carbon monoxide by over 80%

4.63 The Government backed initiative *TransportAction CleanUp* aims to improve air quality in the UK by providing grant assistance for fitting emissions reduction equipment in vehicles. This initiative is operated alongside Powershift and offers

- up to 75% of the cost of fitting vehicles with emissions reduction equipment
- advice on how to reduce emissions output from vehicles cost effectively
- data on the effectiveness of a range of emissions reduction equipment

4.64 The local authorities of Greater Manchester will promote the fitting of emissions reducing equipment to vehicles and wherever possible will raise awareness of the *TransportAction CleanUp* initiative. The availability of grants under both the Powershift and Clean Up programmes has already been publicised through the Greater Manchester freight quality partnership.

GM Cleaner Vehicles Campaign

4.65 The Greater Manchester authorities, in partnership with Warrington Borough Council, obtained £514,000 from the Department for Transport to resource a Cleaner Vehicles Campaign until the end of March 2004. The Cleaner Vehicles Campaign makes use of new powers which allow local authorities to issue a fine in the form of a fixed penalty notice in the event of a vehicle not meeting the appropriate emissions standards. Greater Manchester Police are working with the local authorities to implement the scheme.

4.66 In addition to roadside emission testing, a number of voluntary testing sessions have been held where motorists are offered vehicle emissions testing, but without penalty in the event of failure. A comprehensive publicity campaign is also being run, including radio adverts, bus-back posters, leaflets and press releases to educate drivers in the importance of vehicle maintenance and the disproportionate impact on air pollution of a small proportion of the fleet.

4.67 Initial test data from 2003 indicates that informal (voluntary) testing had a failure rate of ~ 20%, and the formal roadside testing surveys ~ 2.7 %. A more detailed study by GMTU is ongoing to assess the degree of such breaches and the consequent impact on overall emissions.

4.68 A business plan has been produced for the continuation of the scheme beyond March 2004. It will cost £150,000 per annum to continue a widespread scheme across Greater Manchester. Partner organisations, including the Environment Agency and the Highways Agency, are being approached with a view to receiving financial support to continue the scheme.

Reviewing the Regulation of Taxi Exhaust Emissions

4.69 Emissions from taxi and private hire vehicle exhausts are checked annually as part of the MOT test, but they can be checked more frequently than this under the local authority licensing regime. Regular checks could encourage the use of cleaner fuels and reduce emissions. A number of Councils in the area already check taxi emissions twice a year.

4.70 The Greater Manchester Authorities are intending to review current practices and enforcement within Districts, and ensure that the regulation of taxi emissions is fully integrated into the taxi-licensing regime. A taxi and private hire strategy is also being developed as part of the Local Transport Plan, which could incorporate air quality issues and the contribution made by taxis and private hire vehicles to air pollution in Greater Manchester.

Protection Of Air Quality Through Enforcement Of Air Pollution Legislation

4.71 Air Quality has improved significantly since the Clean Air Acts were introduced in the 1950s. The introduction of Smoke Control Areas, which were implemented through this legislation, was very effective in reducing emissions from domestic solid fuel burning. All the Greater Manchester authorities have declared Smoke Control Areas covering all, or a large part, of their Borough and enforcement action is taken against those individuals who burn unauthorised fuels.

4.72 Legislation also exists to deal with a large number of other polluting sources including, dark smoke from chimneys or open fires on industrial sites and nuisance from bonfires arising from domestic or commercial activities. The Greater Manchester authorities respond to all complaints of this nature and take formal action where this is appropriate.

4.73 The Greater Manchester authorities also regulate emissions from certain industrial processes. Strict emission limits are placed on many of these processes, regular inspections and audits of monitoring reports are carried out to ensure that they meet the latest standards prescribed in the legislation.

Raising Awareness of Air Quality Issues

4.74 For the Air Quality Action Plan to be successful it is vital that the public is provided with information regarding the state of air pollution in Greater Manchester and its likely effects on health and the environment. It is also important that the public is advised of the air quality improvement actions proposed for Greater Manchester and also the actions that they as individuals can take to help clean their air in order to support a successful Action Plan.

4.75 Funding through the LTP settlement has enabled data from continuous air quality monitoring sites across Greater Manchester to be included on the MAPAC website (http://www.greatairmanchester.org.uk). Increasing awareness of air quality will also be achieved by initiatives such as circulating information leaflets, press releases, carrying out consultation exercises and taking part in campaigns that encourage people to use alternative forms of transport to the car. The intention is to help people to make informed choices about their lifestyle and its effect on air quality.

Action Through Building Design and Land Use Planning

4.76 Each local authority sets out their policy relating to Land Use and Planning in their Unitary Developments Plan. By ensuring that air quality is considered in the planning process, the air quality impacts of proposed developments will be assessed and where appropriate, schemes can be redesigned or mitigation measures can be implemented.

4.77 Additionally by working together the Greater Manchester Authorities aim to produce air quality information for developers and to produce a Greater Manchester Protocol with a uniform approach across Greater Manchester for assessing the impact of developments.

Energy Efficiency

4.78 Increasing efficiency in domestic properties can benefit local air quality by reducing emissions.

4.79 The Home Energy Conservation Act 1995 (HECA) required all local authorities with housing responsibilities to prepare, publish and submit to the Secretary of State an energy conservation report identifying energy conservation measures which would result in a significant improvement in the energy efficiency of all residential accommodation in its area. The Act also requires Local Authorities in England to annually report on progress in meeting a target of a 30% improvement in domestic energy efficiency (as compared to 1996 levels) over 15 years.

4.80 In accordance with this legislation the Greater Manchester authorities are planning and implementing HECA strategies, which aim to significantly improve the energy efficiency of the residential properties in their area. Actions include:

- Installing energy efficiency measures in local authority housing;
- Promoting improved energy efficiency in privately owned housing using measures such as grants, low cost loans and discount schemes for the installation of insulation products and improved heating systems and controls; and
- Changing the behaviour of residents by education and awareness raising.

4.81 To help local authorities implement their HECA strategies, the Government has set up a national network of Energy Efficiency Advice Centres. There are two such centres in Greater Manchester, The Greater Manchester (North) Energy Efficiency Advice Centre in Oldham and the Greater Manchester (South) Energy Efficiency Advice Centre in Manchester.

4.82 The Greater Manchester authorities will also be working with businesses in commercial centres to encourage them to implement more energy efficient measures.

4.83 In order to reduce emissions from large boilers the Greater Manchester authorities will encourage the conversion of large boilers (>2MWth) operating in hospital, university and commercial buildings from coal or fuel oil to gas. Large boiler emissions contributed 204 tonnes of PM_{10} in 2001 across Greater Manchester, 24% of all point-source emissions. Gas fired boilers release around 570 times less CO_2 and almost 1500 times less NO_x (per therm) than fuel oil fired plant. This work will be taking place during 2004.

Emissions Inventory Development

4.84 The Greater Manchester and Warrington emissions inventory (EMIGMA) contains information on emissions from all significant sources of pollution across the area. It is updated annually and provides baseline data on emissions across the area. It has been identified that emissions information on some sources is subject to some uncertainty, such as:

- Residential and commercial energy use;
- Bus fleet, vehicle types, distances travelled;
- Industrial sector boiler emissions.

4.85 The Greater Manchester authorities, in partnership with **ARIC** and GMTU, will be focussing on updating the baseline (2003) emissions data from these sources. This information will be collated by July 2004 and the updated emissions inventory incorporated into any modelling scenarios for use as part of the Plan by the end of 2004.

4.86 The completed emissions inventory will contain more robust baseline data to permit more accurate Action Plan scenario testing, provide objective monitoring of the effectiveness of the Plan's air quality actions and to monitor future downward trends in pollutant releases.

Actions by Other Organisations

Environment Agency

4.87 The Environment Agency controls emissions from certain large industrial processes, known as Part A processes. Emissions from these processes can increase ground level pollution concentrations in the surrounding area.

4.88 A representative from the Environment Agency attends the MAPAC air quality group in order to co-ordinate their work with that of the Greater Manchester authorities.

4.89 Across Greater Manchester as a whole, industrial sources are a less significant source of pollution than road traffic. Where the source apportionment work, summarised in Chapter 2, shows a process regulated by the Environment Agency is contributing significantly to exceedances of the air quality objective the local authority in which the AQMA is located will identify the process and notify the Environment Agency.

4.90 The Environment Agency have stated that: - *' In those AQMAs in which Agency – regulated operations make a significant contribution to the exceedance of an objective the Agency will review and where appropriate amend operating conditions and BAT(NEEC)[2] for the processes making a significant contribution to the AQMA.'*

4.91 The Greater Manchester Authorities will also work with the Environment Agency to ensure that any new processes or changes to an existing process do not impact on air quality in the surrounding area.

Manchester Airport

4.92 Manchester Airport is located in South Manchester, just off the M56 motorway. An AQMA does not cover the Airport site. Passenger numbers and development in the area are expected to increase over the foreseeable future and a series of strategies are in place to ensure sustainable growth up to 2030 and beyond. These linked documents are the Airport's Development Strategy, the Environment Strategy and the Ground Transport Strategy.

4.93 The Ground Transport Strategy for Manchester Airport was first published in 1997 and updated in 2003. Revised targets project a 40% public transport share of journeys to the Airport when its capacity reaches 40 million passengers. The objective of the Strategy is to deliver a truly inter-modal airport with public transport at the heart of access to the site and its facilities. A new Ground Transport Interchange was completed in 2003 linking rail, coach, local bus, cycle networks (and eventually Metrolink) with enhanced passenger information and travel facilities.

4.94 Manchester Airport's first air quality policies were produced some 12 years ago. Manchester Airport continues to develop air quality policies and plans within the broader aims of assessing the Airport's contribution to local air quality, operating an emissions reduction programme and reporting on performance. The Airport's air quality policies and plans have been developed in co-operation with the Manchester Airport Environmental Health Officer

[2] Best Available Techniques Not Entailing Excessive Cost

Consultation Group. This Group comprises the Airport and representatives of the local authorities in Greater Manchester and Cheshire close to the Airport. The Group meets regularly to discuss and carry out joint work on best environmental practice including air quality issues such as monitoring, assessment and action planning focused on the Airport region.

4.95 Atmospheric emissions associated with airport activities do not just arise from aircraft. Other sources of emissions include maintenance, fuelling, operational vehicles, power generation and vehicles accessing the site. Some of the measures included in the Airport's Emissions Reduction Programme are:

- The increased use of fixed electrical ground power (mains electricity supply) to power an aircraft's electrical systems whilst parked, thereby reducing the use of a jet aircraft's auxiliary power unit or mobile diesel generator and the resultant emissions;
- Airfield vehicles are required to meet MOT type emission standards and spot check vehicle emissions' testing is undertaken. In addition, the Airfield Infringement Scheme enables fines to be levied for vehicle engines left running whilst unattended and repeat offenders are banned;
- Policies on the purchase of a 'green' vehicle fleet have resulted in new, low emission airside buses and the trialling of alternative fuel such as liquefied petroleum gas; and
- The Ground Transport Strategy for Manchester Airport whose objective is to deliver a truly inter-modal airport, with public transport at the heart of access to the site and its facilities. A target has been set to increase public transport use by passengers and staff to 25% by 2005.

Highways Agency

4.96 Traffic on the motorway and trunk road network is the responsibility of the Highways Agency. The map shown in Figure 2.2 clearly shows that most of the motorway network in Greater Manchester is included within AQMAs. There are a large number of homes and other sensitive properties very close to the motorways and trunk roads throughout the area.

4.97 The Greater Manchester authorities are working with the Highways Agency to address air pollution in the area. This includes developing an air quality monitoring strategy around the motorway. AGMA is also working to encourage the Highways Agency to carry out studies that identify schemes, including speed limit reduction, which may reduce air pollution.

4.98 The Highways Agency are currently in the process of producing a Route Management Strategy for the M60 orbital motorway. AGMA will encourage the Highways Agency to ensure that air quality improvement is one of the key aims of the strategy.

Heavy Goods Vehicles

4.99 Heavy Goods Vehicles have been identified as the sector which contributes the most to pollution in the Greater Manchester area. The Greater Manchester authorities are trying to reduce the impact that HGV emissions have on pollution concentrations in the area, particularly through the Freight Quality Partnership. However the problem of HGV emissions is not confined to the Greater Manchester area, particularly since many HGVs may start or end their journey outside of the conurbation. The Greater Manchester authorities believe that HGV emissions are a national problem as well as a local concern and would like the

Government to do more to encourage fleet operators to ensure that HGV emissions are reduced as far as possible

Action Plan Table

4.100 The Action Plan table describes the actions the Greater Manchester authorities and the Greater Manchester Passenger Transport Authority/Executive intend to take to improve air quality in the area. A more detailed description of each of the actions in the table is given in Appendix A11, which also considers non - air quality impacts, costs / funding and potential air quality benefits of the schemes across Greater Manchester. A number of the actions do not have quantifiable air quality benefits but are pertinent to the overall air quality improvement package as part of the wider context of integrated local authority responsibilities which lead for example to a safer more environmentally friendly urban street scene. This is felt to be crucial in demonstrating the tangible benefits for the environment from supporting such work in order to encourage the level of public participation that the Action Plan needs to succeed.

4.101 Many possible actions to improve air quality were identified during the consultation process outlined in Chapter 3. Most of these have been included in the Action Plan, however there were a small number that have not been included in the Plan. These are listed in Appendix A11, with a brief explanation as to why they have not been included.

Table 4.2 GMAQAP Measures to be linked to quantifiable indicators

Proposed measure	Statistic to be collected
AP2. Bus emissions	information on fleet numbers, age (i.e. emission standard) and annual distance travelled. Then emission scenarios can be tested.
AP4. Promotion of a Freight Quality Partnership	information on numbers of vehicles, emission standards, geographical distribution, annual distances within GM. Retro-fitting and new fuels scenarios can then be tested.
AP5. Private Hire and taxi regulation and testing	information on numbers of vehicles tested annually and emissions failure rates; compare with failure rates for more frequent (e.g. 6-monthly) testing.
AP16,17. Promotion of work/school travel plans	information on current take-up, how many involved, numbers and distances of journeys, calculations on emissions reductions.
AP30. Promotion of cleaner fuels in boiler plant	Example: boiler emissions release 204 tonnes per annum of PM_{10} across GM (2001)[3], 24% of all point-source emissions. By district, Bolton and Manchester have the largest contributions (23% and 20% of the total respectively). If *X* number of boilers converted to gas, PM_{10} emissions would be reduced by *Y* tonnes per annum[4].
AP32,33. Promote improved energy efficiency in domestic properties, industrial and commercial premises	information on NOx emissions from the sectors; link information on CO_2 emissions in existing HECA reports to equivalent NOx releases.

[3] *EMIGMA 2001 – all authorities but with Warrington discounted.*

[4] *Analysis of the EMIGMA database could be made to determine which industry sectors contribute most significantly to the overall PM_{10} point source releases (which are 41% of total emissions across GM), and promotion and/or enforcement at regulated installations could be targeted on a sectoral basis, by district if differences are shown.*

4.102 The Table includes all the air quality actions that the Greater Manchester authorities intend to implement in order to meet the air quality targets. Ranking of the actions has not been carried out since they are all needed, nor has a formal comparison of their relative merits in improving air quality been attempted because they will all be implemented and have a place in meeting the NAQS objectives. Assessment of the practicality and cost effectiveness of individual actions has however been carried out as part of their selection and development as air quality actions. The issue for forward planning of the Action Plan is therefore not related to the prioritisation of individual actions but the quantification of how much each action will contribute to the overall air quality target. Table 4.2 provides examples of some of the measures and quantifiable indicators that need more detailed consideration

4.103. The initial programming work and tailoring of the Plan to the best environmental option for the Greater Manchester area will be a priority for 2004 and will be reported in the first Air Quality Progress Report. For most work areas the potential air quality benefits have a direct relationship to the scale of the action, timecales for implementation and the attendant costs. This will require ongoing consideration by the 10 member authorities particularly in relation to maintaining the joint approach and agreements on sources of funding. The implementation of the more 'radical' measures outlined in the Plan such as the LEZs will also require consultation with interested parties as detailed proposals are developed.

Table 4.3 – Proposed Actions

Proposed Actions	Air Quality Improvement High/Med/ Low	Timescale	Cost	Responsibility	Local/ Area-wide
Vehicle Emissions					
AP1 To implement a Cleaner Vehicles Campaign. This involves a combination of formal and informal vehicle emissions checks, with fixed penalty notices issued if vehicles do not meet the emissions standard on formal tests.	Medium	2003/04 – may continue depending on the success of initial year and identification of further funding	£514,000 has been awarded by Department for Transport to implement scheme during 2003/04. If scheme is to continue in future years the estimated costs are £152,000 per annum.	Manchester City Council is the host authority for the scheme. A management team made up of representatives from the other Greater Manchester authorities oversees the progress of the scheme. The CVC Management Team, in partnership with the Greater Manchester Air Quality Steering group will be responsible for identifying and bidding for funding to continue the scheme in future years.	Area-wide
AP2 Work with bus operators to reduce bus emissions. This will include grant-aid for low-pollution technology and changes to conditions for services that GMPTE procures.	Medium (locally) Low (overall)	Short/Medium depending on how soon fleets are renewed with low-emission vehicles	£250,000 in 2003/4	GMPTE capital budget	Area-wide

Proposed Actions	Air Quality Improvement High/Med/ Low	Timescale	Cost	Responsibility	Local/ Area-wide
AP3 An initial scoping study into a Low Emission Zone has been undertaken. This has identified the need for further work to be undertaken to examine the effectiveness of an LEZ in Greater Manchester: ▪ Further preliminary emissions reduction studies by GMTU to provide useful baseline information on the potential benefits of a LEZ. Commission full feasibility study for a LEZ across the Manchester/Salford regional centre, within outlining town centres and within the M60 orbital. This is dependent upon the outcome of the preliminary study and further consideration by politicians.	Medium – further air quality impact assessment to be carried out	By end of March 2004 18 months from commissioning study	Circa £5,000 for initial study Circa £100,000 for study. Costs of implementing the LEZ to be estimated in the study.	AGMA	Area-wide / Local
AP4 Review the regulation of private hire and hackney emissions and ensure it is fully integrated into the taxi-licensing regime.	Low	To be completed by end of 2004	Officer time to collate information, consult with hackney carriage and taxi operators and report to licensing committees	Individual Lass, MAPAC officers to work with Greater Manchester Licensing Managers Group	Local

Proposed Actions	Air Quality Improvement High/Med/ Low	Timescale	Cost	Responsibility	Local/ Area-wide
AP5 Support the take up of Powershift and CleanUp grants for new vehicles and for retrofitting existing vehicles. Local Authorities to develop Fleet Management Policies to include reduction in vehicle emissions (some Councils already have these in place – see local annexes).	Significant reductions in both NOx and PM_{10} emissions (e.g. reductions of around 95% in PM_{10} emissions can be achieved by retro-fitting particulate traps)	From 2004/05	Costs are associated with depot refuelling infrastructure where alternative fuels are used. Up to 75% grants are available through the Powershift and CleanUp programmes. Other benefits include Fuel savings and reduced VED	Individual local Authorities, Partnerships with other businesses	Area-wide/Local
AP6 Encourage shift to the use of rail transport for freight by:- • Highlighting the need for freight capacity improvements to the rail network • Tackling congestion at access points to existing intermodal terminals • Encouraging Development Plans/ Local Development Briefs to protect suitable intermodal sites and to retain private siding facilities wherever possible when sites are redeveloped.	Low/Med	Long for capacity improvements, medium for tackling congestion at access points, and short/medium for protection of intermodal sites	Very high for rail freight capacity improvements; high for second bullet; low for last one (Local authority staff time) but there could be a need for substantial funding to meet purchase notices should these be served by site owners refused planning permission for other uses	Freight Quality Partnership Funding would be from the following sources: ▪ Strategic Rail Authority and Network Rail capital funds ▪ LTP funds for local access improvements ▪ Local Planning Authority staff time. May also require Local Authority funds if purchase notices are served by site owners refused other uses.	Area-wide

Proposed Actions	Air Quality Improvement High/Med/ Low	Timescale	Cost	Responsibility	Local/ Area-wide
AP7 Promote reduced emissions from Goods Vehicles by: • Promoting the take up of grant funding for retro fitting of emissions reduction technology or switching to less polluting fuels such as LPG. • Encourage operators to speed up adoption of improved lower emission vehicle specification • Promoting sustainable transport by encouraging measures such as driver training, vehicle tuning and journey planning. • Produce an Air Quality Best Practice Guide for circulation amongst HGV and fleet operators.	Med	Short/Medium	Medium, depending on number of vehicles to be dealt with (no info on this at present)	Greater Manchester Freight Quality Partnership, MAPAC Funding is available through: ▪ Powershift and Clean Up grants from Government ▪ Operators' own funds in accelerating replacement of older more polluting vehicles ▪ LTP funding for Air Quality Best Practise Guide information included in Freight Map outlining preferred routes. Operator Associations should consider financial support to this.	Area-wide
AP8 Seek the support and guidance of central Government in relation to the promotion and implementation of Sustainable Distribution Plans amongst commercial operations and other agencies in the region.	Low	Medium	Low for promotion; high for implementation	Individual LAs /Freight Quality Partnership Funding from: ▪ LA and Company staff costs	Local

Proposed Actions	Air Quality Improvement High/Med/ Low	Timescale	Cost	Responsibility	Local/ Area-wide
AP9 Examine the feasibility of night-time deliveries by investigating the relaxation of delivery curfews relating to existing or proposed commercial premises ensuring that there is a full consideration of potential noise/nuisance impact.	Low	Medium	High, again depending on number of cases	Freight Quality Partnership Funding would be through: ▪ Expenditure by site operators where additional facilities are required to ensure that deliveries taking place in previously banned periods do not cause and environmental nuisance. ▪ Local Authority resources in evaluating the case for changed delivery hours, and removing/modifying existing planning conditions.	Area-wide

Proposed Actions	Air Quality Improvement High/Med/ Low	Timescale	Cost	Responsibility	Local/ Area-wide
AP10 Identify and address key environmental impact points for freight on the road and rail network. .	Low	Medium/Long	Medium/High, depending on number of schemes required.	Freight Quality Partnership Funding through: ▪ Staff time, LTP funds, Highway Agency spending and rail operators indirectly through Network Rail access charges. At specific terminals, the terminal operator would have to fund any necessary measures. ▪	Local
Alternative Modes of Transport					
AP11 Increase the capacity of Metrolink Phase 1 and continue to extend the existing Metrolink network to include: • Oldham and Rochdale • East Manchester and Ashton-under-Lyne • South Manchester and Manchester Airport • Trafford Park and the Trafford Centre • Lowry Spur • East Didsbury and Stockport.	Medium	By 2010	£820M	GMPTE Funding through: ▪ Specific financial package comprising Government grant, LTP funds, private sector contributions, local contributions, supplementary credit approvals and later EU money.	Area-wide

Proposed Actions	Air Quality Improvement High/Med/ Low	Timescale	Cost	Responsibility	Local/ Area-wide
AP12 Aim to ensure that public transport is co-ordinated, accessible and effectively integrated with other means of transport.	Low	Ongoing	High	GMPTE Funding through: PTE capital and revenue, private (bus operators), and some LTP money (under the Integrate Project)	Area-wide
AP13 Improve the safety and security of the public transport network.	Low	Ongoing	Medium, but could be high depending on extent of programme drawn up	GMPTE in liaison with individual Las Funding through: ▪ PTE safety and security budget plus some LTP funds	Area-wide
AP14 Continue with the programme of upgrading to provide real time information on the public transport network.	Low	Medium	£3.4M in phases 1 and 2	GMPTE	Area-wide

Proposed Actions	Air Quality Improvement High/Med/ Low	Timescale	Cost	Responsibility	Local/ Area-wide
AP15 Continue to implement Quality Bus Corridors as outlined in the Greater Manchester Local Transport Plan.	Low	To 2009	At least £25M from 2003/4 to 2006/7 plus £21M if JETTS QBC bid is approved	GMPTE in partnership with LAs Funding from: ▪ LTP major and minor works capital	Area-wide
AP16 Continue to subsidise public transport through bus subsidies to encourage bus usage	Low	Ongoing	In 2003/04 GMPTA the following support was given to bus services: £42,250,000 – concessionary support £9,870,000 – Subsidised bus services £7,330,000 – Subsidised schools services	GMPTA/E	Area – wide
AP17 Investigate the feasibility of and implement public transport that produces no pollution at street level. e.g. electric buses	Low	Long	High if new systems involved	Individual LAs GMPTE Funding from: ▪ PTA capital	Area-wide

Proposed Actions	Air Quality Improvement High/Med/ Low	Timescale	Cost	Responsibility	Local/ Area-wide
AP18 Set up Bus Quality Agreements that include challenging air quality standards.	Low	Short/Medium	Low	Individual LAs, GMPTE, Bus Operators Funding for: ▪ PTA staff costs to develop agreements ▪ Bus operators to improve vehicle fleets	Area-wide
AP19 Implement new "Park and Ride" schemes wherever feasible and appropriate.	Low	Medium	£445K 2003/4 to 2005/6	GMPTE in liaison with individual LAs Funding from: ▪ LTP finance should schemes emerge, but no air quality benefits likely in GM	Area-wide
AP20 Promote cycling and walking.	Low	Ongoing	At least £7M 2003/4 to 2005/6 plus walking/cycling elements in other schemes	Individual LAs Funding From: ▪ LTP minor works	Local

Proposed Actions	Air Quality Improvement High/Med/ Low	Timescale	Cost	Responsibility	Local/ Area-wide
Travel Plans					
AP21 Promote the development and implementation of Travel Plans among the companies and organisations in the area. Travel Plans will be aimed at reducing emissions from work activities as well as journeys to and from workplaces.	Low	Ongoing	£3.1M on measures from 2003/4 to 2005/6. Further expenditure if cost of continuing the employment of the 11 Travel Co-ordinators is included.	Individual LAs Funding from: ▪ LA staff (revenue) cost for workplace Travel Plans ▪ Some DfT funding for specific School Travel Plan Staff ▪ Also some capitalising of staff costs (Districts and PTA)	Local
AP22 Promote the development of School Travel Plans.	Low	Ongoing	Medium (School Travel plan co-ordinators continue to be funded by DfT)	Individual LAs Funding from: ▪ LA staff (revenue) cost for workplace Travel Plans ▪ Some DfT funding for specific School Travel Plan Staff. ▪ Some capitalising of staff costs (Districts and PTA)	Local

Proposed Actions	Air Quality Improvement High/Med/ Low	Timescale	Cost	Responsibility	Local/ Area-wide
Traffic Management					
AP23 Investigate the potential to create more pedestrianised areas within Greater Manchester.	High (locally) Low (overall)	Ongoing	High	Individual LAs Funding from: ▪ LA staff costs and LTP funds	Local
AP24 Local Authorities will work with the Highways Agency and their consultants to assist in the development of the M60 Route Management Strategy and other schemes to ensure that air quality improvement is a key objective.	Medium	Ongoing	Officer time initially. The cost of action to improve air quality would need to be calculated during the development of the strategy.	Individual LAs/ Highways Agency	Area –wide/ Local
AP25 Encourage the Highways Agency to identify schemes on motorways and trunk roads where speed control could improve air quality.	Medium	Timescale is dependent upon Highways Agency. Local authorities would expect schemes to be identified by end 2004.	Local authorities would expect the Highways Agency to carry out a study to identify potential schemes and implement where appropriate.	Individual LAs/ Highways Agency	Local
AP26 Continue to identify and secure funding to implement public transport priority schemes and assess their effect on air quality.	Low-Medium	Info from PTE required	Info from PTE required	GMPTE/ Individual LAs Funding from: ▪ PTA capital	Area-wide / Local

Proposed Actions	Air Quality Improvement High/Med/ Low	Timescale	Cost	Responsibility	Local/ Area-wide
AP27 Use traffic control systems to reduce congestion and minimise pollution.	Low	Ongoing	Low/Medium if use GM Urban Traffic Control system as currently being upgraded.	All LAs, GMUTC Funding from: ▪ LA staff costs, GMUTC budget and LTP monies	Area-wide
AP28 Investigate potential schemes to create "Home Zones" and implement where appropriate.	Low	Ongoing	High over County as a whole	Individual LAs Funding from: ▪ LA staff costs and LTP funds	Local
AP29 Assess the air quality impact of all proposed bypasses and new roads.	Low	Ongoing	Costs to be incorporated into the development of new road schemes	Individual LAs Funding from: ▪ LA staff costs ▪ Incorporated into the cost of developing schemes	Local

Proposed Actions	Air Quality Improvement High/Med/ Low	Timescale	Cost	Responsibility	Local/ Area-wide
AP30 Explore the contribution that road user and workplace parking charging might make to the improvement of air quality. Any consideration of any such charging schemes will take place in accordance with the following conditions • Full consultation with residents, businesses and other stakeholders will be carried out. • New high quality alternatives such as Metrolink and Quality Bus Corridors Must be significantly advanced before charges can be introduced. A regional approach to charging must be taken to ensure that it does not harm overall competitiveness and areas introducing charges are not disadvantaged.	Low-Medium	Long –unlikely before 2010. The timescale for this action is dictated by public transport improvements.	High but could be outweighed by revenues devoted to improving public transport	All LAs, GMPTE Funding through: ▪ AGMA, to be achieved through consultancy study and in-house work	Area-wide
Buildings and Land Use Planning					
AP31 Local Authorities to develop UDP policies appropriate for their area to ensure that air quality is a consideration in determining planning applications. Some Authorities already have policies in place – see Local Annexes.	Low	Dependent upon the timescale of each local authority UDP review.	Officer time to develop the Policies and ensure that they are being implemented	Individual LAs Strategic Planning Team	Local

Proposed Actions	Air Quality Improvement High/Med/ Low	Timescale	Cost	Responsibility	Local/ Area-wide
AP32 Develop Greater Manchester wide guidance for developers submitting planning applications, on air quality information to be provided on submission.	Low	To be completed by the end of 2005.	Officer time to produce the guidance is estimated to be 370 hours (10 weeks). Costs of publishing the guidance is estimated to be <£10,000. Developers would be expected to bear the cost of an air quality assessment when submitting a planning application.	POG with technical input from the AQ Steering Group	Area-wide
AP33 Develop a checklist of mitigating measures, which could be included in section 106 agreements.	Low	To be completed by end of 2005.	As AP31. Developers will be encouraged to incorporate mitigating measures into their planning applications where appropriate.	POG with technical input from the AQ Steering Group	Area-wide
Industrial Emissions					
AP34 Enforce The Pollution Prevention and Control (England and Wales) Regulations 2000.	Medium	Ongoing	Officer time – Application and subsistence fees from processes covered by this legislation covers most of the cost of enforcing the Act and Regulations.	Individual LAs, EA	Area-wide / Local

Proposed Actions	Air Quality Improvement High/Med/ Low	Timescale	Cost	Responsibility	Local/ Area-wide
Domestic Emissions & Energy Efficiency					
AP35 Continue to enforce Smoke Control Zones.	Low	Ongoing	The existing cost of officer time is **low**	Individual Las will enforce using existing powers	Local
AP36 Promote improved energy efficiency in existing domestic properties.	Low	Home Energy Conservation Act 1995 (HECA) targets exist for each local authority. Refer to local annexes.	Cost across Greater Manchester will vary according to each authorities HECA strategy and budget – will vary from simple advice to grant funding. Cost will be **Medium/high**	Individual LAs and partner organisations. This is a responsibility under the Home Energy Conservation Act (HECA)	Local
AP37 Promote energy efficient and sustainable measures to developers, in particular in areas of regeneration and to businesses in the commercial centres.	Across GM in 2005 domestic and commercial heating is projected to contribute ~ 18% of overall NO_x emissions, or around 4,500 tonnes pa. Reductions in fuel use can be achieved with standard energy efficiency measures in a home.	Ongoing under existing HECA and other local authority policies and action plans.	Dependant upon scale of implementation. Funding sources are available for many projects within local authorities. Energy efficiency measures taken by commercial organisations can often result in fuel savings,	Individual LAs and partner organisations	Local

Proposed Actions	Air Quality Improvement High/Med/ Low	Timescale	Cost	Responsibility	Local/ Area-wide
AP38 Encourage conversion of large boilers (> 2MWth) operating in hospitals, university and commercial buildings from coal or fuel oil to gas.	Large boiler emissions contributed 204 tonnes of PM_{10} in 2001 across GM, 24% of all point source emissions. Gas fired boilers release around 570x less CO_2 and almost 1500x less NO_x (per therm) than fuel oil fired plant.	From March 2004	Staff resources to contact large boiler operators within each authority, to provide information and support.	Individual LAs	Local
	Low	Refer to local annex	Cost of advice will be **low.** Provision of grant funding is also likely to be **low**. Promotion can range from advice to grant funding.	Individual Las will work with organisations such as Groundwork, Business Environment Associations.	Local
Further development of emissions database					
AP40 Develop certain elements of EMIGMA as part of the ongoing programme of upgrading, to provide more robust baseline emissions information on elements such as residential and commercial energy use; bus fleet, vehicle types, distances travelled; and industrial sector boiler emissions	To generate more robust baseline data to enable scenario testing and to allow better targeting of air quality improvements within AQMAs.	From March 2004	To be included in the planned 2003 upgrading of EMIGMA	Partnership working between ARIC, GMTU, Individual LAs, businesses to provide information	Area-wide/ Local

Proposed Actions	Air Quality Improvement High/Med/ Low	Timescale	Cost	Responsibility	Local/ Area-wide
Raising Awareness					
AP41 Publish more local air quality monitoring data.	Low	Initial work complete. Further upgrade by end 2004	Setting up of website has cost £12,000. Annual maintenance will cost £3,500. This does not include the cost of operating the monitoring systems.	Mapac / All LAs	Area-wide /Local
AP42 Continue to raise awareness of air quality issues with local authorities, AGMA and GMPTA/E.	Low	Ongoing	Costs for awareness raising in the Roadside Emissions Testing Project is £200,000 for 2003/04. For other Greater Manchester projects over the next two years costs are likely to be <£10,000	MAPAC / Individual Las will continue to use all opportunities to promote air quality issues.	Area-wide /Local
AP43 Improve links with health professionals.	Low	Ongoing	The only cost will relate to officer time and will therefore be **Low**.	MAPAC officers will forge working links with local health professionals. Health officials have been consulted on the Plan. Existing links will be developed.	Area-wide

Chapter 5
Monitoring and Evaluation

Introduction

5.1 The primary objective of this Action Plan is to improve air quality to Government standards by 2005. Changes in air quality across Greater Manchester will be monitored directly, as detailed below. Progress in implementing the Action Plan will also be assessed by reviewing the extent to which planned actions have been carried out, and by defining and then reviewing the achievement of related targets and indicators for each of these actions.

5.2 Existing data sources, and targets and indicators which local authorities and other organisations are already working to, have been identified for the three main sources of pollutants: road traffic; industry; and domestic sources. Such indicators are also complementary to the process of measuring the Action Plan. By making use of existing data in this way, the additional cost of monitoring the implementation of the Action Plan measures is kept to a minimum. The key monitoring and evaluation tools the Greater Manchester Authorities will use to assess the Action Plan are set out in table 5.1, below.

Table 5.1: Summary of the key monitoring and evaluation tools used to assess the action plan

Monitoring and evaluation method	Description
Monitoring pollution concentrations	The continuing programme of monitoring pollution concentrations, in locations throughout the area, will enable the Greater Manchester authorities to: • Measure trends in pollution concentrations and assess whether air quality is improving ; and • Ultimately determine if the air quality objectives are being met in the measurement locations. The air pollution monitoring data will be the real test of the effectiveness of Action Plan in reducing pollution concentrations.
Use of EMIGMA (Emissions Inventory for Greater Manchester and Warrington)	The Emissions inventory aims to identify and quantify significant sources of emissions to the atmosphere from across the area. It is updated annually and can therefore be used as a tool to help determine trends in pollution emissions from different sectors (e.g. road traffic, industry, domestic).
Air Quality Review and Assessment and Air Quality Modelling	Local authorities are expected to carry out a further Review and Assessment of air quality during 2003/04. This will include computer modelling of pollution concentrations using the most up-to-date information available. The results of the Review and Assessment will be used to help assess progress in meeting the air quality objectives.
The use of existing data sources, targets and indicators	Local authorities already have a number of targets and indicators in place, which relate to many of the actions contained in this Plan. This data will be collated and used to measure progress in implementing the Plan.
Annual Progress Report	An Annual Progress report will be published which will describe progress in implementing all the action points set out in Chapter 4. Each Local authority will be expected to report on the progress they have made in implementing the specific actions they have included in their Local Annexes.

Air Quality Review and Assessment

5.3 The Greater Manchester Authorities have already completed a detailed review and assessment of air quality in their areas which has shown that the Government's targets for nitrogen dioxide and particulate matter will not be met in some parts of the Conurbation by the Government's target dates. The targets for these two pollutants are set out in Table 5.2 below.

Table 5.2: National air pollutant targets

	Objective		
Pollutant	Concentration	Measured as	To be achieved by
Particulate matter (PM_{10})	50 $\mu g/m^{3\#}$ not to be exceeded more than 35 times a year	24 hour mean	31 December 2004
	40 $\mu g/m^{3\#}$	Annual mean	
Nitrogen dioxide	200 $\mu g/m^{3\#}$ not to be exceeded more than 18 times a year	1 hour mean	31 December 2005
	40 $\mu g/m^{3\#}$	Annual mean	

$^{\#}$ $\mu g/m^3$ - microgrammes (of pollutant) per cubic metre of air

5.4 Progress in meeting these air quality objectives will be monitored through a further review and assessment of air quality required by April 2004.

Air Quality Monitoring in Greater Manchester

5.5 Air quality in Greater Manchester has been monitored routinely since the early 1960s, following the introduction of the Clean Air Acts. Smoke and sulphur dioxide were the pollutants of concern at that time and the main indicators of air quality. Daily monitoring recorded initial dramatic reductions in airborne concentrations, followed by continuing downward trends over the last three decades.

5.6 Today, the pollutants of most concern are nitrogen dioxide and particulate matter (PM_{10}). By measuring the concentrations of these two pollutants over the coming years we will be able to determine if the Air Quality Action Plan is having the desired effect upon air quality.

Current air quality monitoring

5.7 Air quality monitoring across the region can be split into two distinct categories, automatic and non-automatic monitoring.

5.8 Automatic monitoring involves the use of expensive and sophisticated equipment capable of giving almost real-time concentrations of pollutants. The monitoring instrument runs continuously, recording concentrations of the pollutant it is measuring and storing these

results in its memory. These results can then be accessed and processed to give a time-series of pollutant concentrations throughout the day.

5.9 Currently, nine of the ten Greater Manchester Authorities possess at least one of these real-time monitoring stations, with a total of 16 stations across Greater Manchester. The majority of these are equipped to monitor for oxides of nitrogen and particulate matter (PM_{10}), with other monitored pollutants including sulphur dioxide, carbon monoxide and ozone.

5.10 Non-automatic monitoring involves the use of less sophisticated methods. These methods cannot produce the instantaneous results of real-time monitoring but are capable of characterising a range of different sites (e.g. roadside, town centre, urban background) and provide a picture of the spatial distribution of the pollutants across the Greater Manchester area.

5.11 The largest of the non-automatic monitoring networks is the Nitrogen Dioxide Passive Diffusion Tube Survey. All ten of the Greater Manchester Authorities participate in the survey, with a total of over one hundred and sixty sites currently in operation across the region.

Quality Assurance and Quality Control

5.12 To ensure that all the results from our monitoring networks are reliable, a strict Quality Assurance/Quality Control (QA/QC) regime is administered.

5.13 For the real-time monitoring, only data collected from those stations which are part of the Government's Automatic Urban and Rural Network (AURN) or which belong to the National Environmental Technology Centre's (NETCEN) Calibration Club will be considered robust enough to be used to assess the effectiveness of the Action Plan. All 13 of Greater Manchester's real-time monitoring sites referred to above are part of the Government's AURN or meet NETCEN's Calibration Club criteria.

5.14 Both these schemes employ very rigorous QA/QC regimes. Data is polled several times a day from these stations and must meet stringent requirements before it is accepted as being accurate. In addition to this, the site and the monitoring equipment undergo regular audits and scheduled services to ensure there are no problems with either the site or the data collected from it.

5.15 Data collected from the nitrogen dioxide passive diffusion tube survey also undergoes strict QA/QC analysis. Procedures regarding the selection of sites, transport of the tubes to and from sites and the storage of the tubes prior to analysis are covered in national guidance issued by NETCEN on behalf of the Government.

5.16 The tubes are analysed by specialist laboratories with all the Greater Manchester Authorities using the same laboratory. Their performance is assessed on a regular basis by NETCEN, using two different criteria. Results from these audits are published annually, with laboratories that are failing audits forced to take action to upgrade their performance to retain their accreditation on the scheme. In the last round of audits, the analyst used by the Greater Manchester Authorities performed satisfactorily.

Reporting the Results

5.17 Local authorities who have their real-time monitoring stations affiliated to the AURN automatically have their results reported on the Department of the Environment Food and Rural Affairs (DEFRA) website (http://www.defra.gov.uk). The web-site updates concentrations every few hours and also contains historical data for the sites.

5.18 The website also contains results from many of the non-automatic networks, including lead, smoke and sulphur dioxide, nitrogen dioxide and acid rain.

5.19 Many local authorities publish the results from their own real-time and non-automatic monitoring sites on their own websites or as annual monitoring reports. Local information can be obtained from the relevant local Environmental Health Service.

5.20 Updating and improving public information on air quality is ongoing (Action AP 41) with the results from the Greater Manchester real-time monitoring stations now displayed on the Manchester Area Pollution Advisory Council (MAPAC) website (http://www.mapac.org.uk). Other improvements to the site are planned including the spatial presentation of the levels of pollutants of concern such as nitrogen dioxide

Quality of Life Indicator – Air Quality

5.21 Where monitoring data is available the Greater Manchester Authorities will report the number of days each year where air pollution is moderate or higher, using the Government's thresholds which are available from http//:www.airquality.co.uk. This will allow trends in air quality concentrations to be analysed.

Air Pollution Emissions: EMIGMA (Emissions Inventory for Greater Manchester and Warrington)

5.22 Trends in pollution emissions will also be monitored through the Greater Manchester and Warrington emissions inventory (EMIGMA). EMIGMA is an inventory which aims to identify and quantify significant sources of emissions to the atmosphere. It is updated annually by ***aric*** on behalf of the 10 Greater Manchester Authorities and Warrington. Information on road traffic flows, industrial and domestic emissions, as well as other sources such as the Airport, are included in EMIGMA. The data has been collected since 1997 and is used to quantify the major sources of emissions to air. The database has been upgraded and improved as part of the annual update, and it is now becoming possible to identify trends in pollution emissions for particular sectors and emissions sources.

Monitoring Road Traffic Targets and Indicators

5.23 It is predicted that road traffic in Greater Manchester will release 42% of the total emissions of particulate matter in 2004 and 53% of total oxides of nitrogen emissions in 2005. Goods vehicles, in particular, are a major contributor. Measures to reduce emissions from vehicles include:

- Reducing and controlling traffic;
- Providing improved public transport to encourage its use;
- Promoting walking and cycling; and
- Encouraging cleaner vehicles and fuels.

Road Traffic Reduction Act 1997

5.24 The Road Traffic Reduction Act 1997 required local authorities to assess levels of local road traffic and to consider setting targets to either reduce traffic levels or reduce the rate of traffic growth.

5.25 Greater Manchester has set targets for 2006 and 2011 that are intended to reflect investment being made in public transport, and walking and cycling facilities, through the Greater Manchester Local Transport Plan.

5.26 Targets have been set for daily car traffic, rather than traffic in general. Targets have also been set for car traffic in the morning rush hour, as this is when congestion, exhaust emissions and delays are at their highest.

5.27 These daily and morning peak hour targets have been set for three different types of area:

- All A and B roads in Greater Manchester combined;
- Manchester City Centre; and
- The other nine key town centres in Greater Manchester combined.

Table 5.3 Road Traffic Reduction Targets for Greater Manchester

	Targets for car traffic			
	AM Peak hour		**Daily**	
Area	**2006**	**2011**	**2006**	**2011**
All A and B roads in Greater Manchester combined	No increase on 1996 levels	2% reduction on 1996 levels	Limit growth to 8% increase on 1996 levels	Limit growth to 10% increase on 1996 levels
Manchester City Centre	No increase on 1996 levels	5% reduction on 1996 levels	Limit growth to 3% increase on 1996 levels	Limit growth to 5% increase on 1996 levels
Other key town centres in Greater Manchester combined	No increase on 1996 levels	3% reduction on 1996 levels	Limit growth to 4% increase on 1996 levels	Limit growth to 6% increase on 1996 levels

5.28 Table 5.3 sets out Greater Manchester's Road Traffic Reduction Targets. Although the daily targets suggest that car traffic flows will continue to rise, they represent a reduction in the rate at which car traffic would be expected to grow were the investment in alternative

modes, such as public transport, walking and cycling, set out in the Greater Manchester Local Transport Plan (GMLTP), not to take place.

5.29 Progress in achieving these targets is assessed annually as part of the Local Transport Plan process.

Greater Manchester Local Transport Plan (GMLTP)

5.30 The Greater Manchester Local Transport Plan contains measures to reduce the impact of motorised traffic and encourage more trips to be made by more environmentally friendly, less polluting modes. These include walking, cycling and public transport and as such they are also included in this Action Plan. A number of targets have been set within the LTP which will also indicate progress in implementing this Action Plan, including:

- Increasing the modal share of public transport trips into the Regional Centre (Manchester City Centre) and the other nine key town centres in Greater Manchester;
- Increasing bus, rail and Metrolink patronage;
- Increasing cycle flows;
- Increasing rates of walking; and
- The take-up rate of travel plans.

5.31 Table 5.4 sets out the relevant LTP targets and indicators. As with the Road Traffic Reduction Targets, progress in achieving the GMLTP targets in table 5.4 is monitored annually.

Bus Emissions

5.32 It is predicted that in Greater Manchester, buses will release 1% of the total emissions of particulate matter in 2004 and 3% of total nitrogen oxide emissions in 2005. As part of its Environmental Policy, GMPTE is carrying out a number of initiatives to reduce emissions from the existing public transport fleet, including providing grant aid to operators to fit clean vehicle technology. Around 1800 vehicles are in regular use on Greater Manchester's bus network, and GMPTE is aiming to ensure that half of these are fitted with particulate traps within three years i.e. by 1st April 2005. This target is included in the Greater Manchester Bus Strategy, and progress towards it will be monitored annually.

Heavy Goods Vehicles

5.33 Heavy goods vehicles are a major source of air pollution in Greater Manchester. It is predicted that they would account for 38% of total emissions of nitrogen oxides released in 2005 and 30% of total emissions of particulates released in 2004.

5.34 A freight strategy is being developed for Greater Manchester as part of the Local Transport Plan by the Greater Manchester Freight Quality Partnership. This strategy will consider the environmental impact of commercial vehicles, including that on air quality, and will include a monitoring regime. Suitable indicators are currently being developed, a number of which may help to monitor progress in implementing the goods vehicle measures included in the Air Quality Action Plan, such as;

- Annual goods vehicle kilometres on Greater Manchester's motorways, A roads and B roads;
- The number of goods vehicles entering Greater Manchester's town and city centres;
- The average age of the goods vehicle fleet in Greater Manchester; and
- The number of goods vehicle emission checks and failures in Greater Manchester.

5.35 As freight targets and indicators are adopted as part of the LTP, those relevant to air quality will also be included in the Air Quality Action Plan monitoring regime. The GMLTP freight strategy is due to be completed in Summer 2003.

Table 5.4: GMLTP targets and indicators

Indicator	**Indicator description**	**Baseline against which target has been set**	**Target**
Trips into key centres (LTP Headline Indicator (HI) GM1)	Modal split of car and public transport trips into Manchester City Centre and the other 9 key town centres in Greater Manchester between 7.30am and 9.30am.	Modal split to Manchester City Centre 1997: Cars 48% Public transport 52% Modal split to other 9 key town centres 1997: Cars 65% Public transport 35% All 10 key centres were surveyed in 1997 to provide baseline data. They are resurveyed to provide data for each key centre on a 3-yearly cycle	Modal split to Manchester City Centre by 2005/06: Cars 44% Public Transport 56% Modal split to other 9 key town centres by 2005/06: Cars 61% Public transport 39%
Public transport patronage (HI GM 2)	Number of passenger journeys / year on bus, rail and Metrolink Passenger km/year on bus, rail and Metrolink	<u>Bus</u> 223 million journeys (1998/99) 1024 million pass/km (1998/99) <u>Rail</u> 12 million journeys (1998/99) 92 million pass/km (1998/99) <u>Metrolink</u> 13.1 million journeys (1998/99) 115.9 million pass/km (1998/99)	3% increase in bus journeys by 2011, on 1998/99 base 58% increase in rail journeys by 2011, on 1998/99 base 221% increase in Metrolink journeys by 2011, on 1998/99 base
Cycle flows (HI GM4)	Average cycle flows at manual and automatic counting sites	Index of 100 in 1996 and 93 in 2000	200% increase in flows between 2002 and 2010; 30% increase in flows between 2002 and 2005
Walk journeys (HI GM5)	Individual walk journeys by distance travelled / year	Index of 100 in 1991	Maintain 1996/8 levels of walking journeys by 2003/5 Increase walking levels to 1989/91 level by 2012
Travel Plans (HI GM9)	Number of organisations operating workplace travel plans throughout Greater Manchester	40 organisations operating workplace travel plans at end of March 2002	120 organisations operating workplace travel plans at end of March 2006

Monitoring Industrial Emissions

5.36 Industrial processes are predicted to be responsible for 41% of the total particulate emissions in Greater Manchester in 2004, and 17% of predicted nitrogen oxides in 2005. Changes in the emissions from industrial sources will be monitored through the emissions inventory, which includes data on industrial processes authorised by both the Environment Agency and local councils.

Industrial Processes Authorised by the Environment Agency

5.37 The Environment Agency collects annual returns from the industrial processes it authorises. The returns include annual emissions to the atmosphere from these processes. Information collected by the Environment Agency is published on their website (http://www.environment-agency.org.uk).

Industrial Processes Authorised by Local Councils

5.38 Local councils are required to submit annual returns to DEFRA detailing the number of inspection visits made to authorised industrial processes (Part A2 and B processes) in their area to ensure compliance with the relevant emissions standards. The MAPAC Environmental Protection Act working group collects this information for the Greater Manchester Authorities.

Monitoring Domestic Emissions

5.39 In Greater Manchester, it is predicted that domestic sources would account for 5% of total emissions of particulate matter (in 2004) and 11% of total nitrogen oxide emissions (in 2005), resulting primarily from the burning of fuel to heat space and water. Increasing the energy efficiency of domestic properties can lead to a reduction in the amount of fuel burned for space and water heating. This can lead to reductions in nitrogen dioxide and particulate matter, as well as the climate change gas, carbon dioxide.

5.40 The Home Energy Conservation Act 1995 and the Best Value regime provide an important source of monitoring data relating to energy efficiency and conservation in domestic properties.

Home Energy Conservation Act 1995

5.41 The Home Energy Conservation Act 1995 (HECA) required all local authorities with housing responsibilities to prepare, publish and submit to the Secretary of State an energy conservation report identifying energy conservation measures which would result in a significant improvement in the energy efficiency of all residential accommodation in its area. The Act covers all residential accommodation across all ownership and tenure.

5.42 HECA progress reports, on the implementation of the measures identified, must be produced annually by local authorities. The report must include an assessment of the extent to which emissions of carbon dioxide are being reduced as a result of the measures. It can also

include an assessment of the extent to which emissions of oxides of nitrogen and sulphur dioxide are being reduced, should an authority wish to provide this information.

5.43 The Act does not require local authorities to implement all the measures it identifies, some of which will be outside its control. In some cases, the local authority's role is to encourage others to undertake the work. To help local authorities implement their HECA strategies, the Government has set up a national network of Energy Efficiency Advice Centres and makes grants available for energy efficiency measures in the home through the Warm Front grant scheme. Local authorities, however, are responsible for reporting the uptake of the Warm Front grant scheme in their area as part of their HECA reports.

5.44 The following information collected as part of local authorities' HECA reports will be monitored to assess the extent to which domestic emissions may be falling as a result of local authority activities to improve home energy conservation:

- Take-up of the Warm Front grant initiative; and
- Percentage improvement in energy efficiency and reduction in carbon dioxide emissions for each of the following housing sectors;
    - Owner occupied
    - Local authority
    - Private rented
    - Housing association
    - All housing types combined.

5.45 The above data will also be used to estimate reductions in annual nitrogen dioxide emissions in the EMIGMA database.

Energy Efficiency Best Value Performance Indicators

5.46 The Audit Commission has set Best Value Performance Indicators (BVPIs) for local authorities that allow local authority performance to be monitored. There are two BVPIs that can be used to give an indication of possible changes in air quality emissions from domestic properties as a result of changes in energy efficiency. These are:

- BVPI 63 Energy efficiency – the average SAP* rating of local authority owned dwellings; and

- BVPI 70 Energy efficiency – the average annual change in the SAP rating of local authority owned dwellings.

5.47 All local authorities set annual performance targets for BVPIs and report their progress in achieving these in annual Best Value Performance Plans. As part of the monitoring of this Action Plan, local authorities' progress in achieving their BVPI energy efficiency targets will be monitored.

* Note: SAP (Standard Assessment Procedure) is a measure of the energy efficiency of a property

Monitoring and reviewing the Action Plan

5.48 In addition to carrying out the further (Round II) review and assessment of air quality to the Government's timescales, progress made in implementing the measures identified in Chapter 4 of this Action Plan and in the district annexes will be reported in the first Air Quality Progress Report. This will be accompanied by information on actions and progress in working towards the targets and indicators described above.

Glossary and terms

AGMA	Association of Greater Manchester Authorities
APR	Annual Progress Report
AQAP	Air Quality Action Plan
AQMA	Air Quality Management Area
ARIC	Atmospheric Research and Information Centre
AURN	Automatic Urban and Rural Network
BVPI	Best Value Performance Indicators
CEHO	Chief Environmental Health Officer
CNG	Compressed Natural Gas
CO	Carbon monoxide
CO_2	Carbon dioxide
CZ	Clear Zone
DEFRA	Department of Environment, Food and Rural Affairs
DETR	Department of Environment, Transport and the Regions
DPE	Decriminalised Parking Enforcement
DTLR	Department of Transport, Local Government and the Regions
EA	Environment Agency
EMAS	Environmental Management System
EPAQS	Expert Panel on Air Quality Standards
ERDF	European Regional Development Fund
GMADE	Greater Manchester Association of District Engineers
GMLTP	Greater Manchester Local Transport Plan
GMPOG	Greater Manchester Planning Officers Group
GMPTA	Greater Manchester Passenger Transport Authority
GMPTE	Greater Manchester Passenger Transport Executive
GMTU	Greater Manchester Transportation Unit
GMUTC	Greater Manchester Urban Traffic Control
GONW	Government Office for the North West
HIA	Health Impact Assessment
HC	Hydrocarbons
LEZ	Low Emission Zone
LPG	Liquified Petroleum Gas
LTA	Local Transport Authority
LTP	Local Transport Plan
M60 JETTS	M60 Junctions Eighteen to Twelve (multi-modal) Study
MAPAC	Manchester Area Pollution Advisory Council
MidMan	Midlands to Manchester (multi-modal study)
MMS	Multi-Modal Study
NDC	New Deal for Communities
NEM	New East Manchester
NO	Oxides of nitrogen
NO_2	Nitrogen dioxide
NRA	Neighbourhood Renewal Area
NSCA	National Society for Clean Air
NWDA	North West Development Agency
NWRA	North West Regional Assembly
PM_{10}	Particulate matter
PPG13	Planning Policy Guidance Note 13
PSA	Public Service Agreement
QBC	Quality Bus Corridor

RDA	Regional Development Agency
RPG	Regional Planning Guidance
RTS	Regional Transport Strategy
SAP	Standard Assessment Procedure
SCA	Supplementary Credit Approval
SCP	Single Capital Pot
SEMMMS	South East Manchester Multi-Modal Study
SO_2	Sulphur dioxide
SPITS	South Pennines Integrated Transport Strategy
SRB	Single Regeneration Budget
TIF	Transport Infrastructure Fund
TRO	Traffic Regulation Order
UDP	Unitary Development Plan
UTC	Urban Traffic Control

Air Quality Management Area: An area designated by a Local Authority where the Government's air quality objectives for certain pollutants are not expected to be met by 2005.

Air Quality Action Plan: The agreed measures by which Local Authorities will address the predicted levels of pollution identified in an AQMA.

Area-wide: Applying to the Greater Manchester area.

Local: Applying to one or more individual Greater Manchester local authority areas.

Background Documents

Association of Greater Manchester Authorities (1997). *'Clearing the Air'*, the Greater Manchester Air Quality Management Strategy. AGMA.

Association of Greater Manchester Authorities/Greater Manchester Passenger Transport Authority (2000). *'Investing in Excellence'*, the Greater Manchester Local Transport Plan 2001/2 - 2005/6. AGMA/GMPTA.

Association of Greater Manchester Authorities/Greater Manchester Passenger Transport Authority (2001a). First Annual Progress Report of the Greater Manchester Local Transport Plan, Programme Year 2000/1. AGMA/GMPTA.

Association of Greater Manchester Authorities/Greater Manchester Passenger Transport Authority (2001b). Road Traffic Reduction Act: Greater Manchester Report. The Greater Manchester Local Transport Plan, 2001/02 - 2005/6. AGMA/GMPTA.

Association of Greater Manchester Authorities/Manchester Area Pollution Advisory Council (2000). *'Clearing the Air'* - public consultation leaflet and questionnaire on the designation of air quality management areas in Greater Manchester. AGMA/MAPAC.

Atmospheric Research and Information Centre (1999*). Atmospheric Dispersion Modelling Study for Greater Manchester and Warrington*, 'SCA 3 Report'. Manchester, ARIC.

Atmospheric Research and Information centre (2000). *The Greater Manchester and Warrington Atmospheric Emissions Inventory - 1999 update*. ARIC/AGMA.

Department of the Environment, Transport and the Regions (2000a). *The Air Quality Strategy for England, Wales and Northern Ireland.* DETR Cm4548; London, The Stationery Office.

Department of the Environment, Transport and the Regions (2000b*). The Air Quality (England) Regulations 2000 (no 928)*; London, The Stationery Office.

Department of the Environment, Transport and the Regions (2000c). *Framework for review and assessment of air quality*. LAQM.G1(900). London, The Stationery Office.

Department of the Environment, Transport and the Regions (2000d). *Developing local air quality action plans and strategies: the main considerations*. LAQM.G2(00).

Department of the Environment, Transport and the Regions (2000e*). Air quality and transport*. LAQM.G3(00). London, The Stationery Office.

Department of the Environment, Transport and the Regions (2000f). *Air quality and land use planning*. LAQM.G4(00). London, The Stationery Office.

Department of the Environment, Transport and the Regions (2000g*). Monitoring air quality*. LAQM.TG1(00). London, The Stationery Office.

Department of the Environment, Transport and the Regions (2000h). *Estimating Emissions*. LAQM.TG2(00). London, The Stationery Office.

Department of the Environment, Transport and the Regions (2000i). *Selection and use of dispersion models*. LAQM.TG3(00). London, The Stationery Office.

Department of the Environment, Transport and the Regions (2000j). *Review and assessment: pollutant guidance*. LAQM.TG4(00). London, The Stationary Office.

National Society for Clean Air and Environmental Protection (2000a). *Air Quality Action Plans: Interim Guidance for Local Authorities.* Brighton, NSCA.

National Society for Clean Air and Environmental Protection (2000b). *Consultation for Local Air Quality Management: the How To Guide.* Brighton, NSCA.

National Society for Clean Air and Environmental Protection (2001). *Air Quality: Planning for Action.* Brighton, NSCA.

Posford Haskoning Ltd (2003), *Greater Manchester Air Quality Action Plan Development, Phase 1 – Overview and Position Statement.* Draft Report produced on behalf of AGMA

Greater Manchester Transportation Unit (2003), *A666 Saint Peter's Way Emission Forecasts.* Technical Note A666/1

Greater Manchester Transportation Unit (2003). *Fleet Composition Emission Tests.* Technical Note AQM/2. October 2003 (in draft)

Internet Addresses

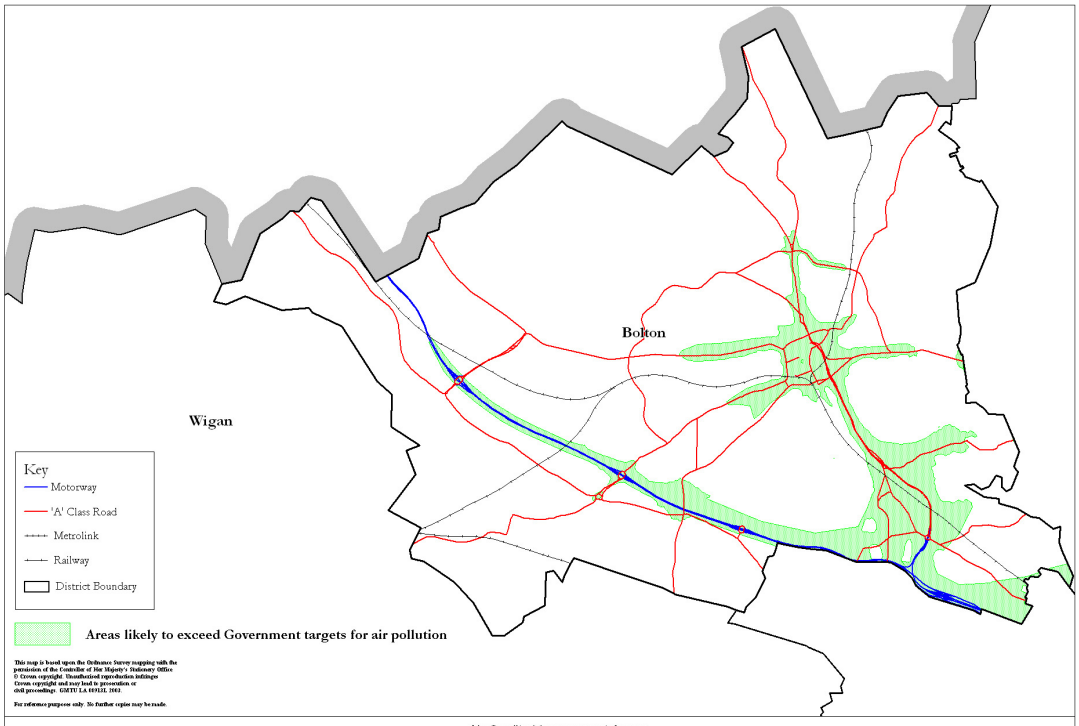
www.airquality.co.uk
www.defra.gov.uk/environment/airquality/
www.naei.org.uk
www.mapac.org.uk
www.london-lez.org
www.powershift.org.uk
www.cleanup.org.uk
www.dft.gov.uk

Annex 1
Bolton Metropolitan Borough Council

Introduction to the area

A1.1 Bolton lies on the edge of the West Pennine Moors and is bounded to the north by Lancashire and on the remaining edges by the districts of Wigan, Salford and Bury. The total area of the Borough is 140 square kilometers with 45% of the area being urban and 55% of the land being open. With a population of approximately 266,100 the Borough covers the towns of Blackrod, Farnworth, Horwich, Little Lever, Westhoughton and the villages of South Turton. The M61 motorway crosses the south of the Borough and the proximity to Manchester makes the area attractive to commuters.

Figure1.1 Bolton's Air Quality Management Area



Air Quality Management Areas	
Figure A1.1	The green areas represent results from computer modelling indicating areas which are likely to exceed the annual nitrogen dioxide standard in 2005.

Summary of review and assessment results

A1.2 On 8th March 2002 Bolton MBC declared part of the Borough an air quality management area identifying an area unlikely to meet the 2005 air quality objectives. The map below highlights the air quality management area, which essentially follows the main traffic route from Manchester, the A666 through to Astley Bridge. It includes Farnworth and Bolton town centres and the main access routes into the town centre.

Strategic context in relation to air quality

A1.3 Bolton's collective Vision for the future is that by 2007 "Bolton will become a great place to visit and in which to live, work, learn and do business in." *The Bolton Plan* highlights

achieving environmental sustainability as one of the priorities of the Council and the *Environmental Strategy* aims to ensure that the Council works towards achieving these aims. This action plan works towards being less unsustainable.

A1.4 *The Environmental Strategy* sets out how the Council will manage and reduce its own environmental impacts and over the next 5 years how it aims to place the environment at the heart of all decision making along with social and economic issues. It states that the Council will aim to work with its partners and the community to improve the quality of life of the Borough

A1.5 *The Bolton Health Strategy 2002-2004* aims to advance pubic health through work on pollution, pest control, public health education and awareness raising and include health impact assessments, the health impact on the population of any planned development, policy or initiative.

A1.6 The need to minimise the effect of poor air quality on health is implicit in these strategies. Bolton MBC is committed to working with its partners to secure an improvement in air quality throughout the Borough. *The Unitary Development Plan* and the *Local Transport Plan* are just two examples of processes already in place to achieve sustainable development and therefore should contribute to achieving an improvement in air quality.

Sources of pollution in the area

A1.7 The Emissions inventory for Greater Manchester has calculated that the total nitrogen oxides (NO_X) and particulate matter (PM_{10}) emissions for Bolton to be 2301.54 and 363 tonnes per year for NO_X AND PM_{10} respectively. The contribution of each sector to the total emissions for Bolton is illustrated in Figures 1.2 AND 1.3 over.

Figure 1.2 Percentage NO_X emissions for each source sector

Figure 1.3 Percentage PM10 emissions for each source sector

A1.8 Dispersion source apportionment modelling was carried out using data from the emissions inventory to establish the contributions of various sectors to the concentrations of nitrogen dioxide and particulate matter both in Greater Manchester (see Chapter 2 of the Greater Manchester Action Plan) and within the Borough.
The source apportionment results for Bolton largely follow those for Greater Manchester as a whole in that road traffic is the major source of ground level air pollution. The most significant source within this sector is heavy goods vehicles with car journeys over 8km contributing most to car-related emissions.

In terms of NO_2, the greatest percentage improvements required are in the areas of Astley Bridge, Hunger Hill and Bolton Town Centre (19%). The lowest percentage improvements required are at Farnworth and Topp Way / St Peters Way (13%). In terms of PM_{10}, the only exceedences identified during stage 3 modeling were at Astley Bridge, with the worst case requiring a 4% improvement in order to meet the Air Quality Strategy 24 hour mean objective.

What is already being done

A1.9 Many of the Councils policies have a beneficial impact on air quality either directly or indirectly particularly those aimed at traffic reduction and modal shift. Greater detail of such schemes is included in the local transport plan. Schemes in place in Bolton include:

Operation of Council Fleet

A1.10 Since 1999 eighteen vehicles have been fitted with particulate traps and converted to run on low sulphur diesel. The annual replacement program will see this figure rise where possible.

Quality Bus Corridors/ Public Transport Systems

A1.11 The Bolton – Atherton – Leigh QBC, and it is now largely complete. Road layout has been redesigned to incorporate bus lanes, bus stops and shelters have been upgraded, and there have been improvements for pedestrians and cyclists and also lighting improvements along the route. The QBC is linked to a system to give bus priority. A further QBC is planned from Bolton town centre to Bury along Bury Road for 2003/4.

Camera Enforcement Strategy – Bus Lanes

A1.12 A camera has been installed on Bradshawgate however, expansion of this network will be dependent on local authorities being given enforcement powers.

Walking Strategy

A1.13 A draft walking strategy will be completed in for consultation, which will aim to increase the numbers of people walking for at least part of their journey. Pedestrian schemes have been completed in both Bolton and Farnworth town centres.

Cycling Strategy

A1.14 The cycling strategy for Bolton has been in place since 1998 and aims to encourage cycling as a mode of transport by ensuring a safe, convenient and accessible cycle network and ensure cycling policies are fully integrated into other Council policies and strategies.

Work Travel Plans

A1.15 Bolton now has a travel co-coordinator to work in partnership with local businesses to give advice to local businesses on their travel plans. To date both The Royal Bolton Hospital and Bolton Institute are in the process of producing travel plans. Bolton MBC has its own draft travel plan.

School Travel Plans

A1.16 Four schools are currently working with the travel coordinator to produce school travel plans. One school is working with the coordinator to produce a resource pack to incorporate travel issues into the school curriculum.

Highways Management are currently working with the Healthy Schools initiatives to promote School Travel Plans. The Healthy Schools Initiative is a partnership that includes Bolton Primary Care Trust and Bolton MBC.

Kerb craft

A1.17 Bolton MBC was successful in 2001 in securing a Government grant to enable 11 of our schools to take part in a new child pedestrian training scheme. Kerb craft will run for three years and is part of a national initiative to lower child pedestrian accident rates. Kerb craft could also result in an increase in numbers of children walking to school and a corresponding reduction in school related traffic.

Bolton Perfect Journey Partnership
A1.18 The council is leading a public/private partnership to establish a corridor based travel plan focusing on the use of the stable, frequent, 501 First Manchester Gold bus service. Partners include Royal Bolton Hospital, Bolton Institute, GMPTE and first Manchester. Real time passenger information is also being included on this route.

Home Zones
A1.19 The Oldham Estate Home Zone bid was successful in 2001 in securing £250,000 funding from the DTLR's home zone challenge. An objective of the home zone is to improve the local environment through the reduction of air pollution. This money will be spent on finding solutions to the parking and traffic problems caused by the narrow roads, lack of appropriate parking, and gardens which slope directly onto the road, and the use of the area for parking by users of the nearby recreational areas. All solutions will be consistent with the home zone concept of providing community streets.

Regeneration and Social Inclusion Initiatives
A1.20 Farnworth Bus Station has been refurbished and pedestrianisation schemes in Farnworth Town Centre have been carried out. There have been junction improvements on Bolton Road/ Longcauseway junction, which will relieve traffic congestion and improve bus flow into Farnworth town centre. These schemes were made possible through the Competitive Farnworth Project, which has benefited from ERDF support for several years. Additionally, the East Bolton Regeneration Project (SRB6) has a number of initiatives to encourage cycling (whether off road or on road, recreational or commuter based).

A1.21 Bolton Town Centre has received £60,000 of ERDF support through the Southern Gateway Initiative, for an environmental improvement scheme. This has resulted in a range of improvements being made along the pedestrian section of Newport Street. Improvements include new street lights, repaving of the footways to each side of the street, provision of new seating and litter bins, simplifying the soft landscaping and repairing damage to the popular elephant sculpture.

Speed Regulation
A1.22 St Peters Way has had a reduction in speed limit from 70 to 50 mph. Along Moss Bank Way there has been a re-allocation of road space to reduce the existing carriageway to one lane except at traffic lights, and the introduction of cycle lanes, also speed cameras have been installed.

UDP and Section 106 Agreements
A1.23 The second deposit of the UDP contains a number of policies relating accessibility as well as supporting Section 106 Agreements in relation to seeking developer contributions towards the cost of formulating and implementing new transport schemes.

Home Energy Conservation and fuel Poverty Strategy 2002/2003
A1.24 The North Manchester Energy Efficiency Advice Centre (NMEEAC) was launched in January 2002 and has provided the catalyst for reviewing the future directions of the Borough Home Energy Conservation and Fuel Poverty Strategies in the Borough. The strategies will aim promote energy efficiency in both the Council Stock and the private sector thus reducing the energy consumption of the Borough.

Smoke Control
A1.25 The whole of the Borough is a smoke control area. This relates to control emissions of smoke from domestic premises. The Council also implements Clean Air Act legislation to

control smoke emissions from industrial premises. Statutory nuisance legislation enables the Council to take action in relation to bonfires where either smoke or odour therefrom is causing odour or smoke nuisance.

Air Quality Monitoring

A1.26 Bolton monitors air quality throughout the Borough using both traditional and real time monitoring techniques. The real time monitoring station is situated at Bolton Institute and monitors carbon monoxide, sulphur dioxide, nitrogen oxides, particulate matter and ozone (not included in the action plan). Information from this site is readily available to the public via the Internet and the BBC and ITV ceefax and telex services respectively. The traditional monitoring covers smoke, sulphur dioxide, nitrogen dioxide benzene and lead and is currently reported on an adhoc basis.

Industrial Emissions

A1.27 The Council currently controls emissions from 95 Part B processes throughout the Borough in relation to emissions to air and the Environment Agency controls the emissions of 7 larger processes in the Borough for emissions to air water and land.

What options are available locally?

A1.28 The table over indicates what further options can be achieved locally to improve air quality, see Chapter 4 for detail on the categories.

PROPOSED ACTIONS

Planned Actions	Impacts	AQ Improvement H/M/L	Cost Impact H/M/L	Time-scale S/M/L	Respons-ibility	Expected output	Link to GM Action Plan
Roadside Emission Testing Implement the Vehicle Emissions (Fixed Penalty) (England) Regulations 2002	▪ Encourage vehicle maintenance. ▪ Educate.	**M**	**H**	**April 2004**	**EHTSS, Other GM authorities**	**2 formal, 2 informal test days. 1 raising awareness day**	**AP 1**
Air Quality Monitoring ▪ Reporting of results and publicity. ▪ Produce annual reports and publish results.	▪ Raising public awareness.	**L**	**L**	**April Annually**	**EHTSS**	**Annual Report**	**AP 41**
Air Quality Info on Website ▪ Publish AQ action plan on web with links to AQ sites and include other service info.	▪ Raising public awareness. ▪ Easy access to relevant documentation.	**L**	**M**	**April 2007**	**EHTSS**	**Air Quality data on website**	**AP 42**
Review Current Monitoring ▪ Assess suitability of current monitoring sites and amend appropriately.	▪ Highlight areas of Bolton requiring monitoring.	**L**	**L**	**April 2005**	**EHTSS**	**Amended sampling document**	**AP41**

Planned Actions	Impacts	AQ Improvement H/M/L	Cost Impact H/M/L	Timescale S/M/L	Responsibility	Expected output	Link to the GM Action Plan
Pedestrianisation ▪ To be included in the walking strategy. ▪ Town Centre	▪ Pedestrianisation of Churchgate	**L**	**L/M**	**Dec 2003** **Dec 2004**	**PTP**		**AP 23**
Improved Cycling and Walking Provision ▪ Produce a walking strategy. ▪ Monitor the implementation of the cycling strategy.	▪ Make alternatives to car use for those who can use an alternative more desirable.	**M**	**M**	**Dec 2003**	**PTP , HPR**		**AP 20**
Home Zones ▪ Investigate feasibility of home zones and secure appropriate funding.	▪ Improve environment and air quality in residential areas.	**H**	**M**	**May 2004**	**Housing, HPR**	**Completion of Oldhams Estate Zone**	**AP 28**

Planned Actions	Impacts	AQ Improve-ment H/M/L	Cost Impact H/M/L	Timescale S/M/L	Responsib ility	Expected output	Link to GM Action Plan
Taxi Controls ▪ Investigate the regulation of Taxi emission testing.	▪ Encourage vehicle maintenance.	**L**	**L**	**S**	**EHTSS**	**100% taxis tested twice/yr**	**AP 4**
Use of Cleaner and Alternative Fuels ▪ Continue the fitting of particulate traps as part of the annual replacement program ▪ Actively trial other methods to reduce emissions from the Council fleet**.**	▪ To reduce emissions from Council fleet.	**L**	**L**	**ongoing**	**Commerc-ial Services**		**AP 5**
Bus Quality Partnership ▪ Northern Orbital to start 2003/04.	▪ Help reduce congestion	**L**	**L**	**Dec 2006**	**PTP, HPR**	**Completio n of northern orbital**	**AP 18**
Park and Ride Scheme ▪ Investigate potential for schemes in Borough	▪ Reduce congestion	**L**	**M**	**M**	**April 04** **Dec 03** **Dec 04**	**Bolton Town Centre Westhoug hton Horwich**	**AP 19**

Planned Actions	Impacts	AQ Improve-ment H/M/L	Cost Impact H/M/L	Timescale S/M/L	Responsibility	Expected output	Link to GM Action Plan
Travel Plans ▪ Work travel plans. ▪ Develop the key areas of the BMBC travel plan.	▪ Reduce employee car travel of one of the largest employers of the Borough by providing alternatives.	**M**	**M**	**M**	**Travel coordinator**	**Businesses with > 200 employees encouraged. BMBC travel plan subject to consultation**	**AP 21**
Work in Partnership with Local Businesses to Produce Travel Plans	▪ Reduce number of car journeys by providing alternatives.	**M**	**L**	**M**	**Travel coordinator**	**Businesses with > 200 employees encouraged**	**AP 21**
Walk to School Plans ▪ Implement kerbcraft child pedestrian training scheme. ▪ Evaluate the pilot study of school transport plans.	▪ The production of a 'tested' travel plan info pack. ▪ Reduction in traffic congestion and pollution around schools by education and encouraging alternative forms of transport.	**L**	**L**	**April 04**	**Travel coordinator**	**Draft pack produced. Final pack to be included on web site**	**AP 22**

Planned Actions	Impacts	AQ Improvement H/M/L	Cost Impact H/M/L	Timescale S/M/L	Responsibility	Expected output	Link to GM Action Plan
Policy Measures ▪ Investigate the practicality of the S106 agreements to secure balancing measures in application where AQ is an issue.	▪ To mitigate the effects of development on air quality.	**L**	**L**	**L**	**POG, MAPAC**	**See AP29**	**AP 33**
Development Control ▪ Provide guidance in relation to AQ for developers to follow when submitting Planning Applications.	▪ To adopt a consistent approach to air quality assessments for developers.	**L**	**L**	**L**	**POG, MAPAC**	**See AP29**	**AP 32**
Industrial Emissions ▪ Continue to enforce legislation in Environmental Protection Act 1990.	▪ To ensure compliance with legislation.	**M**	**L**	**L**	**EHTSS**	**Inspections carried out as per risk based inspection frequency**	**AP 34**
Domestic Emissions ▪ Smoke Control Areas. ▪ Whole of Bolton SCA – Publicise implications of SCA Enforce Legislation.	▪ Raise awareness of existing policies.	**L**	**L**	**L**	**EHTSS**	**Publicity in Bolton Scene – winter months**	**AP 35**

Planned Actions	Impacts	AQ Improve-ment H/M/L	Cost Impact H/M/L	Timescale S/M/L	Responsib ility	Expected output	Link to GM Action Plan
Information on Bonfires and Air Quality ▪ Provide information to residents on environmental issues relating to bonfires to discourage inappropriate burning.	▪ Educate public on alternative and most appropriate methods of waste disposal. ▪ Raise awareness of existing policies.	**L/M**	**L**	**S**	**EHTSS**	**Publicity in Bolton Scene**	**AP 44**
Home Information Schemes **Home Energy and Fuel Poverty Strategy** ▪ Implementation of the Home Energy and Fuel Poverty Strategy.	▪ To reduce energy consumption	**L**	**L**	**M**	**Housing**	**To maintain the annual improvement in energy efficiency**	**AP 36**

Local Consultation

A1.29 Locally, the Transport Matters publication was distributed at all council reception areas, area offices, libraries and local groups such as the Bolton Cycle Forum, Bolton Community Transport, and local community groups. In addition, articles were published in Bolton Scene and Bolton Evening News highlighting the consultation process and inviting further requests for questionnaires. Transport Matters was also distributed to all elected members and at six Area Forums.

NOVEMBER 2003

Annex 2 – Bury MBC

Introduction to the area

A2.1 The Metropolitan Borough of Bury covers an area of approximately 9,913 hectares and is home to 182,800 residents and 4,020 VAT- registered businesses. The Borough was formed in 1974 as a result of Local Government reform and is an amalgamation of 6 towns: Bury, Prestwich, Radcliffe, Tottington, Whitefield and Ramsbottom. Blackburn and Rossendale bound the Borough in the north, Bolton to the west, Rochdale to the east and Salford and Manchester to the south.

A2.2 The busy M60 motorway cuts through the south of the Borough, and intersects with the M66 motorway, which runs north into Rossendale and the M62, which runs east to Yorkshire.

Summary of Review and Assessment Results – location of AQMA and extent of the problem.

A2.3 The Review and Assessment of air quality in Bury was made public in 2000, indicating that certain areas were predicted to exceed the Governments' air quality objectives for $N0_2$ and PM_{10}.

A2.4 Early in 2002, the Council declared an Air Quality Management Area based on the geographical area that is predicted to exceed the NO_2 and PM_{10} national objectives. The shaded area on the map above indicates the extent of the Air Quality Management Area in Bury. The affected areas are mainly in the south are predominantly transport related, and are closely linked to the major traffic routes (see Figure 2.1).

Strategic context related to air quality

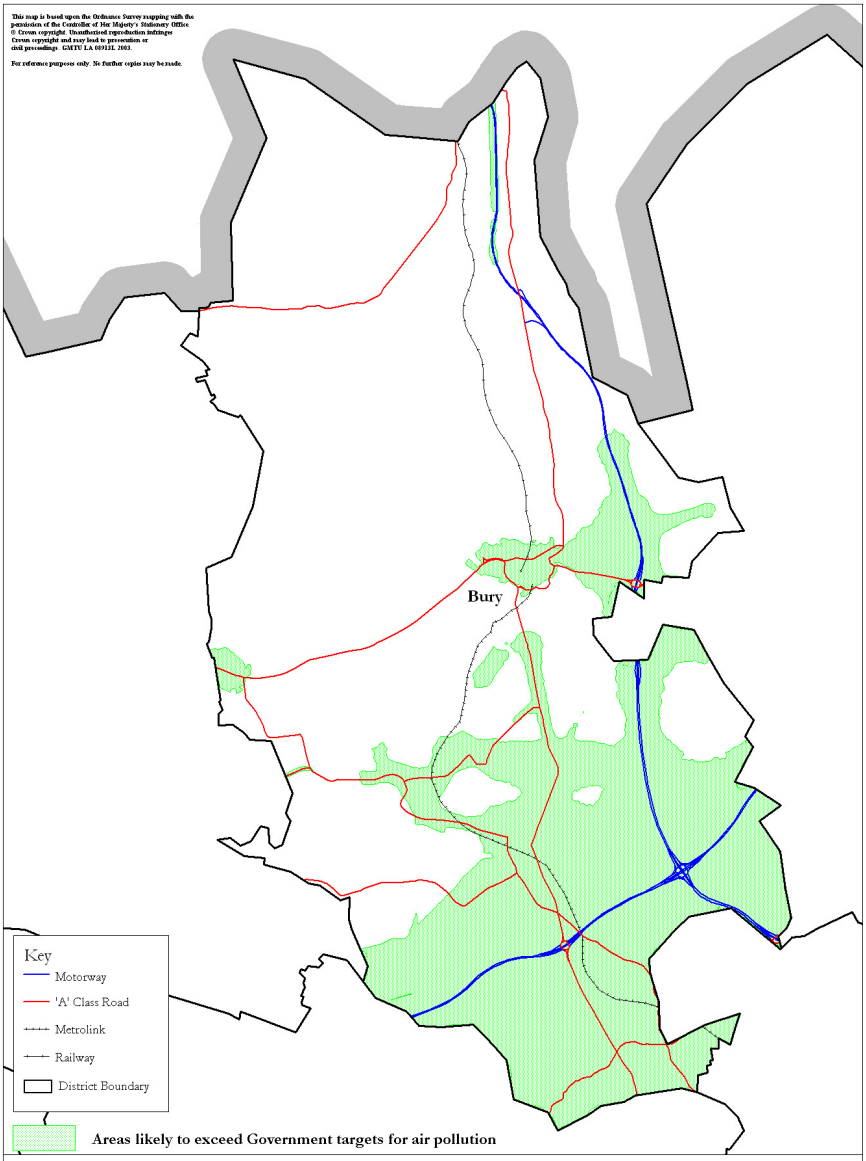
A2.5 The action plan is set in the context of the Council's polices and strategies. The Community Strategy is the document that contains the vision for the Borough and this Air Quality Action Plan supports the following two themes of this strategy: -

- Improving transport and the environment
- Ensuring the health and well- being of our communities

A2.6 Under these two themes there are aims to: -

- Reduce pollution of air, land and water
- Improve public transport and increasing its accessibility and use and promoting alternatives to vehicular travel
- Encourage and support businesses to improve environmental performance
- Improve people's health in key areas ~~(e.g. stroke, coronary heart disease and cancer) and healthy life expectancy.
- Reduce health inequalities in the Borough between areas and socio-economic groups.

Figure 2.1 Bury's Air Quality Management Area



Air Quality Management Areas

Figure A2.1 — The green areas represent results from computer modelling indicating areas which are likely to exceed the annual nitrogen dioxide standard in 2005.

- Improve the health of children and young people
- Improve health and promote independence of older people

This Air Quality Action Plan will support all the above specific aims of the Community Strategy.

A2.7 Under the Community Strategy there are Community Plans for each of the local areas in Bury MBC, namely Ramsbottom and Tottington, Bury West, Bury East, Radcliffe, Whitefield and Unsworth and Prestwich. All of these Community Plans include actions that will be beneficial to air quality and where appropriate these have been incorporated in this Action Plan.

A2.8 The Council has also adopted a Corporate Plan, which describes main priorities and sets out how the Council will contribute towards delivering the Community Strategy. As a result the

aims of this Plan are very similar to those of the Community Strategy. Under the Corporate Plan the following specific aims will be supported by the Air Quality Action Plan: -

- Improving transport and the environment
- Making our communities safer and healthier

A2.9 Under the "Improving transport and the environment" aim there is a prescribed success criteria to "comply with the objectives for individual pollutants set out in the Air Quality Strategy" and a target "to complete an Air Quality Action Plan by 2003". These performance indicators are directly supported by this Action Plan.

A2.10 Bury MBC has a comprehensive Local Agenda 21 (LA21) Strategy with an active infrastructure designed to deliver its aims and objectives. There are objectives in this strategy which specifically address air quality and transport issues.

A2.11 As a pilot authority in the Improvement and Development Agency's "Council's for Climate Protection" campaign the Council has already produced and published a Climate Change Strategy. As actions in that strategy are aimed at reducing emissions from transport, residential properties, council activity, business and industry it will directly complement and support this Air Quality Action Plan.

A2.12 The Greater Manchester Local Transport Plan (LTP) has already set out many transport measures that will help to reduce air pollution and contains many of the actions in this plan. The LTP will continue to provide the framework for the development and delivery of further transport emission reduction measures in the future.

A2.13 By controlling the siting of new residential and workplace development Bury's Unitary Development Plan can help to reduce the need to travel and encourage development in locations accessible by all modes of travel including walking, cycling and public transport. The current review of the UDP will be able to develop with the full knowledge of Bury's air quality priorities under the Local Air Quality Management regime.

A2.14 On a sub-regional basis this Action Plan complies with and supports the Greater Manchester Air Quality Management Strategy which includes specific aims to reduce transport and industrial pollution and to achieve National and International Air Quality Standards.

Sources of Pollution in the Area

A2.15 The Greater Manchester Atmospheric Emissions Inventory shows totals of all identifiable air pollution emissions within Greater Manchester mapped on a $1km^2$ grid basis. Using traffic growth forecasts and DEFRA emission factors the emissions from this inventory can be scaled forward to future years. A breakdown of the main sources of nitrogen oxides ("N0x" collective name for nitrogen dioxide and nitric oxide) and PM10 in Bury projected forward for the respective target years of 2005 and 2004 is shown in Figures A2.1 and A2.2. N0x is shown in this exercise because $N0_2$ is produced when nitric oxide (NO) gas emissions react with oxygen and therefore $N0_2$ and NO are found together. When examining emissions it is therefore more appropriate to consider the two gases collectively as N0x.

Figure A2.1: Predicted Percentage N0x released in Bury in 2005

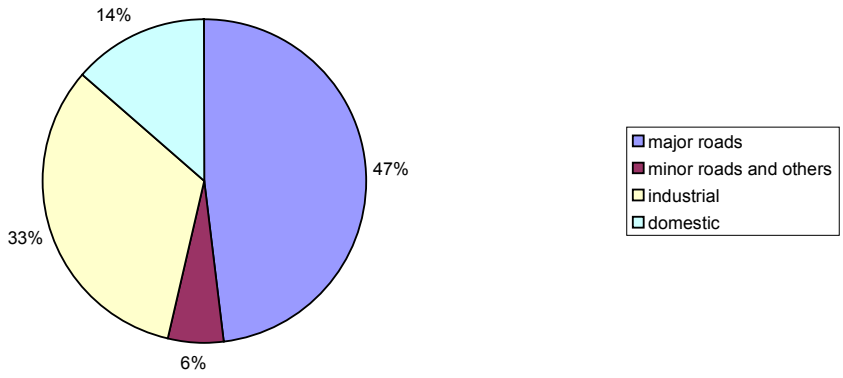
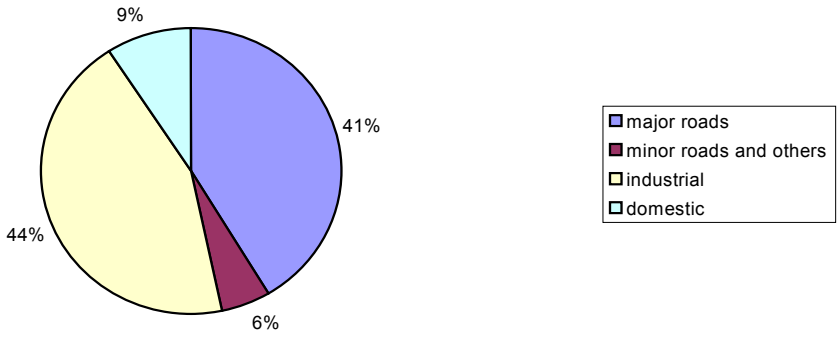


Figure A2.2: Predicted Percentage PM10 released in Bury in 2004



A2.16 These projections show clearly that the major source of both N0x and PM_{10} is predicted to be the road network. The road network emissions were further analysed to establish which routes have the most significant impact. This analysis produced the following table:-

Table A2.1: Percentage Emissions from Road Transport

	Roads links under 10,000 AADT*		**Roads links over 10,000 AADT***		**Motorways**	
	N0x	**PM_{10}**	**N0x**	**PM_{10}**	**N0x**	**PM_{10}**
Goods vehicles	3.1	4.1	72.9	69.5	55.6	45.8
Cars and motorcycles	1.4	1.8	18.5	22.1	11.5	12.7
Car journeys over 8km	0.8	1.0	15.2	17.4	11.1	12.0
Car journeys	0.6	0.8	2.5	3.2	0.1	0.1

between 3 and 8km						
Car journeys under 3km	0.1	0.2	0.6	0.8	0.0	0.0
Buses	1.0	0.6	3.2	1.8	0.2	0.1

* AADT = Annual Average Daily Traffic Flow

A2.17 Table A2.1 shows the percentage emissions from road transport. It is important to note that motorways are included in the road links over 10,000 Annual Average Daily Traffic Flow (AADT) and are also shown separately to provide further information. This table shows that a large percentage of road emissions in Bury are from busy roads (AADT >10,000 vehicles) including motorways, and that most of the emissions come from goods vehicles. The next most significant source of emissions is cars and motorcycles and of these it is car journeys of more 8km that are most significant.

A2.18 The above source information relates to total emissions and in order to further evaluate this information it was necessary to consider what contribution these emissions make to ground level concentrations of N0x and PM_{10}. This was done using the "*ADMS Urban*" computer modelling software and results confirmed that the main cause of exceedences of national air quality objectives is road traffic and that the major culprits of road traffic related air pollution are goods vehicles and car journeys over 8km.

A2.19 In order to pursue the meeting of these objectives it was essential to quantify the level of improvement necessary in the areas predicted to exceed. This was an essential part of the council's Stage 4 Review and Assessment. This work showed that the worst case exceedence of the annual mean $N0_2$ objective is indicated in the environs of the M60 motorway where levels of >61цg/m^3 are predicted at Junction 17 and levels of 50-54ug/m^3 are predicted between Junctions 17 and 18. The required reductions in N0x for this area range from 52цg/m^3 between Junctions 17/18 to >76цg/m^3 at Junction 17. A large reduction of 40цg/m^3 is also required in the vicinity of the A56 in Whitefield and Prestwich and also at limited areas of exposure to the east of Junction 18 of the M60. These reduction levels take account of any potential uncertainty in the accuracy of the original modelling results.

A2.20 For PM_{10} the worst case exceedence of the 24 hour mean is 57цg/m^3 which is predicted at properties closest to junction 18 of the M60. At this point the required reduction is predicted at the residential properties that are closest (30m) to Junction 18 of the M60, which is the point at which the M66 the M60 and the M62 join. In this area the required reduction is 9.81цg/m^3 as a 24 hour mean. This level of reduction takes account of any potential uncertainty in the accuracy of the original modelling results.

What is being done already

A2.21 In line with the policy laid out in the Greater Manchester LTP, Bury has been implementing numerous schemes aimed at traffic reduction and promoting alternative forms of transport. The following section details some examples of significant work already carried out.

A2.22 The Council has published a Cycling Strategy and has already provided 32km of on-highway cycle lanes and 15km of off-highway cycle tracks. To further improve safety 73 advanced

stop lines for cyclists have been provided at traffic lights and to improve security 84 cycle parking stands have been installed in the borough.

A2.23 Bus priority measures have already been installed on routes such as the A58. Work on the A56 Quality Bus Corridor has commenced and will be developed over the next few years. The town centre and district centres to the south of Bury are connected to the Metrolink network, which provides clean efficient public transport to Manchester, Altrincham and Eccles.

A2.24 In 2000 a new 30-mph speed limit replaced the previous 40mph limit on Peel Way which is a major route through the town centre and within the Air Quality Management Area. The new speed limit is enforced by speed cameras on both sides of the carriageway. Although principally implemented for safety reasons this new enforced limit is likely to have air quality benefits also.

A2.25 In Bury town centre, work has been carried out to restrict vehicular access and increase priority for pedestrians, creating safer, cleaner attractive spaces.

A2.26 In 2001 this council was awarded £900,000 to implement a Home Zone on the Victoria Estate, Whitefield. This estate consists of 522 houses built in 1930/35 around mainly narrow roadways. The aim of the scheme is to reconfigure existing roads to make the estate more favourable to pedestrians.

A2.27 Bury Council with local partners has also demonstrated a significant commitment to the Safer Routes to School programme. This area of work will continue and develop.

A2.28 As mentioned previously Bury MBC were one of 24 local authorities who signed up to the Councils for Climate Protection Pilot Study. Bury is one of the first authorities to publish a detailed Climate Change Strategy which includes many measures to reduce $C0_2$ emissions resulting from transport, domestic, commercial, industrial and council sectors. Most of these measures will have a directly beneficial effect on local air quality.

What Actions are Locally Achievable

A2.29 The text of the previous section gives examples of actions that have laid a firm foundation on which this Action Plan can build and it is anticipated that progress on existing themes and proactive work in some new areas will help to achieve further improvement in air quality.

A2.30 The options that are available for improving air quality in Bury MBC are shown in Table A2.2. and they will work in conjunction with and complement the Greater Manchester – wide options identified in the main part of this Action Plan. The individual actions described are mainly predicted to achieve low levels of improvement. However it is expected that the combined effect of these many local actions together with Greater Manchester–wide actions will produce significant improvements.

Table A2.2: Planned Local Actions

Planned Actions	Impacts	Air Quality Improvement High/Med/ Low	Cost Impacts High/Med/ Low	Timescale Short/Med/ Long	Responsibility	Expected Output *(How the planned action will be monitored and assessed)*	Link to GM Action Plan
Reduce Emissions from Vehicles							
Promote the use of alternative fuels such as LPG, CNG and electricity to domestic and commercial vehicle users.	Reduced emissions, financial savings for vehicle owners.	Low	Low	Ongoing	Borough Engineer	Record of promotional activity	AP 5
Promote the use and retro fitting of emission limiting technology particularly for older vehicles and heavy goods vehicles.	Reduced emissions.	Low	Low	Ongoing	Borough Engineer	Record of promotional activity	AP 5
Investigate the implementation of lower speed limits where appropriate and work with Greater Manchester Police to increase enforcement of speed limits	Reduced emissions, safer roads.	Low	Low/Med	Ongoing	Borough Engineer	Records of sites where lower speed limits have been introduced	AP 25

Planned Actions	Impacts	Air Quality Improvement High/Med/ Low	Cost Impacts High/Med/ Low	Timescale Short/Med/ Long	Responsibility	Expected Output *(How the planned action will be monitored and assessed)*	Link to GM Action Plan
Carry out an annual review of schemes for possible inclusion in local safety and traffic calming programmes as part of the Local Transport Plan. Pursue all feasible options.	Promoting reduced car use by prioritising areas towards pedestrians, reducing emissions by discouraging through traffic, improved pedestrian safety.	Low	Low/Med	Ongoing	Borough Engineer	Record of schemes chosen for inclusion	AP27
Promote fuel-efficient driving in the domestic and commercial sector.	Reduce emissions financial savings.	Low	Low	Ongoing	Borough Engineer	Record of promotional activity	AP 1
Support the Highways Agency's Route Management Strategies for the M60 and M66	Reduce congestion, improve air quality, reduce noise.	Low/Med	Med/High	Med/Long	Borough Engineer	Record of support activity	AP 24
Improve road signing in the Borough to reduce unnecessary travel.	Reduced emissions, reduced travel time, reduced congestion, reduce driver frustration.	Low	Low	Ongoing	Borough Engineer	New road signage provided	AP 27

Planned Actions	Impacts	Air Quality Improvement High/Med/ Low	Cost Impacts High/Med/ Low	Timescale Short/Med/ Long	Responsibility	Expected Output *(How the planned action will be monitored and assessed)*	Link to GM Action Plan
Reduce Emissions from Council Vehicles							
Monitor the current five vehicles fitted with diesel/LPG systems prior to fitting of further systems.	Reduced emissions, reinforce Council's commitment to the environment, reduced fuel costs.	Low	Implement – High - £3000 - £4000 per vehicle	Medium	Borough Operational Services Officer	A reduction in fuel cost per vehicle	AP 5
Specification and purchase of improved efficiency vehicles to and above Euro III standard and examine the availability of Euro IV engines.	Reduced emissions reinforce Council's commitment to the environment.	Low	Med	Med	Borough Operational Services Officer	Number of improved efficiency vehicles purchased	AP 5
Improve monitoring of fuel consumption to facilitate reduction programme.	Reduced emissions, reinforce Council's commitment to the environment, financial savings.	Low	Low	Short	Borough Operational Services Officer	New monitoring systems will be implemented	AP 5
Ensure that the Council's vehicle fleet is properly maintained and operating efficiently.	Reduced emissions, reinforce Council's commitment to the environment, fewer breakdowns.	Low	Low	Ongoing	Borough Operational Services Officer	Monitor existing maintenance regime to ensure emissions are kept to a minimum	AP 5

Planned Actions	Impacts	Air Quality Improvement High/Med/ Low	Cost Impacts High/Med/ Low	Timescale Short/Med/ Long	Responsibility	Expected Output *(How the planned action will be monitored and assessed)*	Link to GM Action Plan
Investigate the availability and cost of monitoring equipment to measure diesel emissions.	Reduced emissions, reinforce Council's commitment to the environment.	Low	Low – approx £5000	Short	Borough Operational Services Officer	Detail of investigation and potentially the purchase of appropriate equipment	AP 5
Raise awareness of fuel-efficient driving amongst local authority drivers and employees generally.	Reduced emissions, reinforce Council's commitment to the environment, financial savings.	Low	Low	Ongoing	Borough Operational Services Officer	Reduction in fuel usage in relation to number of vehicles used	AP 5
Reduce traffic volumes							
Improving the provision of on and off road cycle lanes and tracks in the Borough.	Promote reduced car use, improved safety for cyclists, encouraging exercise.	Low	£251,000	Ongoing	Borough Engineer	Length of cycle lanes, tracks provided	AP 20
Review the Bury Cycling Strategy and raise awareness of it.	Promote reduced car use, ensure cycling is promoted effectively and efficiently in the short and long term.	Low	Low	Short	Borough Engineer	Cycling Strategy reviewed and record of awareness raising activity	AP 20

Planned Actions	Impacts	Air Quality Improvement High/Med/ Low	Cost Impacts High/Med/ Low	Timescale Short/Med/ Long	Responsibility	Expected Output *(How the planned action will be monitored and assessed)*	Link to GM Action Plan
Providing advanced stop lines for cycles.	Improved safety for cyclists.	Low	£20,000	Ongoing	Borough Engineer	Number of stop lines introduced	AP 20
Improve the provision and security of cycle parking facilities.	Promote reduced car use, improved safety.	Low	£6000	Ongoing	Borough Engineer	Record of security measures implemented	AP 20
Implement the Safer Routes to Schools Programmes.	Promote reduced car use, improved safety for cyclists and pedestrians, encouraging exercise, reduced congestion outside schools.	Low	£275,000	Ongoing	Borough Engineer	Record of progress in implementation	AP 22
Rolling programme of local schemes to improve the safety of pedestrians.	Promote reduced car use, improved safety for pedestrians, encouraging exercise.	Low	Med/ High	Ongoing	Borough Engineer	Records of schemes implemented	AP 20
Where appropriate, ensure that the impact of proposed developments on traffic emissions is assessed as part of the planning process. Assessment results can then be considered, with all other relevant information relating to a planning application	Allow potential effects on air quality to be considered prior to new development.	Low	Low	Ongoing	Borough Engineer	Number of planning applications assessed	AP 29 AP 32

Planned Actions	Impacts	Air Quality Improvement High/Med/ Low	Cost Impacts High/Med/ Low	Timescale Short/Med/ Long	Responsibility	Expected Output *(How the planned action will be monitored and assessed)*	Link to GM Action Plan
Where appropriate request that developers produce a statement on cycle/ pedestrian impact with planning applications.	Allow full consideration of pros and cons of new developments in relation to walking and cycling.	Low	Low	Ongoing	Borough Engineer	Number of planning applications assessed	AP 20
Ensure that the revised UDP contains policies, which seek to reduce the need to travel and promote the use of modes other than the car.	Reduced car use, financial savings.	Low	Low	Ongoing	Borough Planning Officer	Revised UDP will contain appropriate policies	AP 31
Implement the Bury sections of the National Cycle Network route through Bury.	Promote reduced car use, improved safety for cyclists and pedestrians, encourages exercise.	Low	Low/Med	Ongoing	Borough Engineer	Record of progress in implementation	AP 20

Planned Actions	Impacts	Air Quality Improvement High/Med/ Low	Cost Impacts High/Med/ Low	Timescale Short/Med/ Long	Responsibility	Expected Output *(How the planned action will be monitored and assessed)*	Link to GM Action Plan
Produce a Bury Walking Strategy promoting walking in the Borough.	Promote reduced car use, ensure walking is encouraged effectively and efficiently in the short and long term.	Low	Low	Short	Borough Engineer	Record of progress in production of the walking strategy	AP 20
Redesign road systems where appropriate to give pedestrians priority e.g. in Bury Town Centre.	Reduce traffic flows, improved safety for pedestrians, create a more pleasant atmosphere for pedestrians.	Low	£749,000	Ongoing	Borough Engineer	Number of schemes implemente d	AP 20
Promote the implementation of Travel Plans among Bury employers.	Reduce vehicle use, reduced emissions, financial savings.	Low	Low	Ongoing	Borough Engineer	Record of promotional activity	AP 21
Promote measures such as car sharing among residents and businesses in the area.	Reduce car use, financial savings.	Low	Low	Ongoing	Borough Engineer	Record of promotional activity	AP 21

Planned Actions	Impacts	Air Quality Improvement High/Med/ Low	Cost Impacts High/Med/ Low	Timescale Short/Med/ Long	Responsibility	Expected Output *(How the planned action will be monitored and assessed)*	Link to GM Action Plan
Implement the Home Zone at Victoria Estate Whitefield. Implement additional Home Zones wherever feasible and appropriate levels of funding available.	Prioritising areas towards pedestrians, reducing emissions by discouraging through traffic, improved pedestrian safety.	Low	£1000,000	Ongoing/ Long	Borough Engineer	Implementation of the Home Zone at Victoria Estate, Whitefield. Indication of other potential Home Zones considered and measure of progress	AP 28
Promote the use of public transport							
Implement the A56/A665/A58 Bus Corridors.	Promote the use of public transport on main arterial routes, make public transport quicker and more reliable.	Low/Med	£772,000	Ongoing	Borough Engineer	Measurement of progress with bus corridors	AP 15
Promote clean attractive, safe and affordable public transport.	Promote the use of public transport, reduce congestion.	Low	Low	Ongoing	Borough Engineer	Record of promotional activity	AP 12 AP 13

Planned Actions	Impacts	Air Quality Improvement High/Med/ Low	Cost Impacts High/Med/ Low	Timescale Short/Med/ Long	Responsibility	Expected Output *(How the planned action will be monitored and assessed)*	Link to GM Action Plan
Promote an integrated public transport system.	Allow the public to choose from a variety of accessible alternatives to the car.	Low/Med	Low/High	Ongoing	Borough Engineer	Record of promotional activity	AP 12
Manage public parking to encourage the use of public transport rather than the car.	Promote the use of public transport, reduce congestion.	Low	Low/Med	Ongoing	Borough Engineer	Record of any parking measures implemente d to encourage the use of public transport	
Assess current provision of public transport and community needs and work with GMPTE to provide an accessible and suitable service.	Promote the use of public transport by ensuring as far as practicable that it meets the needs of the community.	Low	Low/Med	Ongoing	Borough Engineer	Record of relevent activity	AP 12

Planned Actions	Impacts	Air Quality Improvement High/Med/ Low	Cost Impacts High/Med/ Low	Timescale Short/Med/ Long	Responsibility	Expected Output *(How the planned action will be monitored and assessed)*	Link to GM Action Plan
Support the provision of increased security at Park and Ride car parks.	Encourage motorists, cyclists to use car parks at bus and Metrolink stations.	Low	Med	Med	Borough Engineer	Record of security measures implemente d	AP 13
Examine the feasability of introducing a commuter service on the East Lancashire Railway from Rawtenstall to Bury and beyond	Promote public transport to those people commuting from Rawtenstall to Bury and Manchester and beyond.	Low	Low	Ongoing	Borough Engineer	Record of progress re consideratio n of feasability and appropriate feasability studies	AP 12
Support provision of a new Park and Ride Scheme adjacent to Bury town centre	Promote public transport and improve traffic circulation by creating improved park and ride facilities adjacent to Bury town centre.	Low	High	Ongoing	Borough Engineer	Record of progress re the Park and Ride scheme	AP 19

Planned Actions	Impacts	Air Quality Improvement High/Med/ Low	Cost Impacts High/Med/ Low	Timescale Short/Med/ Long	Responsibility	Expected Output *(How the planned action will be monitored and assessed)*	Link to GM Action Plan
Reduce the volumes of traffic and traffic emissions resulting from Bury MBC employees and activities.							
Implement a Travel Plan for Bury Council. Potential actions include:- • Promotion of car sharing • Encourage alternative means of transport e.g. public transport, walking, cycling etc • Examine the feasibility of implementing a pedestrian/cycle mileage allowance for those Council employees choosing to cycle or walk as an alternative to car use on Council business • Facilitate staff to work from home occasionally and where appropriate • Financial incentives – the Council could examine the feasibility of providing lower interest rates for low emission vehicles when purchased through the Council car loan scheme or encouraging staff to live in the Borough through incentives such as: improved relocation packages.	Shift towards more sustainable forms of transport for Council commuters and Council business, reinforce Council commitment to the environment, reduce emissions, reduce traffic volumes, financial savings for employees.	Low	Low	Short/Med	Borough Engineer	Record of progress re implementation of Travel Plan	AP 21

Planned Actions	Impacts	Air Quality Improvement High/Med/ Low	Cost Impacts High/Med/ Low	Timescale Short/Med/ Long	Responsibility	Expected Output *(How the planned action will be monitored and assessed)*	Link to GM Action Plan
Investigate the feasibility of including a consideration of transport emissions and energy efficiency for insertion into any environmental quality criteria that the authority may wish to introduce.	Reduce emissions from transport and energy production/use.	Low	Low	Med	Head of Financial Services/appropriate Borough Officers	Record of progress re investigation of feasability	
Investigate the feasibility of co-ordinating the supply of goods and services on a corporate basis to reduce the number of delivery journeys necessary.	Reduce transport emissions.	Low	Low	Med	Head of Financial Services/appropriate Borough Officers	Record of progress re investigation of feasability	
Reduce emissions from non road traffic sources							
Promote improved energy efficiency in the industrial and commercial sector by continuing to support the work of the Groundwork Business Environment Association Bury . Their activities include:-	Reduce $N0_2$ and particulate emissions, financial savings						AP 39

Planned Actions	Impacts	Air Quality Improvement High/Med/ Low	Cost Impacts High/Med/ Low	Timescale Short/Med/ Long	Responsibility	Expected Output *(How the planned action will be monitored and assessed)*	Link to GM Action Plan
• *Continue the Energy Efficiency Award for companies showing the greatest achievement*		Low	Low	Short (annually)	Groundwork Business Environment Association	Case studies are evaluated and the award is presented annually.	
• *Raising awareness of energy efficiency amongst businesses in Bury MBC*		Low	Low	Long	Groundwork Business Environment Association	Records of Health, Safety and Environmental Reviews and Waste Reviews that are carried out in companies. Numbers of Training/Work shops held	

Planned Actions	Impacts	Air Quality Improvement High/Med/ Low	Cost Impacts High/Med/ Low	Timescale Short/Med/ Long	Responsibility	Expected Output *(How the planned action will be monitored and assessed)*	Link to GM Action Plan
• *Provision of technical advice to assist companies to implement energy efficiency measures and savings*		Low	Low	Long	Groundwork Business Environment Association	Records of Health, Safety and Environmental Reviews and Waste Reviews that are carried out in companies. Training/Work shops	
• *Promoting take up of free energy surveys through "Action Energy"*		Low	Low	Long	Groundwork Business Environment Association	Numbers of seminars and events held and recording information on our helpline facility and recording the number of customer care visits	

Planned Actions	Impacts	Air Quality Improvement High/Med/ Low	Cost Impacts High/Med/ Low	Timescale Short/Med/ Long	Responsibility	Expected Output *(How the planned action will be monitored and assessed)*	Link to GM Action Plan
• *Promoting improved energy efficient systems by providing advice and access to grant assistance*		Low	Low	Long	Groundwork Business Environment Association	Records of the number of direct mailouts, customer care visits, and seminars and events	
• *Promoting "Enhanced Capital Allowance Scheme"*		Low	Low	Long	Groundwork Business Environment Association	Records of the number of H,S & E reviews, seminars and events, helpline enquiries	

Planned Actions	Impacts	Air Quality Improvement High/Med/ Low	Cost Impacts High/Med/ Low	Timescale Short/Med/ Long	Responsibility	Expected Output *(How the planned action will be monitored and assessed)*	Link to GM Action Plan
• *Arranging seminars for local businesses*		Low		Short	Groundwork Business Environment Association	Records of the number of seminars held each year to tackle many environmental issues, including air quality.	
• *Encouraging the use of renewables or energy from waste where appropriate*		Low	Low	Long	Groundwork Business Environment Association	Records of the number of H,S & E reviews, seminars and events, helplines enquiries	

Planned Actions	Impacts	Air Quality Improvement High/Med/ Low	Cost Impacts High/Med/ Low	Timescale Short/Med/ Long	Responsibility	Expected Output *(How the planned action will be monitored and assessed)*	Link to GM Action Plan
• *Use of " energy monitor" in businesses to measure energy and reduce consumption or raise awareness of faults*		Low	Low	Medium	Groundwork Business Environment Association	The BEA offer an indicative energy monitoring service to all subscribers. Full energy surveys can also be carried out, if deemed necessary. Records of all actions are recorded	
• *Provide technical advice on air pollution from processes and promote reductions pollution*		Low	Low	Long	Groundwork Business Environment Association	Recording the number of H,S & E reviews, seminars and events, helpline enquiries	

Planned Actions	Impacts	Air Quality Improvement High/Med/ Low	Cost Impacts High/Med/ Low	Timescale Short/Med/ Long	Responsibility	Expected Output *(How the planned action will be monitored and assessed)*	Link to GM Action Plan
• Continue to promote the take-up of grants to improve the environmental performance of industrial and commercial operations		Low	Low	Long	Groundwork Business Environment Association	The BEA offer a free funding seminar each year detailing all grants to businesses, especially highlighting environmental grants	
Continue to implement, develop and monitor the Home Energy Conservation Act (HECA) Strategy.	Reduce energy consumption in domestic properties, reduce emissions from burning of fossil fuels, financial savings for housedholders.				Borough Environmental Services Officer/ Borough Housing Officer/Borough Operational Services		AP 36

Planned Actions	Impacts	Air Quality Improvement High/Med/ Low	Cost Impacts High/Med/ Low	Timescale Short/Med/ Long	Responsibility	Expected Output *(How the planned action will be monitored and assessed)*	Link to GM Action Plan
Measures under this strategy include:- • Continue installing energy efficiency measures in public sector housing stock		Low	Med/High	Ongoing	Borough Housing Officer/Borough Operational Services Officer	Annual HECA progress report	
• Improve energy efficiency in private sector residential properties by means of installation of insulation measures and awareness raising to encourage behavioural changes		Low	Low	Ongoing	Borough Environmental Services Officer	Annual HECA progress report	
• Promote use of the Energy Show House to provide and demonstrate energy efficiency advice to residents Advise on grants & schemes to give residents financial help to implement energy improvements.		Low	Low	Short	Borough Environmental Services Officer	Records of publicity and records of customer visits and enquiries and advice offered	

Planned Actions	Impacts	Air Quality Improvement High/Med/ Low	Cost Impacts High/Med/ Low	Timescale Short/Med/ Long	Responsibility	Expected Output *(How the planned action will be monitored and assessed)*	Link to GM Action Plan
• Work in partnership with the North Manchester Energy Efficiency Advice Centre (NMEEAC) utilising their services to support energy efficiency		Low	Low	Ongoing	Borough Environmental Services Officer/Borough Housing Officer/ Borough Operational Services Officer	NMEEAC annual report	
• Promote the use of renewable sources of small-scale energy generation e.g. solar power in domestic premises when and where it is felt practically and economically feasible.		Low	Low	Ongoing	Borough Environmental Services Officer/Borough Housing Officer/ Borough Operational Services Officer	Environmental Health Database will provide appropriate records	

Planned Actions	Impacts	Air Quality Improvement High/Med/ Low	Cost Impacts High/Med/ Low	Timescale Short/Med/ Long	Responsibility	Expected Output *(How the planned action will be monitored and assessed)*	Link to GM Action Plan
Improve energy efficiency in Council owned corporate buildings by such measures as:-	Reduce energy consumption in Council corporate buildings, reduce emissions from gas, solid fuel and oil burning, financial savings						AP 39
• Ongoing capital programme of boiler replacements and upgrading of heating controls		Low	Med	Ongoing		Record the number of boilers replaced and controls upgraded	
• Investigate the feasibility of installing a solar water-heating panel to heat hot water in one of the Council's administrative buildings		Low	Med	Med/Long		Identify and implement an appropriate project	
• Set and publish Council targets and performance in relation to energy reductions		Low	Low	Ongoing		Performance Indicator BV180a records council performance	

Planned Actions	Impacts	Air Quality Improvement High/Med/ Low	Cost Impacts High/Med/ Low	Timescale Short/Med/ Long	Responsibility	Expected Output *(How the planned action will be monitored and assessed)*	Link to GM Action Plan
• Implement Combined Heat and Power wherever appropriate and economically feasible		Low	Med/High	Ongoing		Appropriate scheme identified and implemented	
• Audit corporate buildings and develop a programme of improvements prioritising the least efficient buildings		Low	Low	Short		Progress reported under Best Value Performance indictor BV180a	
• Carry out/ promote basic energy efficiency work (e.g. draught-proofing and other insulation measures)		Low	Low	Ongoing		Record of actual measures implemented	
• Continue to offer financial loans for energy conservation measures		Low	Med	Ongoing		Records of financial incentives issued	

Planned Actions	Impacts	Air Quality Improvement High/Med/ Low	Cost Impacts High/Med/ Low	Timescale Short/Med/ Long	Responsibility	Expected Output *(How the planned action will be monitored and assessed)*	Link to GM Action Plan
• Consider making an officer within each Council building responsible for monitoring fuel use, raising awareness and seeking to make improvement • Seek to access grant aid for energy efficiency measures		Low Low	Low/Med Med/High	Ongoing Ongoing		Officers appointed Grants identified and applied for and received	
The Council will consider potential exceedences of NAQS objectives when setting emission limits for processes requiring authorisation under the Environmental Protection Act 1990.	Suitable control of emissions from industrial processes.	Low	Low	Ongoing	Borough Environmental Services Officer	Number of new processes authorised	AP 34

Planned Actions	Impacts	Air Quality Improvement High/Med/ Low	Cost Impacts High/Med/ Low	Timescale Short/Med/ Long	Responsibility	Expected Output *(How the planned action will be monitored and assessed)*	Link to GM Action Plan
The Council will liaise with the Environment Agency to ensure that potential exceedences of NAQS objectives are considered when setting limits for processes requiring authorisations under the Environmental Protection Act 1990.	Suitable control of emissions from industrial processes.	Low	Low	Ongoing	Borough Environmental Services Officer	Number of new processes authorised	AP 34
Ensure that the revised UDP contains positive policies to encourage on-site energy generation, reduced energy use and pollution through the design, and construction of new development e.g. in terms of layout, use of materials provision, promotion of CHP in new development etc.	Reduced energy use and pollution, financial savings.	Low	Low	Ongoing	Borough Planning Officer	UDP policy will apply to all new developments and any significant acheivement in relation to energy efficiency and pollution control will be recorded.	AP 31

Planned Actions	Impacts	Air Quality Improvement High/Med/ Low	Cost Impacts High/Med/ Low	Timescale Short/Med/ Long	Responsibility	Expected Output *(How the planned action will be monitored and assessed)*	Link to GM Action Plan
Ensure that the air quality impacts of proposed potentially polluting operations are assessed as part of the planning process. Assessment results can then be considered with all other relevant information relating to a planning application.	Allow air quality issues to be addressed and emissions to be suitably controlled where appropriate, reduced nuisance.	Low	Low	Ongoing	Borough Planning Officer	Recorded numbers of developments where assessments were required and evaluated as part of the planning processs	AP 32
Proactively promote energy efficiency and low emissions heating and air conditioning systems in new developments.	Reduce emissions, financial savings.	Low	Low	Ongoing	Borough Planning Officer	Recorded numbers of low emissions heating/air conditioning systems installed in new developments	AP 30 AP 39 AP 38

Planned Actions	Impacts	Air Quality Improvement High/Med/ Low	Cost Impacts High/Med/ Low	Timescale Short/Med/ Long	Responsibility	Expected Output *(How the planned action will be monitored and assessed)*	Link to GM Action Plan
Raising Awareness re Air Quality							
Publish real time air quality monitoring results	Raise awareness re air quality in the Borough.	Low	Low	Short/Med	Borough Environmental Services Officer	Progress re publication of air quality monitoring results	AP 41
Support National Initiatives such as European Car Free Day.	Raise awareness re air quality issues and options available to reduce pollution.	Low	Low	Ongoing	Borough Environmental Services Officer/ Borough Engineer	Reocrd of initiatives supported	AP 45
Use the Bury Environment Fair to raise awareness re Air Quality and related issues.	Raise awareness re air quality issues and options available to reduce pollution	Low	Low	Annually	Borough Environmental Services Officer	Record of activity at Bury Environment Fair	AP 45 AP 46

Planned Actions	Impacts	Air Quality Improvement High/Med/ Low	Cost Impacts High/Med/ Low	Timescale Short/Med/ Long	Responsibility	Expected Output *(How the planned action will be monitored and assessed)*	Link to GM Action Plan
Increase awareness and understanding of Council staff on energy efficiency and implications of car use and beneficial actions they can take.	Reduce energy consumption in Council and domestic properties, reduce emissions from gas, solid fuel and oil burning, reduce emissions from car use, financial savings.	Low	Low	Short	Borough Environmental Services Officer/ Borough Engineer	Record of awareness-raising activity	AP 42 AP 46 AP 20
Monitoring Air Quality							
The Council will continue to operate the existing monitoring network in Bury MBC.	Allow measurement of progress over the period of the Action Plan.	None	Low/Med	Ongoing	Borough Environmental Services Officer	Measurement of air quality and trends in air quality	AP 35 AP 41

What Options Require Partnership action by others

A2.31 It will not be possible for the Council alone to deliver many of the above actions. The assistance of other partners will be essential to the success of the Action Plan.

A2.32 Some of the potential partners are detailed below. However it is not possible to produce an exhaustive list and it is likely that other significant partners will emerge as the Action Plan progresses.

A2.33 The Council already has strong partnership connections with the working groups set up to help deliver the Local Agenda 21 Strategy. These groups include members of the public, community groups and other interested external agencies. All of these working groups may be able to input into the delivery of this Action Plan.

A2.34 Much of the Actions Plan will benefit from the involvement of the local community and therefore it would be useful to form partnerships with local community groups, voluntary sector groups, local schools, and area boards. The Safer Routes to School project will specifically require joint working with local schools and Lifelong Learning project workers.

A2.35 The Highways Agency is an important partner in relation to actions aimed at reducing emissions from the motorways in both this borough and the wider Greater Manchester area.

A2.36 Many of the measures relating to public transport will require action by the GMPTE, Metrolink and other public transport operators. The potential operation of commuter services on the East Lancashire Railway will require further development of the existing partnership with the East Lancashire Railway.

A2.37 Measures to promote cycling will be progressed with the valuable input from the Bury Cycling Forum and any actions involving traffic and local safety and security will require close effective liaison with the Greater Manchester Police and the Emergency Services.

A2.38 Some actions will require partnerships and close working with industry and the business community. Enlisting the assistance of the Groundwork Business Environment Association, Bury (GBEA) can facilitate this process. GBEA are already involved in promoting good environmental practice and have many working relationships and contact networks with local commercial operations.

Local Consultation

A2.39 To produce this action plan Environmental Services Officers have worked closely with the Councils Transportation Officers and Planning Officers. At the time of the production of the Action Plan the Council was also in the process of producing the Climate Change Strategy which addressed similar issues. This strategy was produced by a team of officers including: - a Councillor, Director of Competitive Services, Environmental Services Officers, Transportation Officer, Planning Officer, Energy Manager, Council Fleet Manager, Environmental Policy Development Officer, Waste Management Officer, Energy Efficiency Officer and Council Engineers.

A2.40 In developing the Climate Change Strategy the team identified many actions that were also appropriate for inclusion in the Air Quality Action Plan and therefore this group served a dual purpose and thereby maximised officer time.

A2.41 In relation to public consultation, opinions on air quality actions were sought when consulting on the proposed AQMA. The ten Greater Manchester Authorities published a colour brochure detailing proposals, inviting comment on the proposed AQMA and also requesting a choice of preferred means for reducing air pollution.

A2.42 In Bury 7,000 leaflets was distributed door-to-door, and 3,000 were distributed in public places, libraries, Council buildings etc., and also to local interest groups i.e. Friends of the Earth and commerce. Press releases were issued and public displays set up at local libraries.

A2.43 Of all the responses across Greater Manchester, 22% came from Bury. The results indicated that 75% of all respondents agree with the proposed AQMA.

A2.44 This consultation exercise indicated that 23% of respondents felt that the Council should be concentrating on encouraging the use of public transport. This was the most popular choice followed by "reducing emissions from industry". The least popular option was to charge firms who provide free parking.

A2.45 These findings have helped to confirm that existing proposals in the LTP to promote public transport are acceptable to the public. It has also helped to guide the content of this local Air Quality Action Plan in that an attempt has been made to ensure public transport promotion receives sufficient attention.

A2.46 Although industrial emissions were not found to be as significant as transport emissions in Bury, this is clearly an area of concern to the consultation respondents and therefore the Action Plan includes various actions to ensure industrial emissions are suitably controlled.

Conclusions

A2.47 Bury's review and assessment of air quality completed in 2000 indicated that the national objectives for both $N0_2$ and PM_{10} were unlikely to be met in a large area of the borough. This area was declared an Air Quality Management Area in April 2002 and then, as required by legislation, Bury Council along with its neighbouring local authorities in Greater Manchester began work on an Air Quality Action Plan.
It was decided that this Action Plan would have two elements (1) a sub-regional element which would detail sub regional issues and actions and (2) local annexes that would provide further detail on air quality and proposed actions specific to each local authority. This local annex for Bury MBC provides background information on air quality in the borough and looks in more detail into the sources of pollution problems. This consideration of sources of pollution shows that the largest percentage of emissions of $N0_2$ and PM_{10} are generated by road transport on the busiest roads and motorways in the borough. Of the sources of road transport it was found that emissions from goods vehicles and car journeys over 8km made the largest contribution to exceedences of the national objectives.

A2.48 This annex also describes the local actions that will be taken in Bury in pursuit of the objectives for $N0_2$ and PM_{10}. As transport is the main source of emissions many actions are aimed at reducing traffic pollution. However there are also measures to reduce emissions from industrial, commercial, council and domestic sources. It is anticipated that this comprehensive range of local measures will work in conjunction with and complement the Greater Manchester–wide actions to achieve a significant improvement in local air quality.

Annex 3
Manchester City Council

Introduction to the area

A3.1 As the Regional Centre for the North West and home of the largest British Airport outside London, Manchester is the region's principal economic driver. In 2000, the estimated population of the City, which covers an area of 11,582 hectares, was 439,549, giving a relatively high population density of 38.1 persons per hectare. At that time, over 283,000 people worked in the City's 16,642 businesses, 14,800 of which were classified as small business organisations (i.e. with 24 or fewer employees). The largest proportion of businesses were in the financial and business services sector, which accounted for over 31% of all businesses in the City and about 26% of all employees. 119 businesses employed more than 300 workers and over 1 in 4 companies were involved in sales and related businesses. Clearly, this level of employment generates significant commuter activity involving all modes of travel including motorised forms with their concentrated energy consumption and potential adverse impacts on air quality.

Summary of Review and Assessment results

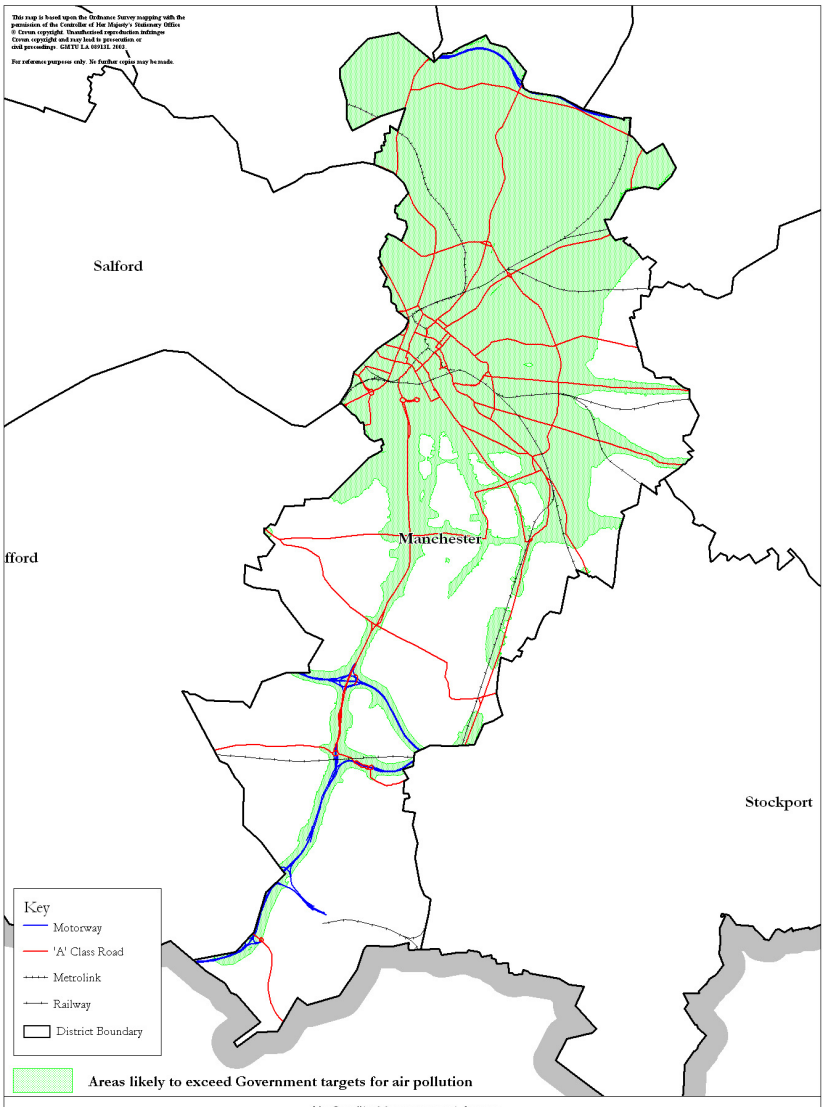
A3.2 The Air Quality Review and Assessment for Manchester was published in June 2000, and following an extensive public consultation exercise, the Council declared an Air Quality Management Area (AQMA) with effect from 31 July 2001:

A3.3 The shaded area on the map figureA3.1, represents the AQMA, where the annual average concentration of nitrogen dioxide (NO_2), including a margin of safety, is likely to exceed the health-based objective set by the Government for 2005. The area covers the city centre, and areas to the north and south of the city. Outside of the city centre the AQMA follows the trunk road network. The main sources of NO_2 (and similarly for the second pollutant of concern, fine particles or PM_{10}), are vehicle exhausts and emissions from industry.

Strategic context related to air quality

A3.4 The Manchester Community Strategy (MCS) establishes mechanisms for delivering improved public services. The progress of the MCS will be measured against key indicators, including air quality. The air quality indicator is " the number of days on which air pollution reaches moderate or worse for any of the 4 pollutants identified by Government", and the results since 1996 are shown in table A3.1.

Figure A3.1 Manchester City Council's Air Quality Management Area



Air Quality Management Areas

Figure A3.1 — The green areas represent results from computer modelling indicating areas which are likely to exceed the annual nitrogen dioxide standard in 2005.

Table A3.1 Manchester Air Quality Indicator

Year	Number of days of 'moderate' or worse air quality
1996	46
1997	19
1998	18
1999	11
2000	12
2001	41
2002	5

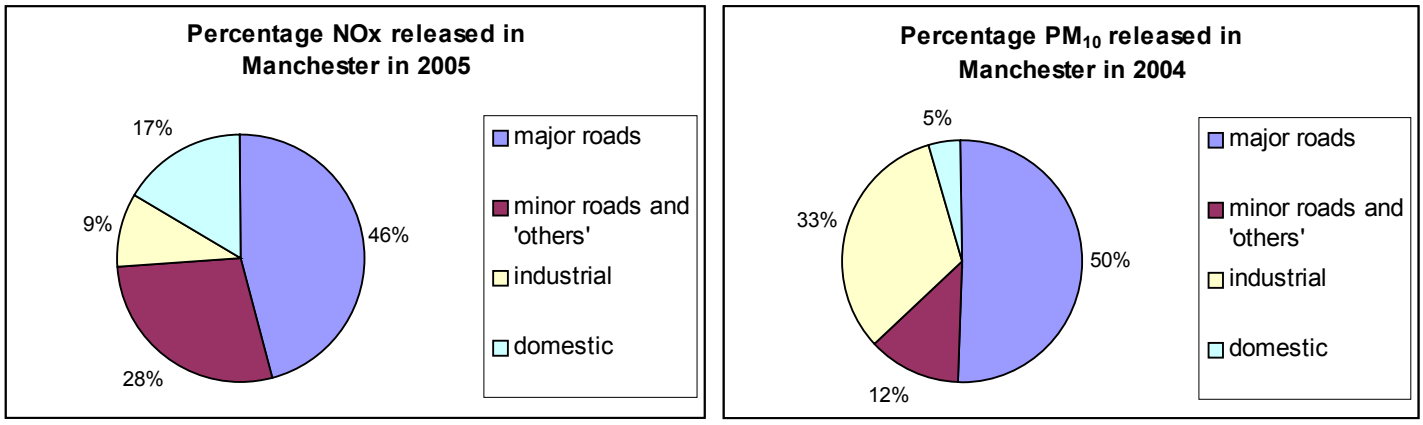
A3.5 The Unitary Development Plan (UDP) adopted in 1995 emphasises the continual growth of the regional centre, growth of the Airport, and regeneration of mixed neighbourhoods and centres. Integral to these aims is the provision of high quality, fully integrated, safe and sustainable transport, embracing walking and cycling as well as public transport, to reduce car dependency and thus helping to deliver health and environmental improvements in the City.

A3.6 The Greater Manchester LTP lays down the framework by which carefully targeted transport investment will contribute to these community improvements (see Section A3.11).

Sources of pollution in the area

A3.7 The Emissions Inventory of Greater Manchester Authorities ('EMIGMA') was first released in 1997, and covers an area of 1552km^2 encompassing the ten districts of Greater Manchester and Warrington. The EMIGMA database is a compilation of all identifiable emissions to air, and is mapped on a 1km^2 grid. The emissions' estimates are subject to annual updating. A breakdown of the main sources of nitrogen oxides ('NOx') and PM_{10} in Manchester, projected forward for the respective target years of 2005 and 2004, is as follows:

Figure A3.2 Relative contribution of different sources of NOx and PM_{10}



A3.8 The major source of both pollutants is the road network, and a further breakdown shows that a large percentage of road emissions in Manchester is from roads carrying greater than 10,000 vehicles AADT (Annual Average Daily Traffic Flow) which includes motorways:

Table A3.2 Percentage contribution to total NOx emissions from road transport in the City of Manchester

		Road links under 10,000 AADT	**Road links over 10,000 AADT**	***Motorways****
Goods vehicles		**3.6**	**61.3**	*23.6*
Buses		**1.4**	**10.4**	*0.0*
Cars and motorcycles (total)		**1.5**	**21.8**	*6.5*
	Car journeys over 8km	*0.7*	*15.9*	*6.3*
	Car journeys between 3 and 8km	*0.6*	*5.0*	*0.3*
	Car journeys under 3km	*0.1*	*0.8*	*0.0*

* *Note motorway percentages are a sub-set of 'roads > 10,000 AADT'*

A3.9 A dispersion source apportionment modelling study was undertaken in 2001/02 to determine the contribution of various source categories to the NO_2 and PM_{10} *concentrations* which had previously been predicted. The highest annual average concentration of NO_2 predicted in the city was 41.3 ug/m^3 at roadside locations close to Princess Road in the South of the city. This location would require a 5% reduction in emissions of NOx in order to achieve the air quality objectives. This study again highlighted HGVs and longer car journeys, (those over 8km), as the main contributors to the predicted elevated annual mean nitrogen dioxide concentrations.

What is being done already (including Partnerships)

A3.10 Although transport has been highlighted as the major source of air pollution in Manchester, there are a large number of ongoing short and medium term strategies across the Council that will impact beneficially on air quality. For the purposes of this local action plan, these have been categorised under four general headings:

- transport
- energy use
- enforcement
- others (including planning policies, retail and business strategies etc)

Transport

A3.11 The Council's transport strategy is set out in the Greater Manchester Local Transport Plan (GMLTP). Air quality improvements are linked to the delivery of LTP objectives, central to which is reducing car use, particularly by commuters during peak travel periods. This will be achieved by a combination of infrastructure investment, working with transport operators, users and stakeholders and the integration of land use and transport policies.

A3.12 The Council's two main areas of capital programme activity which have the potential to improve air quality, are set out below. These cover respectively the major strategic schemes (table A3.3) and minor local transport/highway improvements (table A3.4) which are geared to making the best of the local network and will help to reduce emissions overall.

A3.13 A specific target is a shift in the mode of travel to the regional centre away from the private car, reducing from approximately 50% now to 44% by 2005. Two of the major schemes outlined below, completion of the Inner Relief Route and the Metrolink extensions, are aimed at reducing commuter and through-traffic.

Table A3.3 Major Transport Schemes in Manchester
On-going schemes or those planned to start within the next 2 years are set out in the table, together with delivery agency, scheme purpose, and expected completion date.

Scheme	**Agency**	**Scheme and Purpose**	**Completion by:**
City Centre Inner Relief Route **£30m**	Manchester & Salford CCs	Completion of ring road, removing through traffic enabling: **i.** pedestrianisation; **ii.** increased public transport; **iii** efficient traffic management.	Summer 2004
Urban Traffic Control **£5.5m**	Manchester	Modern countywide traffic signal system enabling: **i.** bus, cycle and pedestrian priority; **ii** smooth traffic.	March 2006
Shudehill Interchange **£7.5m**	Manchester CC and GMPTA	Metrolink station in association with new bus stands at Shudehill to allow better interchange between bus and rail to help promote an increase in Public Transport patronage.	December 2004
Northern Orbital Quality Bus Corridor (QBC) **£9.7m Start 2003/04**	GMPTA /E: working with Manchester Rochdale, Bury and Bolton .	Integrated improvements on key travel corridors between Rochdale, Bury and Bolton and between Rochdale and Manchester City Centre, involving: **i.** priorities for buses, cyclists and pedestrians; **ii.** reduced time and space for motorists, especially at peak periods; **iii.** road and signal changes to relocate traffic queues outside centres.	March 2006
SEMMMS QBC **£23.9m Start 2002/03**	GMPTA/E: with Stockport, Tameside Trafford Manchester	Integrated improvements on main travel corridors clockwise round from Hyde Road (A57) between Hyde centre and the City Centre, to the Airport Skyline bus services and Northenden to City Centre and the orbital corridor from Stockport centre to Urmston via Didsbury/Chorlton and Stretford. Purpose as for the Northern Orbital QBC.	March 2006
Metrolink Single Contact **c£800m**	GMPTA/E	New Metrolink routes from the City Centre to: **i.** Rochdale via Oldham; **ii.** Ashton-u-Lyne via East Manchester; **iii.** Airport via Chorlton and Wythenshawe; with the possibility of spurs off, to provide extensions to: **iv.** Didsbury (and possibly through to Stockport) **v.** the Lowry Centre **vi.**Trafford Ctr (subject to private sector funding) Lines **i** to **iii** to take 5.9 million car journeys/annum off roads no assessment yet made of **iv** to **vi**. (Existing lines already offer reductions of 3.5 million cars/ annum).	March 2008
North Manchester Business Park Transport Gateway **£34m Start 2003/04**	City & GMPTA City	New Transport Gateway off Oldham Road to integrate bus/Metrolink/heavy rail services for New East Manchester. Central to NEM's sustainable transport strategy, it is crucial to the Business Park, Phase 1 of which will bring 4,500 jobs over next 5 to 7 years, with the full Business Park providing 20,000 jobs in 15 years.	First stage of Interchange May 2005

The local network

A3.14 The way in which transport can support regeneration is exemplified by New East Manchester's sustainable transport strategy. It is based on:

- strong public transport services with safe infrastructure and good, direct external connections;
- clear strategic traffic routes away from residential communities;
- clear, safe and secure pedestrian and cycling routes.

The aim is to link people with jobs and facilities in ways which are not reliant on the car, to protect communities from through traffic and to foster an environment which promotes local services and their accessibility by bike or on foot.

A3.15 There are a number of other planned highway/transport improvements which, whilst led by concerns for road safety, have the potential to reduce the impact of the car on local communities. Examples include the recent award of £1m for a high street safety scheme in Rusholme, and the £3m Northmoor Homezone scheme.

The Airport

A3.16 In 2002 there were 94,800 aircraft departures and arrivals at Manchester Airport, and the airport was used by 19,370,880 passengers. The impact of predicted future growth on air quality is clearly a regional issue (see Section 4.92 in the main report). The Ground Transport Interchange is a major investment in a partnership between the Airport and the Strategic Rail Authority, GMPTE, the Government and the EU to provide a transport hub of train, Metrolink, bus and coach services. As a major employer in the area however, there are also issues associated with Airport staff travelling to and from work. Investment in the 'Skyline' Quality Bus Partnership is aimed at providing improved local services and extended hours of operation for workers.

A3.17 Assuming that levels of activity and investment remain relatively constant beyond the current Plan period, the City should benefit from a fully sustainable transport network by 2020. However, investment during this first Local Transport Plan is targeted towards the areas with the greatest transport problems so that this, together with SEMMMS related actions, should deliver considerable improvements by 2006.

Table A3.4 The minor highways/transport capital programme

The minor works programme is set out in the table and indicates the main areas of capital improvements with positive impacts on car traffic and commercial vehicles emissions.

Programme area	2001/02 Budget £000s	Draft 200/03 £000s	Scheme type/purpose
Street lighting	204	200	improve street lighting in residential areas, to public transport and local facilities to encourage more walking/cycling and public transport use.
Pedestrians	758	748	area networks, individual pedestrian routes, links to public transport, improved road crossings, to promote walking, especially for local trips.
Speed management/ traffic calming	1,610	1,550	area 20mph zones, main road speed reduction, area traffic calming home zones, "high street" safety schemes, speed cameras. Reducing speed and unwanted through traffic in centres or residential areas.
Disabled peoples' access routes	200	245	highway adaptations on links to public transport, local services and facilities to enable people to use the network without having to rely on a car.
General Improvements	900	900	schemes addressing traffic congestion, bus circulation, centres, freight routes, strategic signing with the potential to improve air quality.
Travel Plans	50	50	small schemes in support of Travel Plan work with the City's major employers.
Safer Routes to Schools	125	185	highway/bus infrastructure improvements and educational work to promote more journeys to school on foot, by bike or public transport.
Parking	90	100	resident parking schemes on the fringe of the City Centre to reduce commuter parking and completing journey on foot. Potential benefits high around the congested centre.
Quality Bus Corridors (QBC)	1,397	721	additional to the major QBC schemes, to introduce QBCs from City Centre to Oldham, Stockport, Bury, Altrincham and Ashton-u-Lyne.
Cycling	240	350	secure cycle parking, on and off highway routes, cycle signing, links from local roads to longer distance leisure cycle routes to open them up for local trips.
GMPTA investment	~15m pa		Ongoing investment programme including: Improved public transport information, quality and safety improvements at stops, promotion of school bus services, cycle parking at stations, drop-off and ride facilities at rail and Metrolink stations, subsidising unprofitable public transport services, developing quality Partnerships with bus operators.

Energy use

A3.18 The Council has set an energy saving target for its non-domestic building stock of a 2%, year on year, reduction in energy use over the next 5 years. This amounts to 2000 tonnes saving of carbon dioxide each year (which with certain assumptions on fuel type equates to 2 tonnes of NO_2 and 0.12 tonnes of PM_{10}).

A3.19 The formulation and adoption of an Energy Policy for the Council's non-domestic buildings will be a key factor in bringing about the energy and environmental improvement targets set. The policy will set out corporate standards for the procurement, use and conservation of energy, identify key responsibilities for energy use, and provide advice and information to support energy conservation.

A3.20 From April 2002, all electricity used in the Town Hall, Town Hall Extension and Central Library has been from green sources, representing approximately 5% of the total use in Council buildings. In addition, all electricity used in Manchester's 55,000 street lights is also from renewable sources. The green energy is provided via a 'mixed basket' of generation sources. The carbon dioxide emission savings could be as much as 2,400 tonnes per year (equivalent to around 25 tonnes of NO_2) per year.

A3.21 The Home Energy Conservation Act 1995 (HECA) challenged local authorities to improve the energy efficiency of domestic housing within their areas by 30% within 10 to 15 years. In 1996 each local authority was required to publish a HECA Report detailing their long term plans. Progress achieved by Manchester Housing Energy Group, between April 1996 and March 2001 has seen a 7.8% improvement in the energy efficiency of domestic dwellings. The amount of CO_2 saved over this 5 year period has been 123,000 tonnes.

A3.22 To achieve the continuing saving of CO_2 the activities being pursued include raising awareness of energy efficiency issues, promoting energy efficiency to Manchester residents, focusing on 'fuel poor' households, working with community groups, health workers and securing funding for delivery of projects. The team has a dedicated energy database, which currently has energy data on 100,000 of the 188,000 homes in Manchester. The main database is used to target areas for promotion and to report on progress.

A3.23 Manchester Housing's Energy Group manage the Greater Manchester South Energy Efficiency Advice Centre, launched in October 2001. Manchester is in partnership with Salford, Stockport, Tameside, Trafford and Wigan covering approximately 750,000 households and is part of a network of 53 Energy Efficiency Advice Centres (EEAC) funded by the Energy Saving Trust. The EEACs provide free, impartial advice to householders in the form of a Home Energy Check Report and give information about energy efficiency grants and schemes available in their Local Authority area. Such management and advice on domestic energy savings will contribute to reductions in emissions locally and across the region.

Education and enforcement

A3.24 Historically, large reductions in black smoke and sulphur dioxide were achieved under the Clean Air Acts. Smoke Control Orders have covered the whole of the City since 1985. Since measurements began in 1959, the winter daily average levels of both these pollutants have fallen by over 96%. The commitment to ongoing publicity about air pollution and related campaigns continues, and supports many of the local actions outlined in this report; recent examples being leaflets about Air Pollution in Manchester and Local Air Quality Management and the development of a Greater Manchester web site at www.mapac.org.uk.

A3.25 In 2001 the Council signed up to the Government's 'Good Enforcement Concordat', and has developed a draft corporate enforcement policy which lays down commitments on standards, openness, proportionality and consistency which will underpin defined policies and procedures.

A3.26 The Council has a clear policy on responding to complaints about bonfires, and sites will be visited, advice on alternatives offered, and when necessary statutory enforcement action is taken. In an ongoing joint campaign with the Fire Service in Wythenshawe, Council leaflets advising on alternatives to burning waste are being issued by fire officers after call-outs to fires.

A3.27 Emissions from industrial processes which are regulated by the Council under the Environmental Protection Act 1990 operate within strict pollutant emission limits. Such conditions on process authorisations are enforced by routine site visits, and strict auditing of emission measurements undertaken. New legislation, the Pollution Prevention and Control Act 1999 and further controls under the European Solvent Emissions Directive, will be phased in across different industry sectors up to 2007, and will not only require stricter limits but will also bring a number of smaller industries into the regulated system, maintaining the downward trend in air pollution emissions from industrial sources.

A3.28 The Greater Manchester authorities' have established a Greater Manchester Cleaner Vehicles Campaign. This comprehensive campaign addresses the problems of badly maintained and older vehicles which contribute a disproportionate amount of the pollution from the transport sector. Research indicates that there are significant numbers of such vehicles in urban areas and that an intensive campaign could achieve significant improvement within the current timescale. To be effective the campaign involves a coordinated approach across the Greater Manchester local authorities and is founded upon a well publicised, partnership approach within the Council and with related external agencies such as the Vehicle Inspectorate and local businesses. Essential elements of the campaign are publicity, and practical support by means of technical advice and free vehicle testing, backed up by enforcement action where appropriate.

Other Sources

The City Council Vehicle Fleet

A3.29 As part of its own fleet management policy, there are already 1 CNG and 3 LPG fuelled vehicles in use. In 2002, there were 24 Council vehicles (and 21 others owned by Greater Manchester Waste) fitted with Continuously Regenerating Trap (CRT) exhaust systems. CRT is effective in reducing particulate emissions (to well below Euro 4 standards). Furthermore, the Council undertook the following commitments (agreed at the February 2002 Scrutiny Committee):

Table A3.5 Council Vehicle Fleet commitments

To continually assess fuels for each vehicle type on the basis of key emission levels for each procurement exercise
To seek tenders for alternative fuel options with a presumption that the lowest emission vehicles will be purchased unless they are prohibitively expensive or not fit for purpose
To promote the City's existing use of low emission and alternative fuelled vehicles to similar business practices
As part of developing policies in purchasing environmentally preferable materials encouragement will be given to suppliers and contractors to use low emission fuels
The Council will investigate the potential for providing incentives to encourage low emission vehicles such as via car parking charges

Planning Controls

A3.30 One of the objectives of the 1995 Unitary Development Plan for the City of Manchester was to foster the cleanest city in the region. It acknowledged improved air quality has benefits at both a local and global scale. Fostering a cleaner and less polluted city involves reducing levels of air pollution. This is dealt with in policy E1.1 which states the Council wishes to substantially reduce levels of air pollution and it will do this by promoting public transport and cycling, improving conditions for pedestrians, discouraging the use of the private car for peak time trips to the City Centre and other major employment areas and require all major new development to be located where it can be easily served by public transport. Area Policy EM99 relating to the Medlock Valley states that development will not be permitted which would result in a deterioration of atmospheric quality.

A3.31 Energy conservation is dealt with in policy E1.5 which states the Council will contribute towards energy conservation by ensuring where practicable that new major development is located where it can be easily served by public transport and encouraging high standards of energy efficiency in new development. The Housing Chapter reiterates this point by stating development will not be permitted if it is likely to have an unacceptable impact on residential areas.

A3.32 The East Manchester section of the UDP is currently being updated and is at the revised deposit stage. It seeks a pattern of development that promotes sustainability, including improving air quality. This is a policy which will apply to all development within East Manchester and key aspects of infrastructure are being developed including the extension of the Metrolink, two quality bus corridors, pedestrian and cycle routes along the Ashton Canal, the preparation of a strategy for the Medlock Valley exploring various aspects including pedestrian and cycle routes. All this will contribute to reducing the need to travel by car, promote public transport and ultimately improve air quality.

A3.33 The Council works in conjunction with a number of partners such as the Red Rose Forest Partnership, Groundwork, CTAC and the Forestry Agency to secure more woodland in the City, and improve the management and use of existing woodland. Specific individual projects include the Green Streets Projects and the Newlands project in North Manchester, where feasibility work is being carried out to establish woodland on a 20 hectare closed landfill site. Since 1995 there has been an additional 45 hectares of new woodland planted in the City, the existing woodland cover is 290 hectares, and there are now an estimated 344,000 trees across the city.

Summary of Local Options

Table A3.6 Local actions and potential air quality impacts

Planned Actions	Impacts	Air Quality Improvement	Cost Impact	Timescale	Responsibility	Expected Output	Link to GM Action Plan
Transport							
Major Schemes							
Inner relief route	All are major investment programmes to deliver improved transport infrastructure; esp. Metrolink extension, transport interchange and inner relief route completion. Relief of city centre congestion, enabling pedestrianisation, increased and integrated public transport, efficient traffic management, bus, cycle and pedestrian priority, benefits to shoppers and businesses.	Med	High	Summer 2004	Manchester City Council Operational Services Dept Highways Section, MEDC traffic management engineers, GMPTA and Metrolink management team, Highways Agency for SEMMMS project	To increase the number of people accessing the city by means other than by private car, to 56% of total. To achieve this by improving the speed, quality and reliability of public transport. Metrolink extensions alone will take estimated 5.9 million car journeys per annum off roads. Inner relief route will reduce through traffic using city centre. Success of these schemes will be measured by monitoring proportion of journeys made without car.	
Shudehill Transport Interchange		Med	High	Dec 2004			AP11 AP12
Northern orbital quality bus corridor		Low	High	Mar 2006			AP15
SEMMS quality bus corridor		Low	High	Mar 2006			AP15
Metrolink extensions		Med/High	High	Mar 2008			AP11
N. Mcr Business Park transport gateway		Low	High	First stage complete 2005			AP12

Planned Actions	Impacts	Air Quality Improvement	Cost Impact	Timescale	Responsibility	Expected Output	Link to GM Action Plan
Local Schemes							
Speed management (traffic calming)	Area 20mph zones, main road speed reduction, area traffic calming home zones, "high street" safety schemes, speed cameras. Reducing speed will affect vehicle emissions.	Low/Med	Med	Short/Med	Manchester City Council Operational Services Dept Highways Section, & MEDC	Schemes will reduce speed limit from 30mph to 20 mph, aiming for 85%ile speed >30mph. NO_2 will be measured along two pilot schemes in Rusholme and Wythenshawe.	AP27
Disabled peoples access routes	Highway adaptations on links to public transport, local services and facilities to enable people to use the network without having to rely on a car.	Low	Med	Short/Med	Manchester City Council Operational Services Dept Highway Sctn	Increased use of public transport by disabled citizens, improved accessibility (= reduced car dependance).	AP12
General improvements	Schemes addressing traffic congestion, bus circulation, centres, freight routes, strategic signing	Low/Med	Med	Short/Med	Manchester City Council Operational Services Dept Highways Section	Reductions in use of private car. Separate monitoring regimes for each individual scheme.	AP27
Travel Plans (Council)	Pilot scheme to inform development of City Centre green travel plan for Council staff.	Low/Med	Med	Med	Manchester City Council Chief Executives Dept, Transport Policy Group	Reduced private car dependency by Council staff. Each department will set car use reduction targets.	AP21

Planned Actions	Impacts	Air Quality Improvement	Cost Impact	Timescale	Responsibility	Expected Output	Link to GM Action Plan
Travel Plans (other)	Work with the City's major employers / universities to develop green travel plans	Low/Med	Med	Med	Manchester City Council Chief Executives Dept, Transport Policy Group	Reduced private car dependency by staff/users of major developments and institutions in the City.	AP21
Travel Co-ordinator appointment	To work with schools and employers to develop and promote sustainable travel plans	Low/Med	Med	Med	Manchester City Council Chief Executives Dept, Transport Policy Group	Reduced use of private car for commuter journeys. Each school or workplace will set car use reduction targets.	AP21, AP22
Airport bus subsidies	Provision of financial support to local bus services to benefit local Airport users and employees	Low	Low/med	Ongoing	Manchester Airport Ltd, Ground Transportation Section	To reduce the number of ground vehicle movements per air passenger to 1.35 by 2005, to achieve 10% staff access to site by public transport by 2015.	AP16
Safer Routes to Schools	Highway/bus infrastructure improvements and educational work to promote more journeys to school on foot, by cycle or public transport.	Low/Med	Med	Short/Med	Manchester City Council Education Dept & Chief Execs Dept Transport Policy Group	Reduced use of private car by parents taking children to school. Individual school targets for car use reduction.	AP22

Planned Actions	Impacts	Air Quality Improvement	Cost Impact	Timescale	Responsibility	Expected Output	Link to GM Action Plan
Parking Strategy	Resident parking schemes on the fringe of the City Centre to reduce commuter parking and completing journey on foot. Potential benefits high around the congested centre.	Low	Med	Short/Med	Manchester City Council Planning Dept, Planning Strategy Group	Reduced congestion around the city centre, reducing the appeal and convenience of using the private car for commuting to the city centre.	
Quality Bus Corridors (QBCs)	Additional to the major QBC schemes, to introduce QBCs from City Centre to Oldham, Stockport, Bury, Altrincham and Ashton-u-Lyne.	Low/Med	High	Med	Manchester City Council Chief Executives Dept, Transport Policy Group, & GMPTE	Improving the speed of bus services, and increasing the reliability of bus journey times, individual targets per route.	AP15
Street lighting	Improve street lighting in residential areas, to public transport and local facilities to encourage more walking/cycling and public transport use.	Low	Med	Med	Manchester City Council Operational Services Dept, Street Lighting Section	Improving security for pedestrians, to encourage modal shift from car to foot.	AP13 AP20

Planned Actions	Impacts	Air Quality Improvement	Cost Impact	Timescale	Responsibility	Expected Output	Link to GM Action Plan
Cycling Strategy	Secure cycle parking, cycle signing, links from local roads to longer distance leisure cycle routes	Low	Med	Short/Med	Manchester City Council Chief Execs Dept Transport Policy Group	Improving safety and security for cyclists, to encourage modal shift from car to bicycle. Success measured by reductions in cyclists involved in traffic accidents.	AP20
Low Emission taxi pilot scheme	Assessment of the impact of retrofitting city centre taxis with CRT particulate traps. 6 taxis with retrofitted CRT on trial in pilot scheme 2003 - 2004.	Low	Med	Med	Manchester City Council Chief Execs Dept, Enforcement & Regulatory Services Group, Licensing Section	Reduction of emissions from taxis, especially in the congested city centre. Modified taxis will be emissions tested.	AP5

Planned Actions	Impacts	Air Quality Improvement	Cost Impact	Timescale	Responsibility	Expected Output	Link to GM Action Plan
Energy Use							
Council non-domestic stock energy saving targets	Implementation of energy efficiency measures across the Council's non-domestic buildings, to reduce emissions from electricity generation, and on site boiler and heating facilities.	Low	Med	Short/Med	Manchester City Council Chief Execs Dept, Regeneration Division	2% year on year reduction in energy use over the next 5 years, amounting to an additional 2000 tonnes saving of carbon dioxide each year, with consequent reductions in NOx emissions	AP39
Council Energy Policy	Sets out corporate standards for procurement, use and conservation of energy in Council's non-domestic buildings	Low	Low/Med	Med/Long	Manchester City Council Chief Execs Dept, Regeneration Division	Corporate standard not yet decided upon, but will set targets for energy efficiency.	AP39
'Green' electricity use	Use of renewable sources in street lighting and Town Hall	Low/med regionally	Med	Short/ Ongoing	Manchester City Council Chief Execs Dept, Regeneration Division	Reduced emissions from power stations	AP39

Planned Actions	Impacts	Air Quality Improvement	Cost Impact	Timescale	Responsibility	Expected Output	Link to GM Action Plan
HECA energy efficiency policy	Implementation of measures under the Home Energy Conservation Act 1995, to reduce emissions from domestic heating facilities.	Low/med	Med	Ongoing	Manchester City Council Housing Dept Energy Group, HECA team	7.8% improvement in the energy efficiency of domestic dwellings in 5 years to 2001, saving 123,000 tonnes CO_2. (Government target of 30% improvement in 15 yrs).	AP36
Energy Advice Centres	A team of Council officers who will facilitate and assist Manchester residents and businesses to reduce emissions from their premises.	Low/med	Med	Ongoing	Manchester City Council Housing Dept Energy Group, HECA team, & Energy Savings Trust	Provision of information/advice, targeting 750,000 households in 6 boroughs, community heating schemes and SMEs	AP36 AP37 AP39
City Energy Strategy	Environmental Action Plan commitment to consider options and feasibility for strategy across the city.	Low/med	Med	Med	Manchester City Council Chief Execs Dept, Regeneration Division	Strategy would seek to set targets for reduction in energy use (and therefore emissions) across the City.	AP36 AP37 AP39

Planned Actions	Impacts	Air Quality Improvement	Cost Impact	Timescale	Responsibility	Expected Output	Link to GM Action Plan
City Centre Strategic Plan	Initiate dialogue with City Centre stakeholders on air quality action plan and energy conservation in support of City Centre Strategic Plan	Med in locality (City Centre)	Low	Short / Medium	Manchester City Council Chief Execs Dept, Regeneration Division	Secure reductions in emissions from boilers and heating systems in City Centre premises.	AP36 AP39 AP46
Enforcement							
Smoke Control and bonfires procedures	Enforcement of Smoke Control Orders across the City and response to domestic and commercial bonfires. This will reduce uncontrolled emissions from these sources.	Low (overall) Med (in localities)	Low/Med	Ongoing	Manchester City Council Environmental Services Dept, Pollution Group	To investigate 95% of reports of bonfires within 48hrs and to carry out enforcement activities when necessary.	AP35 AP44
Anti-bonfire campaign	Working with Fire Officers to distribute leaflets on alternatives to burning waste	Low	Low	Ongoing	Manchester City Council Environmental Services Dept, Pollution Group	Reducing the contribution of bonfires to PM_{10} and SO_2 levels.	AP44
Green Waste recycling strategy	To encourage residents to recycle garden waste, and therefore to discourage the use of bonfires	Low	Low	Ongoing	Manchester City Council Operational Services Dept, Recycling Team	To achieve 15% of household waste being recycled by 2005.	AP44

Planned Actions	Impacts	Air Quality Improvement	Cost Impact	Timescale	Responsibility	Expected Output	Link to GM Action Plan
Regulation of industrial processes	Enforcement of emission limits and other process controls on Authorised or Permitted processes. To review IPPC applications in partnership with the Environment Agency, to ensure that operators are using Best Available Technology to abate emissions.	Low (overall) Med (in localities)	Low/Med	Ongoing	Manchester City Council Environmental Services Dept Pollution Group, & Environment Agency	At least 2 inspections per annum will be carried out for each of the Authorised processes in Manchester . 6 processes currently undergoing IPC application.	AP34
GM Cleaner Vehicles Campaign	Roadside vehicle emission testing and fines system	Med/High	Med/High	Med/Long	Manchester City Council Environmental Services Dept Pollution Group & Environmental Campaigns Team	2 formal testing days and 2 informal information / testing days will be carried out by April 2004. Minimum 4 testing days per annum for duration of the campaign.	AP1
Council Fleet Management Policy							
Procurement	To continually assess fuels for each vehicle type on the basis of key emission levels for each procurement exercise	Low	Low	Long	Manchester City Council Operational Services Dept Transport Section	To encourage the Council to only purchase low emission vehicles.	AP5

Planned Actions	Impacts	Air Quality Improvement	Cost Impact	Timescale	Responsibility	Expected Output	Link to GM Action Plan
Emissions	To seek tenders for alternative fuel options with a presumption that the lowest emission vehicles will be purchased unless they are prohibitively expensive or not fit for purpose	Low	Low	Long	Manchester City Council Operational Services Dept Transport Section	To investigate the possibility of retro-fitting Council vehicles with particulate traps or other emission reduction technology.	AP5
Alternative fuels	To promote the City's existing use of low emission and alternative fuelled vehicles to similar business practices	Low	Low	Long	Manchester City Council Operational Services Dept Transport Section	To investigate the possibility of switching Council vehicles to operate on CNG, LPG or other low emission fuels.	AP5
Promotion of low emission fuels	Encouragement for suppliers and contractors to use low emission fuels	Low/Med	Low	Long	Manchester City Council Chief Execs Dept Transport Policy Group & Operational Services Dept Transport Section	To reduce emissions from Council suppliers and contractors.	AP5

Planned Actions	Impacts	Air Quality Improvement	Cost Impact	Timescale	Responsibility	Expected Output	Link to GM Action Plan
Policy Research	Investigation of the potential for providing incentives to encourage low emission vehicles such as via car parking charges	Low	Low	Long	Manchester City Council Chief Execs Dept Transport Policy Group	To encourage a wider switch to lower emission vehicles.	AP5
Planning Controls							
UDP: Policy E1.1 - *to substantially reduce levels of air pollution*	Public transport promotion, improving conditions for cycling and walking, development to consider access, discouraging use of private car at peak times	Low	Med	Long	Manchester City Council Planning Dept Planning Strategy Group.	Targets for air pollution reduction will be set in light of 'Planning & Compensation Bill' which is due to be enacted in 2004.	AP31
UDP - Policy E1.5 - *to contribute towards energy conservation*	Ensuring high standards of energy efficiency in new development, esp. in housing chapter	Low	Med	Long	Manchester City Council Planning Dept Planning Strategy Group.	Targets for energy efficiency improvement will be set in light of 'Planning & Compensation Bill' which is due to be enacted in 2004.	AP31

Planned Actions	Impacts	Air Quality Improvement	Cost Impact	Timescale	Responsibility	Expected Output	Link to GM Action Plan
UDP - Policy EM2 - East Manchester	Infrastructure developed for safe, integrated access, Metrolink extension, two QBSs, pedestrian and cycle routes etc	Low	Med/high	Long	Manchester City Council Planning Dept Planning Strategy Group.	Additional measures to improve air quality in East Manchester, and targets for air quality improvement will be set during the East Manchester UDP review in 2004	AP31
Planning agreements	S106 agreements to secure mitigation of air quality impacts of major developments	Low	Low/ med	Med/long	Manchester City Council Planning Dept Planning Strategy Group.	Details of the specific measures, and means of monitoring the effectiveness of the measures, will depend upon the nature of the development.	AP33

Local Consultation

A3.34 79% of Manchester respondents to the Greater Manchester consultation exercise *'Clearing the Air'* agreed with the proposed AQMA. In response to questions about what should be done to improve air pollution, the most popular measures were to encourage the use of public transport and reducing emissions from industry. The least popular options were charging motorists to enter towns and the introduction of workplace parking charges.

A3.35 Those Manchester respondents who asked to be kept involved in the air quality management process, together with the main stakeholders such as local businesses, fleet operators, civic bodies, schools as well as local councillors, will continue to be asked for views via a Greater Manchester consultation exercise on options for action planning. Within the Council the Air Quality Steering Group, including representatives from environment, policy, transport, planning, energy and housing will continue to meet on a regular basis to progress the air quality management process.

A Local Action Plan for Manchester

A3.36 The local action Plan for Manchester relies on a wide range of Council driven, cost effective measures supported by those who live or work in the City, in order to improve air quality and meet the health targets. In addition to the comprehensive package of transport measures that seek through the LTP to develop a more sustainable and integrated transport system for Manchester, there are 4 other distinct work areas and 20 actions (summarised in Table A3.6).

A3.37 Predictive modeling of the beneficial impact of these actions however, indicate that by the target year of 2005 pollution 'hot spots' will remain, in the City Centre and by the sides of busy roads, that will not meet the NO_2 Objective. Additional measures that are focused on the main sources of pollution in these particular locations are therefore proposed.

Roadside Emissions Testing

A3.38 Voluntary and mandatory testing of vehicles to ensure vehicles are tuned and maintained to the required standards. Full details are provided in section A3.28.

Air Quality Policies and Regulation

A3.39 The local authority will continue to review its policies with the aim of providing best practice and procedures, to consider their effects on air quality and set an example for other organisations in the City. The Council will continue to lobby the Government to develop further, the policies and legislative framework needed to assist with cleaning the air in Manchester. Central Government policies could do more for example, to encourage the use of cleaner fuels such as LPG and CNG by tax incentives and by assisting with establishing nationwide distribution points and increase the replacement rate of older vehicles by fiscal measures. Assistance for smaller businesses through grants or tax incentives to assist them to replace older

vehicles, could be a vital part of the implementation of a successful LEZ.

The Way Forward

A3.39 The Manchester Action Plan recognises the wider context of the Greater Manchester Regional Action Plan and the need to participate fully as a City at the centre of a large conurbation. The Action Plan for Manchester was founded upon the following criteria.

- Protecting peoples' health by implementing measures to meet the current health criteria for nitrogen dioxide (the major pollutant of concern) by 2005

- Contributing to sustainable, integrated means of transport in and around the City

- Implementation of the Action Plan through targeted actions whose costs and benefits have been evaluated and are considered appropriate to the City and its continuing success

- Recognising that correctly targeted actions to improve the environment in the City can actively support the ongoing regeneration of the City

- Seeking the support of people who live and work in, or visit the City, acknowledging that the success of the Plan depends upon active support from the community

A3.40 The Council intends to consult on the Plan prior to its formal adoption as our Action Plan and is seeking comments on the current proposals and any practical measures that people think should be included or could improve the Plan.

Annex 4

Oldham Metropolitan Borough Council

Introduction to the area

A4.1 Oldham Metropolitan Borough Council is located to the East of the Greater Manchester conurbation. It covers an area of approximately 55 square miles, stretching from the boundary with Manchester City Council to the western edge of the Pennines and the boundary with Yorkshire. It has a population of around 220,000, of which the majority lives in the western half of the borough. The Peak District National Park expands into the eastern edge of the Borough.

A4.2 In the past, employment in Oldham was heavily dependent on the textile and mechanical engineering industries. The manufacturing sector is still important, but employment has diversified in recent years. Distribution, retail and other service sectors are now also significant employers in the Borough.

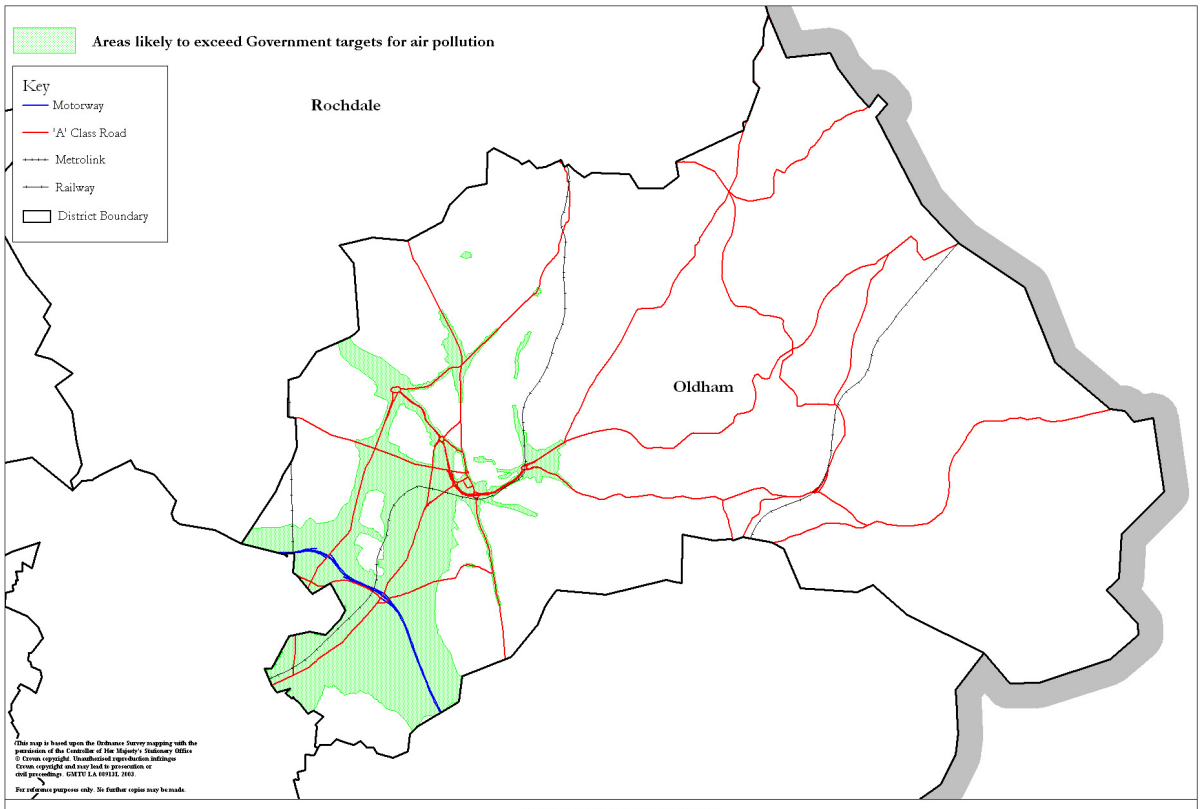
A4.3 Oldham Town Centre is the main shopping and commercial area and there are a number of smaller district centres located in the borough. There are a number of busy roads in the area, including two motorways: the A627(M), which feeds into the nearby M62, the recently opened extension to the M60 and the A663 Broadway Trunk Road.

Summary of Review and Assessment Results

A4.4 Oldham's air quality review and assessment was completed in December 2000. The assessment revealed that the Government's 24-hour mean objective for particulate matter and the annual mean objective for nitrogen dioxide would not be met in parts of the borough. Exceedances of the particulate matter objective are restricted to within a few metres of the major highways in Oldham.

A4.5 The nitrogen dioxide objective is the most difficult objective to achieve. Following a detailed analysis of all the available sources of information, including computer modelling of predicted pollution concentrations, it is expected that exceedances of the nitrogen dioxide objective may occur across a wide area of Oldham. This includes Failsworth, Chadderton, Oldham Town Centre, Broadway, Ashton Road corridor and Rochdale Road, Royton.

A4.6 Oldham declared an Air Quality Management Area covering the area where the air quality objectives are unlikely to be met in June 2001; this can be seen in Figure 4.1 on the next page.



Air Quality Management Areas

Figure A4.1 | The green areas represent results from computer modelling indicating areas which are likely to exceed the annual nitrogen dioxide standard in 2005.

Strategic Context Relating to Air Quality

A4.7 The Council's mission is to make Oldham a better place, which local people will be proud to call home. Achieving a quality environment is a priority area for action identified in Oldham's Corporate Plan. This includes reducing pollution through air quality management.

A4.8 Oldham is currently reviewing its Unitary Development Plan (UDP). The UDP aims to balance necessary development with the conservation and improvement of the environment, and the needs and rights of the individual with those of the wider community. Oldham's replacement UDP was placed on first deposit in October 2001. It is subject to objections as it currently in draft form and therefore it may change. It contains policies linked to the Air Quality Action Plan, including a requirement for all applications for major non-residential development to be accompanied by an air quality assessment.

A4.9 Concern about pollution was one of the main issues raised by residents during the development of Oldham Borough Environment Forum's Local Agenda 21 plan in 1998. Reducing pollution is one of the desired outcomes of the plan.

A4.10 The Air Quality Action Plan also has links with the Greater Manchester Local Transport Plan. One of the LTP's transport objectives is 'to ensure that the County's transport system becomes increasingly sustainable and less environmentally damaging, whilst improving the quality of life and the health of the population'. Implementation of transportation schemes locally, such as the introduction of Metrolink and the development of travel plans is expected to contribute to the Air Quality Action Plan.

Sources of Pollution in the area

A4.11 The Action Plan needs to take account of the air quality improvement needed to reduce emissions in the borough to achieve the air quality objectives. Most emissions occur in the form of nitric oxide (NO), which is converted to nitrogen dioxide (NO_2) in the atmosphere. It is therefore necessary to calculate the reduction in NO_x ($NO + NO_2$) needed to meet the air quality objectives.

A4.12 The estimated NO_x reductions for Oldham has been calculated based on the worst case monitored pollution concentrations in 2001. The methodology that has been followed to calculate the NO_x reduction can be found in Oldham's Stage 4 Review and Assessment Report.

Table 4.1 – Estimated reduction in NO_x emissions needed to meet the air quality objectives

Location	Projected NO_2 concentration 2005 ($\mu g/m^3$)	Projected NO_x concentration 2005 ($\mu g/m^3$)	Required NO_x improvement to meet the NO_2 objective (40 $\mu g/m^3$ NO_2 = 85 $\mu g/m^3$ NO_x)	% reduction in total NO_x emissions needed
Mumps Roundabout, Oldham	53	124	39	32%
Mount Pleasant Street	43	94	9	10%
Kershaw Street, Shaw	43	94	9	10%

A4.13 The Mumps Roundabout location is a kerbside location just outside the town centre, where several roads join a roundabout. It is also close to a bus depot. This site consistently has the highest diffusion tube monitoring results in the area. As a result, Oldham MBC have concluded that the Mumps Roundabout site represents the worst-case pollution situation for the borough. It can be seen from Table 4.1 that a reduction in NO_x emissions of 32% would be required for the annual mean NO_2 objective to be met.

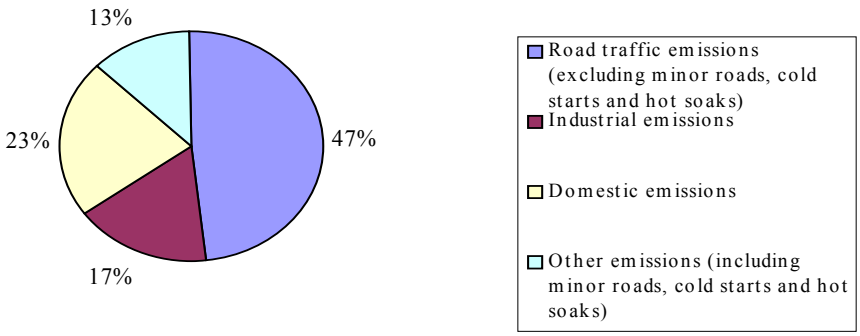
A4.14 The two other sites are more representative of residential locations close to roads in the borough. To meet the objective in these locations a reduction in total NO_x of 10% would be required.

A4.15 To help develop the Action Plan Oldham MBC commissioned a report, in partnership with the other nine Greater Manchester authorities, to identify the main sources of emissions across the conurbation.

A4.16 This study showed that road traffic contributes the highest proportion of NO_x emissions, as can be seen below. The emissions were calculated for 2005 using emission factors from the Government and predicted changes in road traffic flows.

Figure 4.2 - Oxides of Nitrogen Emissions in Oldham (2005)

Total Emissions 1557.68 T/yr



From figures contained in the Source Apportionment Interim Report, *ARIC,* 2002

A4.17 Pollution emitted at ground level has less opportunity to disperse than emissions from a height and therefore forms a higher proportion of the pollution in the air that we breathe. Emissions from Heavy Goods Vehicles, in particular, contribute towards a very large amount of total oxides of nitrogen close to busy roads.

A4.18 The Action Plan aims to work towards meeting the Government's air quality objectives. It includes measures to control or reduce pollution from all sources, not just the ones that contribute the highest proportion.

What is being done already?

A4.19 The Air Quality Action Plan links to many different strategies and initiatives that are already underway (see A4.7 – A4.10). Many of these initiatives are aimed at promoting alternative modes of travel to the private car.

A4.20 In Oldham work to improve the quality of bus services on several of the main transport routes has already begun. This includes the introduction of two Quality Bus Corridors; the Rochdale /Oldham/Ashton/Hyde QBC and the Manchester/Oldham/Grotton/Saddleworth QBC.

A4.21 On the Rochdale/Oldham/Ashton/Hyde QBC, Oldham Road now has bus lanes in Royton in both directions between Broadway and Middleton Road, along with new traffic signals and pedestrian and cyclist facilities. 24-hour bus lanes have also been introduced on the Ashton Road dual carriageway. On the Manchester/Oldham/Grotton/Saddleworth QBC, an Oldham-bound bus lane has been provided on Lees Road. Further schemes are programmed on these two corridors.

A4.22 Improvements are currently underway to improve traffic signals to produce a more responsive control system along the A62, this will also enable buses to be given preferential treatment.

A4.23 Oldham Council has launched its first Park and Ride scheme, in partnership with bus operator First, B&Q and the Passenger Transport Executive, Buses run from B&Q off

Chadderton way into the Oldham Bus Station every 15 minutes on weekdays, with free parking at B&Q.

A4.24 The council has already developed a travel plan for its own employees. This aims to reduce the impact of journeys made from home to work as well a journeys made at work. The Council employs a travel-plan co-ordinator and work has started with schools and businesses in the area to encourage them to develop their own travel plans. The Council also employs a personalised journey planning co-ordinator who works with partner organisations to develop tailored journey plans using more sustainable forms of transport. The target is to have 2,000 volunteers on the project by March 2004.

Local options to improve air quality

A4.25 The table below summarises actions that the Council intends to carry out in order to improve air quality. A description of how the air quality improvement, cost impacts and timescale to implement each action were determined is given in the regional part of the action plan.

Planned Actions	Impacts	Air Quality Improvements High/Med/ Low	Cost Impacts High/Med/ Low	Timescale Short/Med/ Long	Responsibility	Expected Output	Link to GM Action Plan
Transport related							
Metrolink to be introduced from Manchester – Oldham – Rochdale (To be built as part of the contract to be awarded in early 2003 for routes to Oldham and Rochdale, South Manchester and Manchester Airport and East Manchester and Ashton-under-Lyne.	No pollution emissions at ground level, Provides a more attractive alternative mode of travel to the car.	Medium	High	Long	GMPTE in partnership with OMBC Transportation section	Extension of Metrolink network to Oldham	AP11
Quality Bus Corridors. The introduction of two QBCs; the A671/A627 Rochdale/Oldham/Ashton/Hyde QBC and the A62/A669 Manchester/Oldham/Grotton/Saddleworth QBC	Improved access for disabled, Encourages the use of public transport	Low	Medium/Low	Short/Medium	GMPTE in partnership with OMBC Transportation section	Completion of QBC routes	AP15
A new bus station has been built in Oldham Town Centre	Improved facilities for people travelling from Oldham town centre, encourages the use of public transport	Low	High	Completed			AP12

Support the introduction of Quality Bus Partnerships between GMPTE, Oldham MBC and bus operators – allowing only lower emission buses from using GMPTE facilities (e.g. Oldham Bus Station and local authority bus lanes.)	'Cleaner' public transport, improved perception of buses – may encourage more people to use public transport	Low/Medium	Medium	Short	GMPTE	Quality Bus Partnership developed to include agreements to improve emissions from buses.	AP18
Preparation of Local Strategies to encourage walking and cycling in Oldham	Provides a non-polluting alternative to the car, Improved health from increased exercise	Low	Low	Short	OMBC Transportation Section	Walking and cycling strategies produced. Impacts of the strategies to be monitored	AP20
Continue enforcement of illegal on-street parking	Reduction in vehicles causing obstructions on the road, which leads to reduced congestion	Low	Medium	Ongoing	OMBC Parking Management		
Introduce a Roadside Emission Testing Scheme to encourage owners to maintain their vehicles.	Encourage vehicle maintenance, Raising awareness of air quality issues	Medium	Medium	Short	Cleaner Vehicles Campaign Team in partnership with OMBC Pollution Control	Number of informal and formal testing days carried out. Publicity to raise awareness of pollution from vehicles	AP1, AP46

Identify funding sources to carry out a feasibility study into a Low Emission Zone in partnership with the other Greater Manchester authorities.	Determine how effective a Low Emission Zone would be in Oldham and how it would operate	Medium/High (if implemented)	Medium	Short	OMBC Pollution control	Funding source(s) identified, Feasibility study carried out.	AP3
Travel Plans							
Continue to employ a Travel Co-ordinator with responsibility to encourage schools and businesses to develop travel plans		Low	Low	Ongoing	OMBC Transportation Section	Number of schools and businesses contacted. Number of schools and businesses that have developed travel plans.	AP21, AP22
Encourage schools to develop School travel plans and Oldham MBC to implement Safer Routes to School schemes.	Raising awareness of air quality issues, Safety improvements to transport network including pedestrian and cycle routes.	Low	Low	Ongoing	OMBC Transportation Section	As above	AP22
Encourage businesses to develop staff travel plans, and alternatives to traditional Heavy Goods Vehicles	Raising awareness of contribution of HGV emissions to pollution levels, Provide information on grants available.	Medium		Short	Oldham MBC Transportation Section	As above	AP21

Implement Oldham MBC travel plan for employees, including: • Priority parking spaces for employees car sharing • Flexible working scheme (allowing work from home) • Staff protocol for business travel (Use public transport for journeys to Manchester etc.) • Staff discounts for bus tickets	Encourage the use of public transport and car sharing, raised awareness of air quality	Low	Low	Short	OMBC Environmental Policy Team	Monitor implementation of travel plan	AP21
Council Fleet Vehicles							
Purchase/Hire more alternative fuel vehicles. Oldham MBC currently has 2 electric vehicles, 4 dual fuel vehicles, 3 CNG vehicles. All the refuse fleet is fitted with particulate traps.	Council 'setting a good example'	Low	Low	Ongoing	OMBC Fleet Management	Reduction in contribution that Council's vehicle fleet makes to emissions in the borough.	AP5

Monitoring and Assessment							
Monitoring of air quality carried out at several sites in the Borough to measure air pollution concentrations. These include 'real-time' sites at West End Street and Radcliffe School	Ability to identify air quality trends, Knowledge of air quality levels in Oldham	N/A	Low	Ongoing	OMBC Pollution Control	Pollution monitoring data. No. of poor air quality days.	AP41
Work is continuing to update the Council's air quality Review and Assessment. This includes keeping our emissions inventory up to date and computer modelling of air quality concentrations	Knowledge of air quality levels in Oldham, ability to identify areas requiring action	N/A	Low	Ongoing	OMBC Pollution Control	Review and Assessment Reports	AP40
Publicity and Public Awareness							
Local air quality monitoring information provided to the community. (www.mapac.org.uk)	Raised awareness of air quality levels	N/A	Low	Short	OMBC Pollution Control in partnership with MAPAC	Pollution data available to the community.	AP41
Consultation with local businesses and community about air quality issues, including Transport Matters newsletter and public meetings	Raised awareness of air quality issues, Participation in schemes to improve air quality	N/A	Low	Ongoing	OMBC Pollution Control	Number of articles published, meetings held.	AP46

Increase public awareness of Smoke Control Areas	Increased awareness of the need to burn only smokeless fuels on open fires	Low	Low	Short	OMBC Pollution Control	Publicity in local media, production and distribution of advice leaflet.	AP35
Work with organisations such as Transport Action to provide advice to businesses on grants available to improve fleet	Raised awareness of funding sources	Low	Low	Short	OMBC Environmental Policy		AP5
Land Use Planning and Air Quality[1]							
Air Quality Assessments required for large non-residential development	Reduce impact of new development on air quality	Low	Low	Long	OMBC Strategic Planning, Development Control and Pollution Control	Number of air quality assessments submitted.	AP31
Requirement for travel plans to be submitted with applications for large non-residential development	Encourage alternative modes of travel, to include emissions from HGV's	Low	Low	Long	OMBC Strategic Planning, Development Control and Transportation	Number of travel plans submitted.	AP31
Health impact assessment required for sensitive development such as hospitals and Residential homes located within the AQMA (excludes housing)	Health of future occupants considered	Low	Low	Long	OMBC Strategic Planning, Development Control, Pollution Control	Number of health impact assessments carried out.	AP31

[1] Oldham's Unitary Development Plan is currently being replaced, the Land use planning actions are dependent upon the outcome of this process.

Priority given for development close to public transport links	Reduce the need to travel by car, New development sites accessible by all members of the community, including by modes other than the car.	Low	Low	Long	OMBC Strategic Planning, Development Control and Traffic and Parking Section		AP31
Section 106 agreements to improve transport links for new development	Improve accessibility of sites	Low	Medium	Long	OMBC Strategic Planning, Development Control and Traffic and Parking Section	Number of Section 106 Agreements signed.	AP31
Industrial Emissions							
Continue to control emissions to atmosphere from Part B and A(2) industrial processes.		Low	Low	Ongoing	OMBC Pollution Control	% of inspections carried out in line with recommended inspection frequency.	AP34
Work with Environment Agency to address waste burning by businesses		Medium	Low	Short	OMBC Pollution Control	Development of a policy document for dealing with waste burning by businesses.	AP44
Develop partnerships with other organisations that can influence businesses to		Low	Low	Short	OMBC Environmental Policy, Pollution		AP39, AP44

reduce waste and minimise emissions (e.g. Oldham Chamber and Groundwork)					Control		
Emissions from buildings							
Enforce smoke control provisions where possible	Reduce amount of unauthorised fuel burning in Oldham	Low	Low	Ongoing	OMBC Pollution Control	Number of complaints received about unauthorised fuel burning.	AP35
Develop partnership with Energy Savings Trust to encourage energy efficiency in the home	Reduce the need to use fuel in the home, cheaper fuel bills	Low	Low	Short	OMBC Environmental Policy		AP36
Implement Energy Strategy for the Council buildings, housing and fleet	More energy efficient buildings, Reduced emissions of pollutants that contribute to global warming	Low	Medium	Short	OMBC Environmental Policy team	Monitoring of the energy strategy.	AP39
Implement Home Energy Conservation Act Strategy and Action Plan.	Improved building energy efficiency. Reduced emissions of pollutants that contribute to global warming.	Low - Medium	Medium	Medium	First Choice Homes		AP36

What options require partnership action by others?

A4.26 The Council's Air Quality Action Plan provides a framework to work towards achieving the air quality objectives. However, in order to improve air quality Oldham MBC must work closely with other organisations, businesses and individuals. An improvement in air quality in the area requires a commitment from many different people, and cannot be achieved by the Council alone.

A4.27 Vehicles on the M60, A627(M) and Broadway are significant sources of pollution in Oldham. Traffic on these roads is the responsibility of the Highways Agency. The Council and the Greater Manchester Air Quality Action Plan team are in discussion with the Highways Agency to identify options for the Motorway and trunk road network.

A4.28 The Council will also need to work with local businesses to assist in the development of travel plans and to address emissions from Heavy Goods Vehicles.

A4.29 The Government also has a responsibility to ensure that funding is available for schemes that encourage modal shift away from the private car. More work could be done nationally to tackle emissions from Heavy Goods Vehicles, building upon the existing grant system available to encourage operators to use cleaner vehicle technology.

Local Consultation

A4.30 Information about air quality in Oldham was provided to every household through 'The Oldhamer' in November 2000. The main purpose of this article was to inform members of the public about the results of Oldham's air quality review and assessment.

A4.31 A feedback form was included with the article. Respondents were asked to rank in order of priority activities that the Council should be doing about air pollution. These are listed in Figure 4.3, with the most important first.

Figure 4.3 – Results from 'The Oldhamer' Feedback form

	Average Score
Encouraging people to use public transport	1.5
Reducing emissions from industry	3
Providing more information about air pollution levels in the area	3.6
Providing special lanes for buses, cyclists or cars with more than one occupant	4
Persuading people to walk and cycle more	4
Providing more Park and Ride facilities	4.3
Charging firms who provide free parking	5.9
Charging motorists to enter towns and using the money to improve local transport	5.9

A4.32 More recently the 'Transport Matters' newsletter has been circulated in locations throughout Oldham. The results from the newsletter questionnaire will also be used to inform the Action Plan.

A local action plan for Oldham

A4.34 The action plan sets out what the local authority intends to do to work towards meeting the air quality objectives, but it is unlikely that these will be met without measures being introduced on the Highways Agency network and additional measures to tackle freight movements.

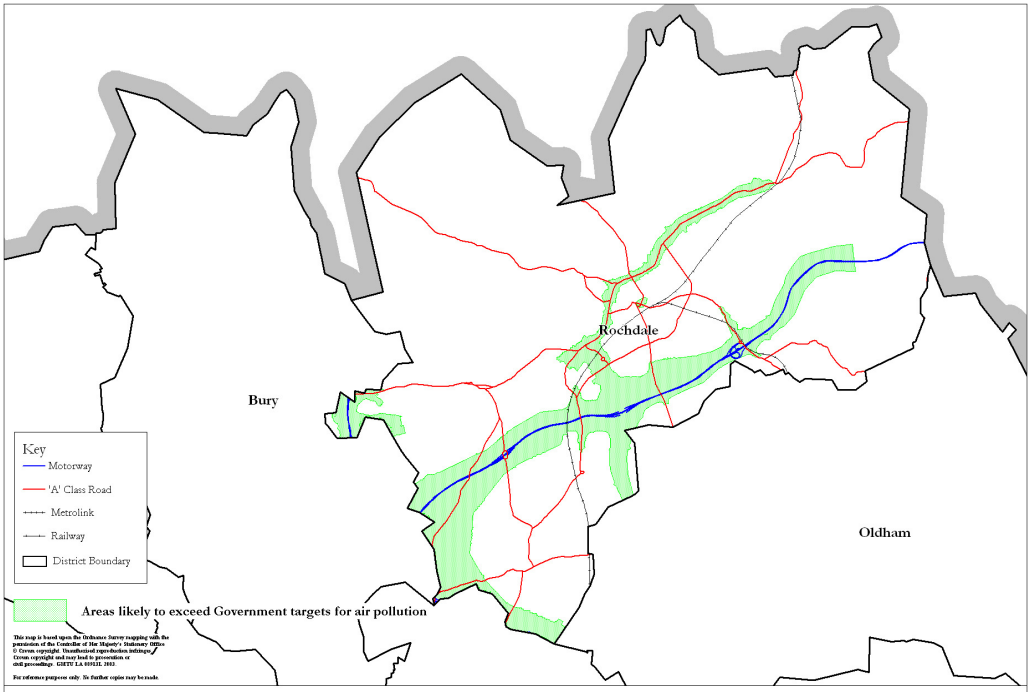
A4.33 The air quality action plan is however expected to deliver significant air quality improvement in Oldham. The success of the action plan is dependent upon the effective implementation of the measures oulined in the action plan, which will be monitored through the annual progress report.

Annex 5
Rochdale Metropolitan Borough Council

Introduction to the area

A5.1.1 Rochdale MBC lies to the North East of Greater Manchester bordering Bury, Rossendale, Calderdale, Kirklees, Oldham and Manchester. The Borough was formed in 1974 from three towns, Rochdale, Middleton and Heywood and the three former Urban Districts of Littleborough, Milnrow and Wardle. Rochdale MBC currently has around 210,000 residents and approximately 6,800 business. Geographically the borough is relatively flat to the South and West rising to around 300 metres in the Pennine hills to the North and East The area has been associated with transport between the Leeds/Bradford and Greater Manchester Conurbation's over many centuries, the Rochdale Canal and main Manchester to York railway line travel the length of the Borough. In more recent times Road Transport has dominated with the M62, the only Trans-Pennine Motorway, running South West to North East, the M66 running along the Western boundary and the new M60 forming part of the Southern boundary Traditionally employment in the Towns was in Textiles and Engineering however over the last 2 decades there as been a major shift towards Distribution and commuting to Manchester and other large towns. The towns of Rochdale, Heywood and Middleton have designated shopping centres and the borough has five large food stores**.**

Figure 5.1: Rochdale MBC's Air Quality Management Area



Air Quality Management Areas

Figure A5.1 — The green areas represent results from computer modelling indicating areas which are likely to exceed the annual nitrogen dioxide standard in 2005.

Review and assessment results

A5.2.1 The Environment Act 1995 required that all Local Authorities reviewed the likely future Air Quality within their Districts for 7 pollutants.

A5.2.2 Rochdale's Review and Assessment was carried out by ARIC at Manchester Metropolitan University using a computer dispersion model, historical results of the local air pollution-monitoring programme and the local emissions inventory.

A5.2.3 Following the stages 1,2 and 3 reviews and assessments it is clear that the pollutant, Nitrogen Dioxide is likely to exceed the Air Quality Objectives in 2005, in certain areas of the Borough.

A5.2.4 These areas are set out on the above map, they are all adjacent to Motorways or Major roads and it is clear that Road Traffic is the main reason for the exceedences.

A5.2.5 Rochdale's Draft Stage 4 Re-view and assessment concludes that the boundaries of the management areas should remain the same until the next re-view.

A5.2.6 Rochdale's Draft Stage 4 Re-view and assessment also contains the following table which shows the improvements in Nitrogen Dioxide levels which are likely to be needed at 4 points within the Borough.
Fig 5.2

Area	**Pollutant**	**Objective**	**Modelled "wor case" annual average**	**Improvement Required**
Newhey Road	NO_2	21ppb	28ppb	25%
M62 Junction 20-21	NO_2	21ppb	24ppb	13%
Manchester Rd/A58	NO_2	21ppb	22ppb	5%
M62 Junction 19-20	NO_2	21ppb	26ppb	19%

Context of air quality strategy

A5.3.1 Air Quality has been an important issue in Rochdale for some time.

A5.3.2 Rochdale MBCs Statement of Purpose and Improvement Plan aims to 'Create the best possible quality of life for local people' and one of its priorities for 2002 to 2007 is to 'Look after people and improve their surroundings' this strategy supports these aims and priorities by seeking to improve the Air Quality within the management areas.

A5.3.3 Air Quality plays a major role in the Guiding Principles and Key Themes of the current UDP, which runs from 1999 until 2004.
The First Deposit of UDP Replacement Plan (2001-2016) sets out to- Protect and Improve the Environment – the Air and its Quality is a significant part of our environment.

A5.3.4 Air Quality is also an important role of the LTP and the Rochdale appendix sets out a commitment to bring forward actions to control it where needed.

A5.3.5 An example of past actions is the Smoke Control programme, which ran from the late 1960s to its completion in 1989 and has been successful in removing thick fog from our lives.

A5.3.6 3 Air Quality Management Areas were declared in January 2002 following the re-view and assessment set out above this Strategy deals with all the areas as if they were one.

A5.3.7 The levels of the pollutant that lead to the Declarations have 2 components

Background ie. Natural sources and pollutants blown in from elsewhere.

Local sources ie.
domestic heating, industrial chimneys and traffic which is our major one.

From the map it is clear that Traffic is the main source of the pollutant causing concern in Rochdale.

A5.3.8 While the Strategy targets the pollutant of concern the actions proposed will have benefits for all pollutants including others such as CO2 that are of Global importance.

A5.3.9 It is clear that efforts to improve the Air Quality need to be made by everyone who lives, works or travels within the Borough.

Local travel ideas

A5.4.1 Rochdale MBC adopted a travel plan in 2001 which sets out how its staff travel both to and whilst at work. It targets increases in healthier and less polluting travel such as walking, cycling and using public transport.

It is currently producing a Green Travel Plan in association with Local Employers etc.

A5.4.2 Borough wide Walking and Cycling Strategies are being prepared which aim of providing a network of paths both on and off the carriageway.

A5.4.3 Car travel to school is a contributor to our problems. RMBC currently working on Safer Routes to Schools these are designed to make it practical and safer for children to walk or cycle to school thereby reducing the number of vehicles travelling at peak periods of both traffic and pollutants. A High School whose pupils use roads within an Air Quality Management Area is developing a Travel to School Plan for its staff and pupils.

A5.4.4 Rochdale MBC has long practised a flexi-time scheme and is developing a work/life balance and home working schemes it will offer information and advice on these issues to other employers/organisations. These will assist in the reduction of peak pollutant levels by encouraging travel at other than ‘rush hour’.

A5.4.5 There are currently 2 Taxi/Private Hire Vehicles that use LPG within the Borough. The Council has set out a specification for and generally supports and encourages the use of the cleaner fuels in the Taxi/Private Hire fleet.

A5.4.6 Vehicles recently added to the Dial and Ride Scheme for disabled travel are powered by LPG.

A5.4.7 8Km of on carriageway cycle lanes were introduced in 2001-2002.

Sources of pollution in area

A5.5.1 Rochdale Borough has 52 Industrials processes that are authorised under the Environmental Protection Act 1990. However while all use energy and do contribute to the background levels of pollutants none are significant emitters of the pollutant of concern.

A5.5.2 Residential properties produce nitrogen dioxide from gas, oil and solid fuel appliances. While the amount per household is very small there are around 90,000 households in the Borough.

A5.5.3 The generation of power at Fidlers Ferry increases nitrogen di-oxide throughout Greater Manchester however it is widely spread and reduces in effect as the air travels east. In Rochdale it affects the levels in the areas of concern by less than 2ppb.

A5.5.4 Rochdale's source apportionment work shows that goods vehicles whether on the Motorways or on major roads are the main source of nitrogen dioxide however cars and motorcycles are the 2nd most important source and there are often other ways that these journeys can be made.

A5.5.5 Its clear from the review and assessment that Transport is our main source of the pollutant of concern.

A5.5.6 Rochdale's Draft Stage 4 Re-view and Assessment includes the following table which sets out the improvements needed by source at 4 specific locations within the management areas.

Figure 5.3:

% Nox improvement required and the % contribution from various sources to total ground level air pollutio							
Area	Grid ref	NO_2 ppb	% NO_X improvement required	% contributio road sources	% contribution non-road sources		
					Industrial	Domestic	Other
Newhey Road	393045 411975	28	32	91.4	2.1	3.0	3.5
M62 Jct 20-21	390723 410491	24	16	84.7	2.0	2.8	10.5
Manchester Rd/A5	389078 412205	22	6	68.0	4.3	5.6	22.1
M62 Jct 19-20	388505 409943	26	25	82.3	2.4	3.3	12.0

The table provides the improvements needed in terms of Nox (all oxides of nitrogen) because it is not practical to apportion the contribution of each source in terms of nitrogen dioxide, there is a direct relationship (for which there are agreed government factors) between Nox and NO2 but this not linear . The category 'other' includes traffic on minor/residential roads.

The table clearly shows that road traffic provides the largest percentage contribution by source and needs to provide the by far the largest reduction.

What is already being done

A5.6.1 Rochdale MBC has begun to investigate the use of alternative fuels and currently uses an Electric van for pollution monitoring etc. This has proved successful and the Council is happy to demonstrate the vehicle to others. The Council has a small number of bikes available for staff use including an electrically powered one that is more suited to our hilly district.

A5.6.2 The Borough has 13.5 Kms of on carriageway cycle paths.

A5.6.3 A number of Local Garages now sell alternatively fuelled or hybrid vehicles.

A5.6.4 LPG is commercially available in our Borough

A5.6.5 RMBC is purchasing 13% of its energy from renewable sources, which include wind, hydro etc and therefore because the sector as a whole produces less of the target pollutants this assists the strategy's aims.

Local Options

A5.7.1 It is clear that action by everyone living, working or travelling within the Borough, not just in the Management areas, is needed to ensure that improvements are made.

Locally it must be recognised that we are major contributors to problems that affect us. A significant amount of the traffic on the Motorways and Trunk Roads is created from within the Borough. All the major routes in the Borough carry a significant amount of commuter traffic. This traffic is within our capability to affect.

A5.7.2 Actions should not be limited to reducing pollutants from vehicles. Other ways such as not making the journey at all ie. home working, tele-meetings, car sharing or reducing the length of the journey i.e. doing a job on the way to the office or factory should also be used.

A5.7.3 The existing Unitary Development Plan and the proposed UDP include a number of Policies that are aimed at improving Air Quality or reducing traffic generation.
These policies are aimed at reducing the need to travel, ensuring that all forms of transport can be used to access new developments and setting aside routes for less polluting forms of transport.

A5.7.4 The Rochdale annex of the LTP is important to this strategy it will hopefully bring about Modal shifts in the transport we use. Schemes include Walking and Cycle routes, Priority Bus Routes and the Development of Metro-Link,. Annual reviews on progress are published. Rochdale MBC did not feature strongly in the first year the however the Northern Orbital Bus Corridor which runs along the A58 in the Borough and has spurs that Link Heywood to Middleton and Manchester is one of the next major projects and work is due to begin in 2003. It will hopefully bring significant benefits to the Air Quality Management Areas.

A5.7.5 Rochdale MBC has a policy that all changes to the highway system will follow the broad

Hierarchy of accessibility in the Table below.

Figure A5.4:

1	Pedestrians and disabled
2	Cyclists
3	Public Transport
4	Taxis, Private hire and Commercial Traffic for the local area
5	General Traffic (off-peak)
6	General Traffic (peak)

A5.7.5 The feasibility of an off road cycle route parallel to the A58 from Rochdale towards Littleborough is being investigated, off road cycle routes are important in giving cyclists experience before they use main highway routes, this is vital to new and prospective cyclists.

A5.7.6 Rochdale MBC will develop a policy for vehicle procurement that makes emission reduction a prime concern.

A5.7.7 Rochdale MBC will take part in any Countywide scheme to test emissions from vehicles if such a scheme is not practical will seek other methods of vehicle emission testing locally to ensure that the vehicles on our roads remain within the appropriate standards and excessive polluters are not tolerated.

A5.7.8 The Road Traffic (Vehicle Emissions) Regulations 2002 allowed Local Authorities in England to issue advice and if necessary Fixed Penalty Notices to drivers who run their engines while stationary Rochdale MBC will investigate the use of these powers.

A5.7.9 The Rochdale area is Major distribution centre with many household name companies servicing their shops etc from here, RMBC will approach these Companies to encourage the use of less polluting distribution methods and vehicles by disseminating information and advice.

RMBC will approach other large organisations such as the Health Care Community to encourage and assist them in reducing the emissions from their activities.

A5.7.10 The Home Energy Conservation Act !995 required Local Authorities to increase the energy efficiency of dwellings in their areas by 30% between 1995 and 2010. Rochdale's programme is ongoing towards this target.

The efficient use of energy will help reduce the emissions of the pollutant of concern from static sites, this can be by Conservation of energy or by the use of more efficient equipment i.e. condensing boilers. Such options are open to all home and building occupiers.

Options requiring partnership or actions by others

A5.8.1 The contract for the provision of Metrolink from Rochdale centre to Manchester and beyond via Oldham has been let. This Greater Manchester Transport Executive Countywide project will bring significant benefits to the Borough of Rochdale.

A5.8.2 The Motorways such as the M62, M66 and M60 carry national and regional as well as local traffic. The trunk roads such as the A58 and the A664 carry both regional and local traffic.

National (or even European) action is needed to affect the contribution from theMotorways, actions fall into two areas, improvements to the vehicle fleet especially the HGVs and initiatives to transport people and goods in other ways.

A5.8.3 Rochdale Borough is an ideal location for a freight interchange between the rail and road systems having at least 3 industrial/distribution estates adjacent to rail lines. The UDP encourages such proposals as it would allow local companies to use the Rail Freight system. However it would need a large investment for this to occur.

A5.8.4 Regional actions are set out in the Countywide section but we in the Borough of Rochdale must recognise our contribution to the problem and that we must change to bring about needed improvements.

Figure A5.5:
Summary of Local Options

Scheme	Impact/Action	Air Quality Improvement High/Med/Low	Costs H / M / L	Timescales Short/ Med/Long	Responsibility	Expect Outputs	Link to GM Action Plan
MetroLink	Provide a regular frequent service from Rochdale Bus station to Manchester Centre via Oldham	Low/Medium (not main commuter route)	High	Preliminary work begun completion due 2008	GMPTE and Operating Partner	Service provided Number of passengers carried.	AP 11
Northern Orbital (A58) Quality Bus Corridor	Provide quality Bus routes along the A58 and into the City	Med/High (impacts directly on management areas)	High	2003-2006	GMPTE and Rochdale MBC Highways	Route infrastructure and service provided	AP 15
Encourage Modal Shift	Encourage the use of walking, cycling and Public transport	Med/High	Low	Started and ongoing	RMBC Sustainability Team	Amount of information and facilities provided	AP 12 AP 13 AP 20
RMBC Travel Plan	Encourage staff to travel in environmentally friendly way	Low/Med (RMBC staff only)	Low	Started and ongoing	RMBC Sustainability Team	More staff travelling in environmentally friendly way Measured by Staff Survey	AP 21
RMBC Vehicle Procurement Policy	Purchase the most emission efficient vehicle for purpose	Low/Med (RMBC vehicles do low mileage but most is in Borough)	Low (extra cost only small % of purchase price)	2004	RMBC	Policy in place Percentage lower emission vehicles	AP 5

Business Travel Planning	Produce plans that promote greener, healthier travel in Small to Medium sized Enterprises	Low to Medium (will increase with each plan)	Low	Ongoing	Groundwork Trust/Rochdale MBC Sustainability Team	No. of Plans produced/ No. Staff covered.	AP21
Home energy Efficiency scheme	Improve energy Efficiency Of Council Housing Stock and encourage improvements in Private sector	Low (Area sources not the main cause of the exceedences)	Low (benefits to areas is a by-product of the scheme)	Ongoing	RMBC/ Government Agencies	Reduction in energy need Annual reports to DEFRA on CO2 output reduction.	AP 36
Greener Distribution	Encourage Distribution and other organisations to use less polluting methods	Medium	Low (Less than £10,000)	By end of 2004	RMBC Env.Health	Prepare and Distribute information. Hold Seminar	AP 7 AP 8 AP 21
Cycle Lanes	Provide lanes on carriageway for Cycles	Medium	Medium.	Started ongoing	RMBC Highways	Number of extra cycle lane km per year	AP 20
Off Carriageway Cycle Lanes	Asses the feasibility of off carriageway Cycle routes	Medium (these are important to bring about a modal shift to cycling)	Medium	Ongoing	RMBC Highways/ Sustainability Team	Off road cycle lanes built and in use.	AP 20
BikEDlink scheme	To provide on and off road cycling routes to a High School and its 6 feeder Schools	Low	£140,000 over 3 years	Start April 2004	RMBC Highways/ Sustainability Team	Project progress and completion	AP 20 AP 22

School Cycle Parking Scheme	Provide facilities to park cycles at school thereby encouraging cycling	Low (but does help overcome problems preventing modal shift)	Approx, £50,000 Per year	From April 2004	RMBC Sustainability Team	No. of extra cycle parking spaces provided	AP 20 AP 22
Safe Routes to School	Provide safe routes for Walking and Cycling to school.	Low (at first)/ Medium (as Schemes Develop)	Low	Short (to start hopefully ongoing)	RMBC Highways/ Sustainability Team	No. of routes provided	AP 20 AP 22
Develop a Rail to Road Freight Interchange	Provide a facility, which would allow Freight to arrive by rail for distribution by road.	Medium/High Targets the largest pollution source i.e. HGVs	High	Long (would need Private investment)	Private Land owners. RMBC as part of UDP and its amendments	Facility operating	AP 6

Local consultation

A5.9.1 Consultation occurred following the first round of Review and Assessment and the proposal to declare the Air Quality Management Areas this was considered during the writing of this Local Plan.
Rochdale residents made 14% of the Countywide Reponses. The majority of Rochdale respondents agreed that Air Quality Management Areas should be declared.

The percentage of respondents who agreed with the ideas as to 'what their local council should be doing' is set out in the table below.

Figure A 5.6:

Encourage people to use public. transport	Provide more info.on air pollution	Charge motorist to enter towns	Provide bus, cycle & occupancy lanes	Persuade people to walk & cycle More	Reduce emissions from industry	Charge for parking provision	Provide more park & ride	Emission testing of vehicles
55.8%	39.5%	24.5%	25.9%	42.2%	60.5%	10.2%	36.1%	46.3%

There are already a number of controls on Industry and our source apportionment is very clear that industry is only a minor player in the problem areas, for the pollutants of concern. Therefore while the Council will continue to ensure Industry acts responsibly other factors must be addressed to bring about the needed improvements.

With regards to information on Air Pollution there is a growing resource of National information to which Rochdale already contributes, however we will investigate how best to publish data not already available on the Councils Website. We are also a Member of MAPAC who are currently organising to make information from the Real Time monitoring stations in the area available on their Website.

A5.9.2 A request for suggestions was placed on the Councils Website and Intranet before the plan was written.

5 e-mails were received and they raised the following issues
Use of LPG by Taxis -
Use of Energy from renewable sources -
Local Pollution Taxes

HGVs in Castleton
Bus Drivers switching off their engines.
A local burning complaint in Heywood

Electric bikes
New buildings to have grass roofs
More housing in Town Centres and near workplaces
More Woodland

A5.9.3 The Draft of whole plan including the Countywide section was widely circulated within the Borough, brought to the attention of Councillors, Environment groups, interested Organisations such as the Health Care Community and the Public at Large.

A5.9.4 Comments received on the Local section will be considered and where practical actions developed to implement them.

A5.10 A Local Action Plan for Rochdale

Rochdale MBC is committed to try to meet and keep within the Air Quality Objectives throughout the Borough.

This Local Annex sets out to how it is hoped to reduce emissions of the pollutant Nitrogen Dioxide so that levels are not likely to exceed the objective by the end of 2005.

The main threat to the success of the strategy is that many of the proposals require action by bodies other than the Local Authority.

It is clear that road traffic on the Main Roads and Motorways within and just outside the Borough pose the greatest threat to the plans to meet the objective. Of these the Motorway sources are the most difficult to affect as the reductions needed are as high as 32% of the Nox currently emitted, the majority of the Traffic is not from within the Borough and the Motorways are not in the control of the Local Authority. The Strategy's aim is to bring about a shift in the type of transport used from single occupied cars to walking, cycling, public transport and more effective use of cars. It also aims to reduce fuel usage and thereby reduce the pollutants emitted. It recognises that the transport of goods by road is the main cause of the problems in Rochdale and seeks to bring about improvements by encouraging reductions in the need to move goods, modal switch to rail and reductions in the emissions form the vehicles used.

The Strategy uses a multi-disciplinary approach and existing polices and proposals wherever possible to bring about the needed improvements. It proposes numerous small changes, which are likely to accepted by the Public and therefore be successful.

Annex 6-SALFORD CITY COUNCIL

Introduction to the area

A6.1 The City of Salford is situated at the heart of the Greater Manchester conurbation, in the north-west region of England. The City is bordered by Manchester City to the west, Trafford Metropolitan Borough to the south, Wigan Borough and Warrington to the east and Bolton Metropolitan Borough and Bury Metropolitan Borough to the North.

A6.2 Salford is predominantly an urban area. The main industrial complexes in the City include the Northbank Industrial Estate, Clifton and Walkden Industrial Estate.

A6.3 Although large areas of the City are residential there are also substantial green spaces including the Moss Land at Irlam and Cadishead, Botany Bay Woods at Worsley and the Lower Irwell Valley. The Manchester Ship Canal runs along the Southern border of the City and the Bridgewater Canal runs through the West of the City.

A6.4 There are four town shopping and commercial centres at Salford, Eccles, Walkden and Swinton and numerous subsidiary centres.

A6.5 Salford is at the hub of the transport network, with the M602, M60, M61 and M62 motorways all within the City boundaries. There are excellent road, rail and air links, and the Metrolink tram system now extends to Eccles and Salford Quays from Manchester City centre.

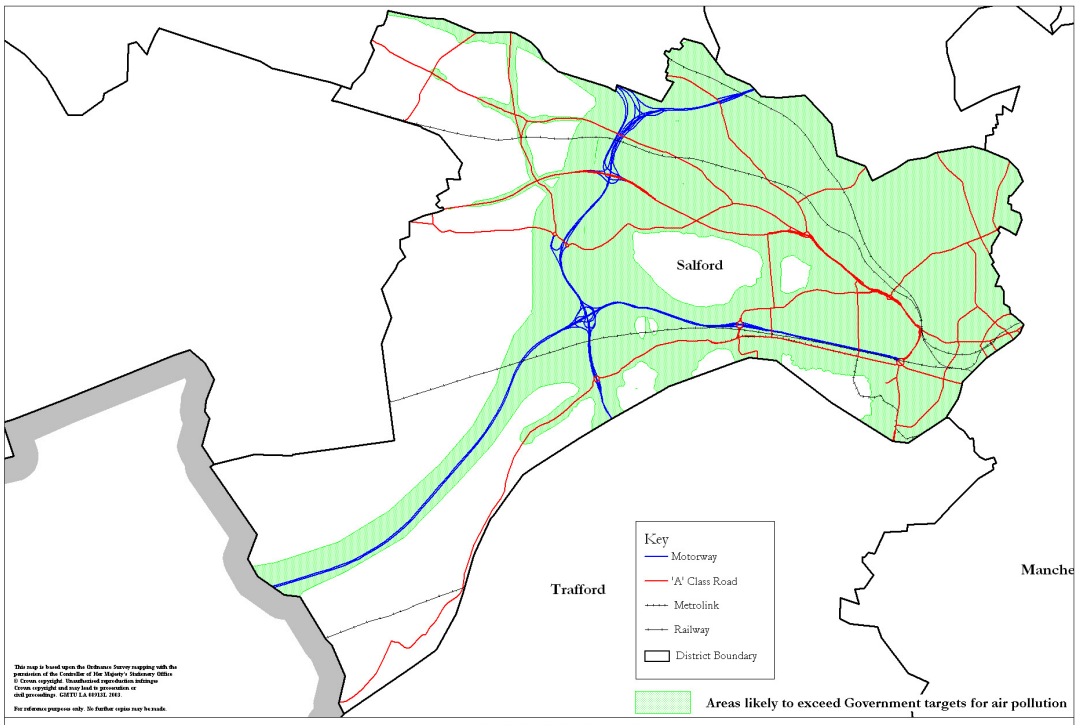
Summary of review and assessment results

A6.6 The review and assessment of air quality in Salford was completed in December 2000 and identified areas within the City that were likely to exceed the national air quality objectives in 2004 and 2005.

A6.7 After an extensive local consultation exercise the Council decided to declare an Air Quality Management Area in June 2001.

A6.8 The attached map shows the Air Quality Management Area in Salford. This was declared because studies showed that levels of nitrogen dioxide in 2005 are likely to exceed the health based standards set in the Air Quality Regulations 2000. Exceedances of particulate matter for 2004 will fall within the same designated area.

Figure A6.9 Salford's Air Quality Management Area



Air Quality Management Areas

Figure A6.1 — The green areas represent results from computer modelling indicating areas which are likely to exceed the annual nitrogen dioxide standard in 2005.

A6.10 The areas most likely to exceed air quality objectives are typically close to main arterial roads and city centres. Goods vehicle are the most significant source of pollution in the Greater Manchester area and for car journeys, trips over 8 miles contribute the most to air pollution.

Strategic context relating to air quality

A6.11 The Council has identified 6 key service pledges which are priorities for action over the forthcoming years:

- Better education for all
- Quality homes for all
- A clean and healthy City
- A safer Salford
- Stronger communities
- Supporting young people

A6.12 Under the six key pledges there are a number of Citywide and local area strategies in place and under development. The table below lists the main strategies:

Table A6.13: Existing and developing strategies within the City of Salford

Strategy	Detail
Salford Strategic Plan	To promote a clean, healthy and sustainable environment is a key objective
Salford Community Plan.	Improve quality of peoples life through sustained cultural and economic growth. Identifies 6 key pledges including: 'A clean and healthy City'.
Salford Unitary Development Plan	Framework for the development of land, transport and the environment.
Local Transport Plan	Transport Plan to improve facilities and improve the environment.
Economic Development Strategy	Raise the awareness of business impact on the environment and encourage local companies to introduce environmental management techniques in support of Salford's Local Agenda 21 process
Salford Regeneration Strategy	Polices for regeneration of the City
Chapel Street Regeneration	Environmental, social and economic improvements to the area.
Salford Crime and Disorder Reduction Strategy	To tackle and reduce the incidence of crime and disorder in neighbourhoods across the City
New Deal for Communities	Improve health and other issues in Charlestown and Lower Kersal.
Local Agenda 21 Strategy	Promote environmentally sustainable development in the City
Local Health Improvement Programme	To promote improvements to the health and quality of life of residents of the City

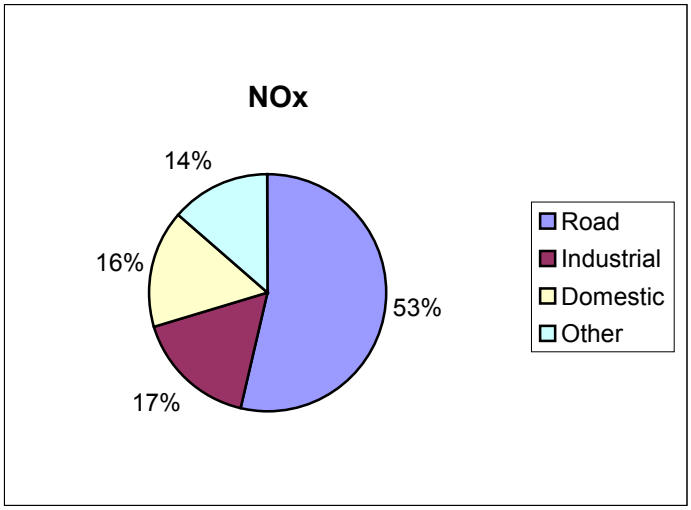
Sources of pollution in the area

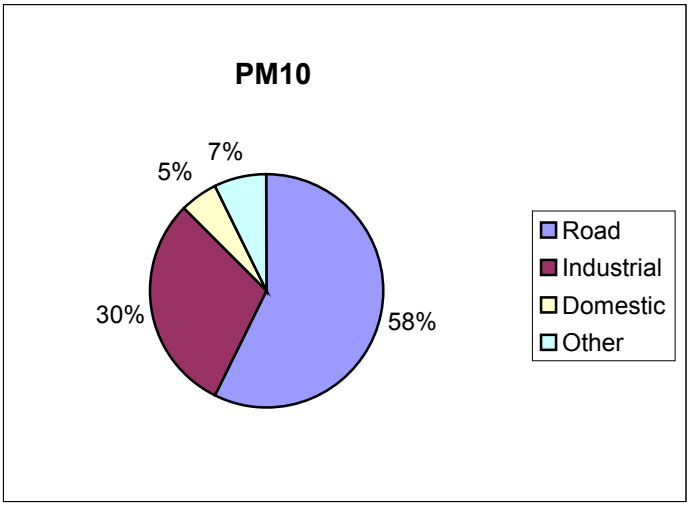
Emissions Inventory

A6.14 detailed investigation into the sources of emissions to air has been undertaken for the whole of the Greater Manchester area and Warrington. It groups 3 principle sources of pollution, these are:

- stationary point sources - predominantly industrial processes
- mobile line sources – road, rail and air transportation
- area sources – other influential sources for which it is not practical to resolve into a point or line representation, for example domestic emissions

A6.15 Charts showing the relative contributions of the different sources of pollution to the total





NOx and PM_{10} in Salford.

A6.16 As the pie charts shows, road traffic forms the most significant source of NOx and PM_{10} the City. For NOx the other sources are fairly evenly split, however a second important source of PM_{10} is industry which contributes 30% - however this is still only just over half of that caused by road vehicles.

A6.17 When road traffic is broken down in to its constituent parts, HGV's contribute the most pollution. Most of the emissions come from the major roads and motorways within the City, and the table below shows the breakdown of emissions from major roads and motorways within Salford.

A6.18 Percentage of road emissions by category within the City of Salford

	Goods Vehicles	**Motorcycles and Cars**	**Car journeys over 8km**	**Car journeys under 3km**	**Car journeys between 3 and 8km**	**Buses**
NOx						
Major roads*	74.7	18.9	16.4	0.3	2.1	3.1
Motorways	57.9	12.8	12.6	0.0	0.2	0.0
PM_{10}						
Major roads*	71.6	22.3	18.8	0.4	2.7	1.7
Motorways	48.7	14.2	13.8	0.0	0.3	0.0

*Roads over 10000 Annual Average Daily Traffic Flow as vehicles

A6.19 The overall results of the investigations into the sources of air pollution showed that Fiddlers Ferry power station is one of the most significant sources region-wide. While the

emissions from this power station are outside the remit of this action plan as it is not located within Salford, there are strict emission limits set upon the station by the Environment Agency.
A6.20 Undoubtedly the most significant source of pollution in Salford is road traffic, and in particular HGV's, using the major roads and motorways within the City. Industry does contribute to a significant proportion of the PM_{10} emissions, but even so this forms only half of the emissions contributed by road vehicles.

Industrial Processes
A6.21 The Environmental Protection Act 1990 introduced a new regime of controlling industries which emit significant levels of pollution to air. The Environment Agency regulates the larger industries – which are known as Part A processes. Local Authorities regulate the smaller industries, known as Part B processes.

A6.22 As part of this regime, Local Authorities 'authorise' all of the Part B processes within their area. The emission limits set out in the authorisation take into account National Air Quality Standards, and companies are regularly inspected by Officers from the Council to ensure that they are complying with their air quality limits.

A6.23 There are 20 Part A Processes within the City, located mainly in the industrial areas of Cadishead, Eccles and Clifton. Most of these plants manufacture solvents, acids and other chemicals. For more information on these processes visit the Environment Agency's website at: www.environment-agency.gov.uk

A6.24 There are 84 Part B Processes within Salford. The table below shows the distribution of the processes by ward.

Ward	Cement & Crushing	Petrol Stations	Solvent Processes	Other	Total
Barton	-	2	-	1	3
Blackfriars	1	2	4	1	8
Broughton	1	1	1		3
Cadishead	3	2	2	2	9
Eccles	2	2	-	-	4
Irlam	1	1	1		3
Kersal	2	1	-	-	3
Langworthy	-	-	-	1	1
Little Hulton	-	1	1	-	2
Ordsall	1	5	2	1	9
Pendlebury	2	3	1	2	8
Pendleton	-	2	3	-	5
Swinton North	-	1	-	-	1
Swinton South	1	2	2	-	5
Walkden North	-	1	1	1	3
Walkden South	-	3	-	-	3
Weaste & Seedley	3	2	3	2	10
Winton	1	2	-	-	3
Worsley & Boothstown	-	-	1	-	1
Total	**18**	**33**	**22**	**11**	**84**

What is being done already

Transport Planning

A6.25 Transport is recognised as a major contributor to pollution in urban areas and the Government has set guidelines on improving local air quality as part of the local Transport Plan (LTP). Greater Manchester, recognising that resolving air quality issues requires a multi disciplinary approach, established the Greater Manchester Air Quality Strategy. The group is working closely with the LTP to improve air quality.

A6.26 Information will be placed in Trading Standard's Spotlight to inform local businesses of ways of reducing pollution from their vehicle fleet using funding from the Energy Saving's Trust.

A6.27 The Council has developed walking and cycling strategies which are designed to help people find alternative methods of transport to their cars. They provide advice and information on safe cycle/walking routes throughout the City.

Unitary Development Plan

A6.28 The development of new facilities can affect air quality as additional sources of pollution are introduced. The Unitary Development Plan (UDP) is currently being revised and sets out air quality objectives for new developments. The land use system can contribute to achieving the air quality standards and objectives by setting out a number of policies for new developments.

A6.29 The UDP sets the context for all new developments within the City. The existing UDP contains environmental guidance on new developments and the revised UDP will contain stricter standards for air quality. A draft copy of the UDP will be available for public consultation towards the end of 2002.

A6.30 Local Air Quality Management (LAQM) .G4(00) advises local authorities that *air quality matters can be taken into account as material considerations in determining planning applications or appeals*. Applications for new developments having a significant impact are assessed against the air quality standards and advice given to the developer and development control on the environmental impact.

Vehicle Improvements

A6.31 The Council has introduced many low emission vehicles into its fleet, including the Mayor's car. As part of a trial programme, several directorates are evaluating the use of LPG/ petrol vehicles, and wherever possible Vehicle Maintenance is promoting LPG vehicles.

A6.32 The Council uses low sulphur diesel in all its vehicles. A new Council fuel dispensing bay includes both LPG and low sulphur diesel pumps. There is an ongoing program to replace older Council vehicles which do not meet the EuroIII standards, with the latest Euro III models. Where this is not possible, the use of Continuous Regeneration Traps (CRT) is considered. CRT traps reduce emissions of harmful particulates from vehicles, raising their emission standard up towards EuroIII from Euro I /II. The Council has a program of fitting CRT traps to its refuse vehicles, which is assisted by a grant of up to 75% of the total cost from the Energy Saving's Trust / Powershift grant scheme. Six vehicles have been converted under this scheme so far.

Energy Efficiency

A6.33 The Council has a wide range of polices to reduce energy from both Council buildings and its own housing stock.

A6.34 The Affordable Warmth strategy is seen as a corporate priority and is being developed within the City's corporate Anti-Poverty Strategy. This gives priority to improving energy efficiency within the private sector and Council housing stock.

A6.35 Eccles has been designated an energy conservation area with grants available from the Energy Saving's Trust for local energy efficiency advice and improvements.

A6.36 The coal-fired district heating schemes will be phased out and replaced with low emission gas boilers. A £7 million programme is ongoing to improve Council housing energy efficiency. Less use of fossil fuels will produce local improvement while reducing consumption of electricity will give area wide improvements through lower emissions at power stations.

A6.37 All Council buildings have an energy management programme. Large reductions in energy consumption have been achieved which has allowed the money saved to be used to purchase 'green energy'. All of the main Civic Centre Building and 10% of all street lighting is now powered by 'green energy'.

What options are locally achievable

Table A6.38 Local options

Planned Actions	Impacts	Air Quality Improvement High/Med/Low	Costs (000's)		Timescale S/M/L/O/C	Who	Link to GM Action Plan	Expected Output
Quality Bus Corridors	Reduce car trips improving air quality. Better quality service.	Medium	Leigh Guided Bus Way.	1100	M	DS (LTP)	AP15	Number of schemes implemented.
			A6/A576/A57 Peel Green to Manchester.	1000	C		AP15	
			A6 Chapel Street	30	S		AP15	
			Bury Old Rd/ Bury New Rd to Manchester.	500	S		AP15	
By-passes and road building	Relief congestion of local roads improving the environment and improving air quality.	Medium	Manchester – Salford Inner Relief Road –(Central Manchester) (Stage 3).	23	O	DS (LTP)	AP29	Number of schemes implemented.
			Eccles Relief Road.	H	C		AP29	
			Cadishead Way Extension (Phase 2).	2100	M		AP29	
Walking and Cycling Strategies	Promote alternative transport means. Increase awareness. Improve health.	Low	Local Walking Strategy (draft).	L	S	DS	AP20	Number of plans produced.
			Chapel Street Walking Plan.	L	S		AP20	
			Draft Cycling strategy.	L	S		AP20	
			Cycling schemes	280	S		AP20	
			Renovation of Salford Central Station.	H	S	DS	AP20	Scheme Completion

Safe Routes to School (SRTS) School Travel Plans	Reduce car trips and promote safe, clean routes to school. Reduces congestion / improve air quality.	Low	Madamswood, Little Hulton, Langworthy, Higher Broughton,Swinton, Eccles, Irlam, Walkden, Claremont and Charles Town, Albion School.	L	S	DS	AP22	Number of routes implemented.
Travel Plans	Improve air quality by encouraging. alternatives to or better use of cars.	Low	Develop and co-ordinate Green Travel Plans within Salford.	151	S	DS	AP21, AP22	Number of plans.
		Low	Consult with companies employing more that 200 employee's on implementation of Green Travel Plans.	L	M	DS	AP21	Number of companies consulted.
		Low	To promote and develop Council's car sharing scheme.	L	S	DS	AP21	
M60 Jt 18 to 12 Improvements	Reduce congestion. Promote better use of public transport and alternative modes for freight. AQ improvement dependent on scheme.	Medium	Costs dependent on type of scheme implemented by Department for Transport.	H	L	DS/ES/ DoT/HA	AP24	Access impact of scheme.

Traffic Management	Reduce exposure at local level. Encourage walking.	High	Eccles Town Centre Pedestrianisation.	H	C	DS	AP23	Number of schemes implemented.
		High	Chapel Street Pedestrianisation.	M	M		AP23	
		Medium	Traffic calming measures to improve local environment by reducing speed and through traffic.	L	L		AP28	
		Low	Stricter parking enforcement to improve safety and keep traffic flowing.	L	S			
		Medium	Develop Park and ride strategy with AGMA authorities.	L	L		AP19	
		Low	Minimising the provision of long stay commuter car parks.	L	L			
		High	Promoting the extension of the Metrolink, quality bus corridors and improvements to rail and bus facilities.	H	L		AP11, AP12	

Development plans (UDP)	Minimising the effects of new developments on local air quality. Reducing the personal exposure to pollutants in new developments.	Medium	Promote mixed use development within the regional centre, town centre and close to transport nodes.	H	L	DS	AP31	Number of Planning Applications and 106 Agreements.
		Low	Require major trip generating development to be located where it is well served by a choice of transport nodes.	H	S		AP31	
		Low	Require major development proposals to demonstrate how they will minimise greenhouse gas emissions.	L	S		AP31	
		High	Promote sustainable freight movements using, where feasible, more rail or the Manchester Ship Canal.	L	L		AP10	
		Low	Implement new parking standards for commercial and residential developments.	L	S		AP31	
		Low	New fuel stations to incorporate fuel points for liquid petroleum gas (LPG) and electric vehicles.	L	S		AP31, AP5	
		Low	To encourage existing forecourts to install LPG and electric charging points.	L	S	DS/ES	AP5	
		Low	Seek air quality impact assessments as part of planning applications likely to give rise to significant transport implications.	L	S	DS	AP32	
		Low	Secure mitigation measures for development proposals likely to cause or contribute to a significant increase in air pollution.	L	S		AP31, AP32, AP33	

		Low	Development proposals to include adequate provision for pedestrians, cyclists and disabled people.	L	S		AP31, AP32, AP33	
Energy Efficiency	Reduce energy consumption and use green energy. Lower emissions locally and nationally.	Medium	Home Energy Strategy.	L	M	HS	AP36	HECA Report.
		Medium	Home Energy Conservation Act Action Plan (HECA).	L	M		AP36	
		Low	Schools Energy Awareness Programme.	L	S		AP39	
		Medium	Environmental Stewardship Initiative. Improve energy usage in council buildings, schools, and recreational centres.	L	S		AP39	
		Low	Home insulation schemes to reduce energy consumption	L	M		AP36	
Monitor Air Quality	Information on air quality for assessments and local decision-making.	Low	Monitor air quality and report results.	1 FE + 40	S	ES/ *DS (LTP)	AP41	Completion of tasks and data capture.
			Update Review and Assessments as required by national guidance.					
			Develop air quality information on the internet. (12 k \LTP) *				AP46, AP41	
			Support development of local air quality issues on regional Manchester Air Pollution Advisory Council (MAPAC) website (www.mapac.org.uk).				AP41, AP46	
			Consult local communities about the Air Quality Action Plan.				AP46	
Technology And alternative fuels	Improves air quality through lower vehicle emissions.	Low	Retrofitting of particle traps to refuse vehicles.	O	S	ES	AP5	Number of traps fitted LPG vehicles.
			Promote alternative fuel take up in Council fleet vehicles.			ES	AP5	

Local Agenda 21	Lower emissions.	Low	Promote sustainable environment through Council activities, local communities and businesses in Salford.	L	S	DS	AP36 AP39	
Groundwork Trust/ Red Rose Forest	Reduces pollution locally. Improve environment.	Low	Tree planting in urban areas and open spaces to improve environment.	L	S	Ground Work Trust		No of schemes.
Information on bonfires	Improves air quality.	Medium	Discourage garden bonfires by providing advice to local residents.	L	S	ES/GMFB	AP44	Number Registered
Industrial controls	Improves air quality. Less harmful emissions.	High	To fit abatement equipment to reduce industrial emissions.	1 FE	M	ES	AP38, AP34	Number of registered Processes
		Low	Encourage changes to process technology to reduce waste and minimise emissions.		M		AP38 AP34	
		High	To apply stricter emission standards if industrial emissions are significant contributors to exceedances of air quality standards.		L		AP34	

Key

Timescales: O Ongoing, S Short Term (0 – 2 years) , M Medium Term (2-10 years), L Long Term (10 years+), C completed

Responsibility: DS Development Services, ES Environmental Services, DfT Department for Transport, HS Housing Services, HA Highways Agency , GMBF Greater Manchester Fire Brigade.

Costs: High (£100 k +), Medium (10-100k+), Low (less 10k), FE Full time equivalent

What options require partnership action by others

A6.39 The Greater Manchester Strategy 'Clearing the Air' provides a framework for addressing air quality issues. The development and implementation of this strategy has, and will continue to require, close co-operation between the local authorities in the Greater Manchester region.

A6.40 To address the impacts of transport upon air quality at the local level, a joint action plan has been developed with the City's transport planners. Actions from the Local Transport Plan will be evaluated to determine both the positive and negative effects a scheme may have on air quality.

A6.41 Options which affect local businesses and industries, such as adopting transport plans, will require the development of good working partnerships between the Council and the businesses affected.

A6.42 The Highways Agency is a key partner in achieving better air quality within the City. The Agency is working with the Local Transport Planners Working Party to discuss options for the regions motorways.

A6.43 The Environment Agency is responsible for controlling the emissions from Part A processes. The source apportionment studies have identified some of these as having an effect on the City and therefore we will continue to work with them to address these problems.

A6.44 Salford and Trafford Health Authority have declared a Health Action Zone and improvements in resident's health fit naturally with Council's strategy on poverty and pledge to provide a Clean and Healthy City

Local Consultation

A6.45 Local community consultation forms an important part of Salford's air quality management process. Consultation was undertaken on Stage 2 in 2000 and Stages 3 & 4 in 2001, and consisted of the following:

Stage 1 & 2 Review and Assessment

A6.46 Representation to the Community Committees and with Directorates within Salford City Council
Consultation in magazine 'Salford People'
Press releases in the local media
Distribution of information to local libraries

Stage 3 and Proposed Air Quality Management Areas, as part of a regional exercise

A6.47 Press releases in the local media
Distribution of leaflets containing questionnaires to core groups and public areas i.e. doctors surgeries, libraries
Representation to the Community Committees and with Directorates within Salford City Council

A6.48 The aim of the various consultations was to both inform the public of our activities, and to find out their thoughts and opinions. The questionnaire was designed to find out what the people

of the City of Salford thought about air quality in general, what they thought about the proposed air quality management area and what they thought the Council should be doing to improve air quality. It also included a section where people could add any additional thoughts or comments.

A6.49 The principal results of the survey were:

- most people were concerned about air pollution in the City, particularly its effects on health
- many people felt that improvements to public transport would improve the situation
- a lot of people were unhappy at the prospect of restrictions on private car use being incorporated in the Plan

A6.50 When asked to select what actions the Council should be taking to improve air quality, the most popular were:

- encouraging more people to use public transport (60.4%)
- reduce emissions from industry (54.7%)
- provide more Park and Ride (53.8%)
- emissions testing of vehicles (50%)

A6.51 The least popular options were:

- charging firms who provide free car parking (10.4%)
- charging motorists to enter towns (25.5%)
- provide bus, cycle and car occupancy lanes (28.3%)

A6.52 Over 70% of all the people surveyed agreed with the proposed Air Quality Management Area. The views and comments of Salford residents were similar to the other nine Greater Manchester Authorities.

A6.53 More information on Salford's activities on air quality management can be found on the Council's website at: www.salford.gov.uk

Annex 7 – Stockport Metropolitan Borough Council

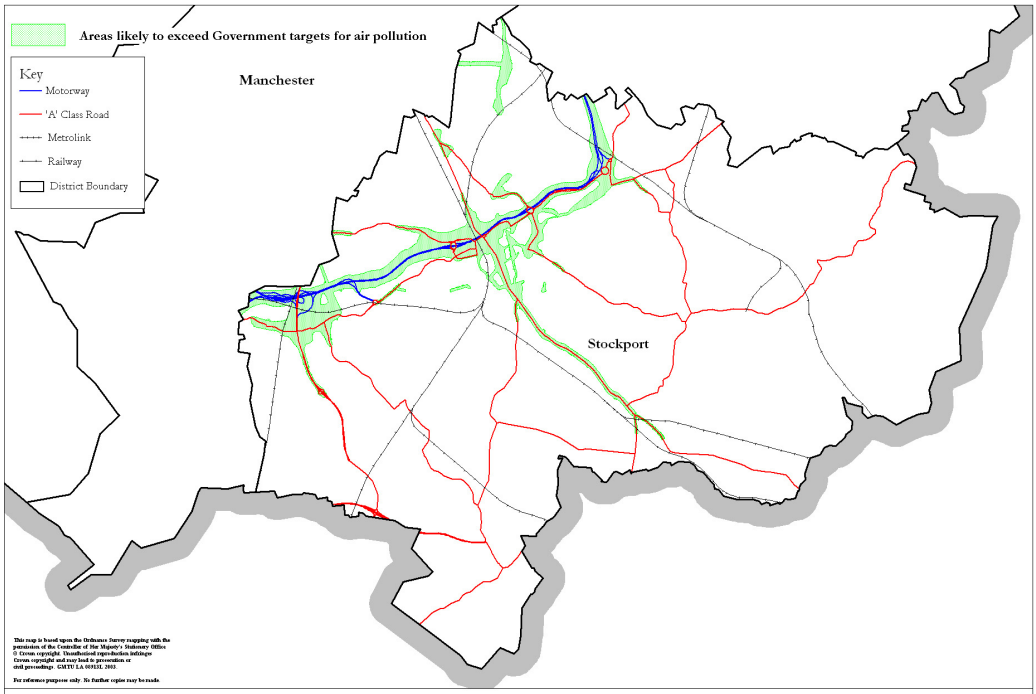
Introduction to the area

A7.1 Stockport Metropolitan Borough extends some 48 sq. miles and is home to over 290,000 residents and some 16,000 businesses. The borough is situated in the south east of Greater Manchester County. It borders the Peak District National Park to the east and Cheshire Plain to the south. The town incorporates well-known locations such as Cheadle, Marple and Bramhall, and beauty spots such as Bramhall Hall and Etherow Country Park. Almost 45% of the borough is green belt and parkland whilst residential districts and profitable commercial areas form the remainder of the borough. The workforce is predominantly employed in light industry and services. A section of the M60 Motorway cuts through the north of Borough and the A6 bisects it in an approximately N-S direction

Summary of Review and Assessment Results – location of AQMA and extent of the problem

A7.2 The Review and Assessment of air quality in Stockport was made public in 2000, indicating that certain areas of the borough would not meet government objective standards by 2005.

Figure 7.2.1



Air Quality Management Areas

Figure A7.1 — The green areas represent results from computer modelling indicating areas which are likely to exceed the annual nitrogen dioxide standard in 2005.

A7.3 In early 2001 the Council decided to declare an Air Quality Management Area to cover the areas that are predicted not to meet the 2005 objectives, this also includes a safety margin. The blue shaded area on the map above indicates the extent of the Air Quality Management Area in Stockport. It can be seen that most of the affected area borders the main roads, traffic on which has been identified as the primary source of the main pollutant of concern, nitrogen dioxide (NO_2). Work is in progress to refine the contributions to the problem of various vehicle types, the actions set out in the local plan for Stockport will be prioritised according to the scale of their impact on the problem.

Strategic context related to air quality

A7.4 The action plan must be set in the context of the Council's policies and strategies. The aim of Stockport, as set out in the Community Strategy, is to become '*cleaner, greener, safer, stronger'*. Amongst other aims expressed in the strategy document Stockport wants to be a borough:

- *Which has got to grips with its traffic problems*
- *With a strong and responsible economy*
- *Where people are able to lead healthy and independent lives*

One of the main aims of the Community Strategy is to *contribute to the achievement of sustainable development – ensuring a better quality of life for everyone now and in the future – at both a local and national level.*

A7.5 Implicit within these statements is the idea that pollution, which may have an adverse effect on people's quality of life, needs to be addressed. This fits well with the governments Air Quality Strategy that sets objective levels for a range of pollutants to be met by 2005. The mechanism proposed for achieving the objectives is through regional and local action plans. Stockport will approach this at two levels:

1. Regionally, in co-operation with the other Greater Manchester Authorities
2. Locally, in consultation with those who live, work and conduct business in the borough.

A7.6 In conjunction with this action plan the council is preparing a climate change strategy, along with an overall air quality strategy encompassing aspects of pollution not considered under the National Air Quality Strategy. In addition the council has other related strategies covering cycling, walking and public transport. Amongst other considerations of relevance to the action plan are the Stockport Unitary Development Plan, the Local Transport Plan and the Southeast Manchester Multi-Modal Study.

Sources of pollution in the area

A7.7 The emissions inventory for the borough calculated that in Stockport 80% of the nitrogen oxide emissions were from line sources (traffic on roads), 6.5% from point sources (factory chimneys etc.) and 13.5% from area sources such as housing estates. Whilst road traffic is the primary source of NO_2 pollution, other industrial and household sources should not be ignored. The contribution of different types of road traffic has been worked out using government figures.

What is being done?

A7.8 In line with much of the policy laid out in the Greater Manchester LTP, Stockport has been implementing numerous schemes that have effects (either direct or indirect) on air quality within the borough. Since the schemes are aimed at traffic reduction and modal transfer from cars to other forms of transport, the net effect should be the reduction of traffic and therefore the reduction of pollution derived from it. The schemes include:

> ***Home Zones*** - Initial work has led to the development of a Home Zone project in the Adswood area, with plans for more to follow.
> ***20 mph schemes*** - target roads outside schools and residential areas. By March 2002 17 schemes had been put in place with more to follow.
> ***School Travel Plans*** - The council employs a co-ordinator to help schools develop and implement travel plans.

Travel Plans - The council employs a travel plan co-ordinator to help businesses implement travel plans, this includes large employers such as Stockport MBC, Stepping Hill Hospital, Stockport College, and Sainsbury's amongst others.
Quality Bus Corridors - Within Stockport are under development with a section along the A6 already complete, whilst others are in the planning and development stage.
Cycling Infrastructure Provision - A process of continuous increase in provision of cycling infrastructure is underway, guided by the borough's cycling strategy.
Promotion of Alternative Fuels - The council actively pursues a policy of using greener fuels wherever possible and promotes this amongst other organisations where appropriate.

Greater detail on the schemes and their relation to the LTP framework can be found in the Greater Manchester LTP and the First Annual Progress Report.

What options are locally achievable?

A7.9 This section looks at the actions that have been planned locally that will have beneficial effects on air quality. In order to provide an approximate guide to the relative cost and benefits obtained from each of the actions, each has been graded for air quality impact, cost impact and time scale for implementation. It should be borne in mind that each of the actions set out in the table below have benefits, which are not measured solely in terms of air quality. Where air quality impacts are indicated to be low, it is usually the case that the scheme would have gone ahead on the basis of another benefit e.g. reduction of congestion.
A7.10 Only schemes that have air quality benefits that will take effect before 2005 have been included in this action plan. The air quality and cost impacts have been classified as *low, moderate* and *high*, whilst the time scale to implement has been classified as *short, medium* or *long term.* Short term indicates that actions will take place before spring 2003, medium term that actions will take place by the end of 2005 and long term, that actions will take place beyond the target date for reaching the NO_x objective levels. Some of the actions will be continuous or may already have begun implementation. The South East Manchester Multi Modal Study has proposed numerous actions that will have a considerable beneficial effect on air quality in the borough and this action plan aims to complement and support the SEMMMS study which proposes an integrated approach to solution of the area's traffic problems. Due to the lack of funding specific for Air Quality improvement measures it is envisaged that funding of SEMMMS projects will contribute in a major way to the amelioration of Stockport's air quality problems. See the table below:

Possible Actions	Impacts	Air Quality Improvement L-M-H	Responsibility	Cost L-M-H	Time S-M-L	Link to GM AQAP
Use of cleaner and alternative fuels by council fleet	Improve Authority's environmental profile, fuel efficiency savings.	L	Transportation and Health/SDS	M	S	AP5
Home Zones, Adswood, Shaw Heath, Great Moor	Reduced dependency on cars, encouraging modal shift.	L	Transportation and Health	M	M	AP28
Park and Ride Schemes	Reduce congestion, improve Public Transport Reliability, LTP	M	Transportation and Health / GMPTE	M	M	AP19
Low Emission Zones	Overall improvement to urban environment.	M	Transportation and Health / Environmental Health	L	M	AP3
20 mph zones	Improved safety	L	Transportation and Health / Traffic Services	L	S	
Pedestrianisation of district centres	Improved visual amenity	L	Transportation and Health	M	L	AP23
Green Travel Plans	Reduces peak congestion, overall traffic.	L	Transportation and Health	L	S	AP21
Safe Routes to School	Reduces peak congestion	L	Transportation and Health / Traffic Services	L	S	AP22
Cycling Promotion	Improvements in fitness/health	L	Transportation and Health / Cycling Forums	L	L	AP20
Walking Promotion	Improvements in fitness/health	L	Transportation and Health / Walking Forum	L	L	AP20
Sustainable distribution	Reduced energy use, reduced congestion	L	Transportation and Health / Environmental Health	M	M	AP7

Quality Bus Corridors	Efficient use of roadspace	M	Transportation and Health / GMPTE	M	L	AP15
UDP policies to locate major traffic generating developments in accessible locations	Facilitates non-car use, e.g. in town centres	M	Transportation and Health / Development Control / Planning	L	S-L	AP31
Maximum car parking standards for new developments	Enables higher density of development in accessible locations discourages car use	L	Transportation and Health / Car Parking	L	M-L	AP31
UDP policies for tree planting	Planting in new developments may help to reduce pollution	L	Planning	L	M-L	AP31
Tree Planting on derelict land	Planting on derelict land along major transport corridors to improve image of borough	L	SDS	L	M-L	AP31

The options outlined in Table A7.10.1 are the main means by which Stockport will attempt to improve local air quality. Other actions, supported by strategies such as the LA21 Strategy, aiming to reduce emissions of greenhouse gases will also contribute to a general reduction in emissions of nitrogen oxides. Decriminalised parking will also reduce congestion, as the borough will have authority to enforce parking regulations and remove illegally parked vehicles. It is likely that combined with the measures set out in the table, these factors will lead to a reduction in the levels of the pollutants of concern in some areas of the borough.

What options require partnership/action by others?

A7.11 One of the major air quality problems faced by the borough is the pollution generated by the traffic using the M60 Motorway. Whilst reductions in local journeys using the M60 as part of the route may be achieved by means of the actions outlined above, the through traffic using the M60 remains the responsibility of the Highways Agency. The Highways Agency has been involved in preliminary discussions at a Greater Manchester level, however at the

local level co-operation and complimentary action will be required to reduce the polluting effects of traffic.
A7.12 Central government, through DTLR, has begun a process of informing and persuading fleet operators and road haulage companies to convert their fleets to less polluting fuels. A continuation of this programme along with improvements in vehicle technology may offer a long-term solution to the problems by reducing the amounts of pollutants emitted by each vehicle. This requires an active role to be taken by central government, including a continuation of the grant aid structure for conversions and further tax incentives for operators of clean vehicles. Support for the development of non-polluting vehicle technologies must also come from central government. On this theme, government must also maintain a set of incentives through taxation and other fiscal measures to encourage the private motorist to use clean fuels and less polluting technologies.

A7.13 Motoring organisations such as the AA and RAC should perhaps be more visibly involved in the promotion of cleaner vehicle technologies to their members. Promotion of more economical driving techniques is another area that their involvement would be important in. Additionally their role in representation of the motorist's viewpoint would be valuable in the consultation process.

A7.14 Other organisations such as the vehicle inspectorate have an important part to play in reducing pollution from vehicles. A concerted, well-advertised programme of roadside testing would have a beneficial deterrent effect on motorists who do not bother to have their car tuned regularly.

Local Consultation
A7.15 As part of the consultation process for the Stage III Review and Assessment of Air Quality, a questionnaire was circulated throughout Greater Manchester. Over 130 people in Stockport sent responses to this. The results of the questionnaire clearly show that c.75% of respondents agree with the need for Air Quality Management Areas and the figure is irrespective of whether the respondent lives inside or outside of the AQMA. A fundamental misunderstanding of the nature of the air quality problems became apparent since 55% of respondents thought that the Local Authorities should work to reduce emissions from industry. Since industrial emissions are already stringently regulated there is clearly only modest room for improvement from this sector, which represents <20% of total No_x emissions in the borough.

A7.16 The results of the survey indicate considerable support for encouraging people to use public transport and provision of 'park and ride' facilities as well as emission testing of vehicles. The full results of the consultation are published in GMTU Report 703.

A7.17 Mechanisms for participation in the development of an action plan have attempted to include an element of education/information for all participants; assumption of an informed opinion is not warranted based on the results of the AQMA consultation. The dissemination of accessible information may thus be viewed as a desirable mechanism for focusing the action planning process on achievable outcomes.

Groups to participate in consultation
A7.18 The range of groups both internal and external to the council is very large and their interest in air quality variable. In order to harness their inputs the air quality issues have to be raised on their agendas. From a practical point of view, those groups meeting on less than a quarterly frequency cannot be expected to contribute in a meaningful way to a process that is scheduled for completion within 9 months.

A7.19 External interest groups will be invited to participate in the consultation process, these will include special interest groups as well as statutory bodies and a broad spectrum of parties likely to be interested in, or affected by the Air Quality Action Plan for Stockport.

A7.20 Within the council there are a number of divisions and sections, which need to have inputs into the Air Quality Action Plan for the borough. The Air Quality Steering Group is a first step towards internal consultation with abundant opportunities for feedback from all perspectives. In addition Council Area Committees will be consulted on the Action Plan.

Annex 8
Tameside Metropolitan Borough Council

Introduction to the area.

A8.1 Tameside covers an area of 40 square miles in the east of the Greater Manchester conurbation. It is largely urban in character with continuous development in the western and central parts. The eastern part provides a marked contrast, being dominated by high moorlands forming part of the Pennine foothills. It is a multi- centred district with the population of 221,500 being distributed amongst residential areas surrounding its nine towns which vary in size from the administrative centre of Ashton under Lyne, with a population of 44,400, to Mossley in the Pennine foothills with a population of just 10,100.

A8.2 The Borough has undergone very substantial economic restructuring over the last twenty years as the traditional employment base of heavy manufacturing industry, clothing, food and textiles has suffered decline in line with national trends.

A8.3 However, the economic future now appears much brighter than it has for many years. There has been considerable investment in town centres, derelict areas have been cleared up, housing renewal has led to considerable development interest and new strategic development opportunities have followed the recent completion of the M60 in particular.

A8.4 The M60 passes north south through the western part of the Borough intersecting with the major A635/A662 and A57 radial routes into Manchester city centre.

Summary of Review and Assessment Results – location of AQMA and extent of the problem.

A8.5 The Review and Assessment of air quality in Tameside was published in 2000, indicating that certain areas of the Borough would not meet Government objective standards by 2005.

A8.6 In July 2001 the council declared an Air Quality Management Area (AQMA), covering areas where air quality was predicted not to meet the 2005 objectives and in which the public would be exposed. The blue shaded area shown on the map below indicates the extent of the AQMA in Tameside. It can be seen that most of the affected areas border the A57, A635 and A662 main roads and the M60 and M67 motorways. Traffic on these roads has been identified as the primary source of nitrogen dioxide (NO_2), the main pollutant of concern, and, for this reason, this plan mainly concentrates on measures aimed at reducing the impact of traffic on air quality.

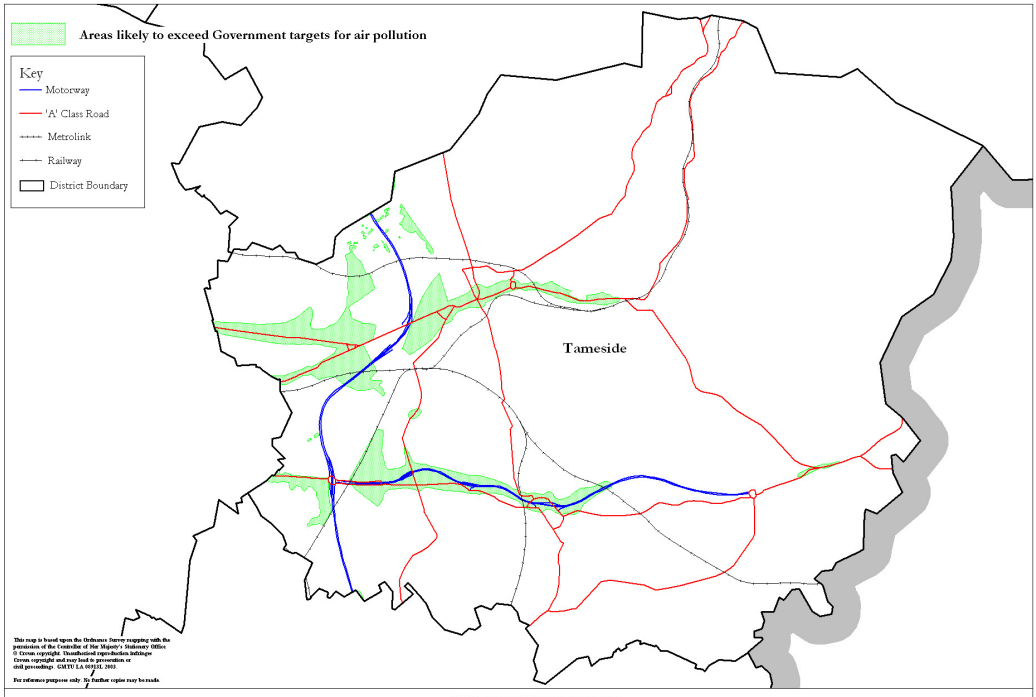
Strategic context related to air quality.

A8.7 The examination of air quality issues and the search for solutions to the possible adverse effects which pollution can have on people's quality of life needs to take place within the context of the overall corporate vision for the Borough. This vision has been translated into the Tameside Community Plan by the Tameside Community Forum – A partnership of public bodies, voluntary organisations and major businesses – to guide the main actions the Borough needs to take in a number of key priority areas, including: -

Environment – create a cleaner, greener environment

The local economy – capture quality jobs

Transport – reduce traffic congestion



Air Quality Management Areas

Figure A8.1 The green areas represent results from computer modelling indicating areas which are likely to exceed the annual nitrogen dioxide standard in 2005.

A8.8 Under each priority area more detailed strategies and programmes will deliver the plan and air quality will be an overarching issue for them all to take account of. They include the Economic Development Strategy, the Local Transport Plan, the Unitary Development Plan and the Local Agenda 21 Plan. In turn, specialist partnership groups back these linked strategies. Most notably, in the local transport field, the 'Quality Partnership Agreement' seeks to deliver integrated public transport across the conurbation and involves the GMPTA/GMPTE, public transport operators and local highway authorities amongst others.

A8.9 These initiatives fit well with the Government's national air quality strategy, which sets objective levels for a range of pollutants to be met by 2005. Tameside MBC's action plan aims to achieve these objectives through the introduction of regional initiatives in cooperation with the other Greater Manchester authorities and through the implementation of more local measures in consultation with those who live and work in the Borough.

Sources of pollution in the area.

A8.10 The emissions inventory for the borough calculated that in Tameside 70% of NOx emissions originated from line sources (road traffic), 11.5% from point sources (factories and boilers) and 18.5% from area sources such as housing estates. Whilst road traffic is the primary source of nitrogen dioxide (NO_2) pollution, other industrial and household sources shouldn't be ignored.

A8.11 The composition of traffic on the all-purpose A57, A635 and A662 roads has been established through roadside interview surveys. They show that the journey to work trip by

car dominates the morning peak period but social, recreational and shopping trips become more prominent throughout the remainder of the day. Goods vehicles comprise 7%, 5% and 4% of the total flow on these roads respectively. Trip lengths on these routes can vary widely although the average vehicle trip lengths for the A57, A662 and A635 are reasonably long being 16.7km, 14.5km and 9.5km respectively. In addition, the analysis of M60 traffic indicates that the great majority of vehicles are passing through the Borough (63%) or have either an origin or destination outside the Borough (32%) Goods vehicles make up 8% of the total traffic flow on the M60 through Tameside. Clearly, reference to the source apportionment work discussed in chapter 2.10 demonstrates that, in tackling modal shift within Tameside MBC's AQMA, there is a need for a blend of measures to deal with both the longer distance more strategic movements, often associated with the journey to work, and the shorter more local trips predominantly carried out for a variety of purposes throughout the day. Also, freight movements on these major routes in the Borough contribute significantly to any exceedences of the air quality objectives and will need to be addressed.

A8.12 Stage four of Tameside's Review and Assessment of Air Quality identified the required improvements needed across the Borough to meet the air quality objective for nitrogen dioxide. The required reductions ranged from 4μg/m^3 to 17μg/m^3.

What is being done already?

A8.13 Since the publication of the Government's Transport White Paper *'A New Deal for Transport – Better for Everyone.'* in 1998, transport policy at national, regional and local level has principally been aimed at traffic reduction and modal transfer from cars to other forms of transport and the overall effect is expected to be an improvement in air quality.

A8.14 The Greater Manchester Local Transport Plan's (GMLTP) transport strategy, supplemented by the South East Manchester Multi-Modal Study (SEMMMS) strategy, includes a number of major capital transport projects, which are currently being developed in the areas of concern for Tameside MBC i.e. within the AQMA along the M60 corridor and the A662, A635 and M67/A57 major radial routes into Manchester city centre. They all involve a package of measures which, in the context of the integrated county-wide plan, will provide the strategic basis for dealing with travel demand in a more sustainable way along these corridors. They include: -

M60 Corridor

A671/A627 Rochdale-Oldham-Ashton under Lyne-Hyde Quality Bus Corridor.

A662/A635 Corridor

Metrolink Eastern Extension.

A635 Manchester-Ashton under Lyne-Stalybridge Quality Bus Corridor.

Ashton Northern Bypass.

M67/A57 Corridor

A57 Manchester-Denton-Hyde Quality Bus Corridor.

A57/A628 Mottram to Tintwistle Bypass and the Glossop Spur Local Road Element.

A8.15 The Quality Bus Corridor proposals form part of a conurbation wide network of high quality bus routes, which seek to make bus travel more competitive. They are to be brought forward through the Quality Partnership Agreement (see Section A8.6) which aims to deliver the Greater Manchester Bus Strategy in accordance with the Transport Act 2000. The other main provisions of this strategy include better information for passengers, expansion of multi-modal, multi-operator ticketing, provision of improved passenger interchange facilities and total service upgrades on the main corridors. Rail network improvements are also in prospect in the longer term, arising out of, the SRA's Greater Manchester Rail Strategy Study and the South East Manchester Multi-Modal Study (SEMMMS). These are likely to involve upgraded services on both the local and inter–regional routes in the above corridors together with a potential strategic 'park and ride' facility in east Manchester.

A8.16 The Highways Agency is committed to establishing Route Management Strategies for their motorway and trunk road network. Here again, this will require partnership action with local highway authorities and other transport providers throughout the conurbation. Clearly, this will be of vital importance to dealing with the air quality problems associated with the use of motorways in Tameside's AQMA.

A8.17 A freight strategy for Greater Manchester is being developed through the GMLTP process. At present no specific proposals for rail freight related to development in Tameside have been identified. However, the Council has policies included in its draft replacement Unitary Development Plan to protect potential rail corridors for future use, to facilitate road-rail transfer in appropriate locations and to support in principle, Central Railways proposal for a new rail freight route from Liverpool to northern France, which would pass through Tameside.

A8.18 In respect of shorter distance trips in particular, walking and cycling strategies have been developed and they should guide new investment aimed at making these modes more attractive. Travel plan strategies have been prepared for the Tameside local authority, schools and businesses in order to encourage their adoption throughout the borough and thereby influence travel demand.

A8.19 The council is reviewing its Unitary Development Plan and it is expected that it will continue to focus regeneration on the nine towns of Tameside. Considerable investment in town centres has already taken place and the concentration of retail and commercial development at these nodal points on the public transport, walking and cycling networks will help to limit road traffic increases. Public car parks in town centres are controlled by zonal pay and display systems. The adjustment of charges allows demand to be controlled with the result that long stay/commuter parking in town centres has been steadily reduced. Parking standards for new development have been reviewed in the light of new government guidance and larger strategic employment sites have been subject to detailed formal consideration of public transport accessibility, travel plans, non-motorised access and developers' contributions to transportation needs. Increasingly, developers have been required to show that developments are sustainable in transport terms.

A8.20 The entire Borough of Tameside is a Smoke Control Area. This means it is an offence for the occupier of a premise to allow smoke emissions from a chimney unless the smoke is caused by the use of an authorised fuel. The council can take action for non-compliance with this legislation.

A8.21 Other promotional activities have been aimed at either reducing travel demand or pollutants at source. These have included events that have coincided with the ongoing

national ‘Don’t Choke Britain Campaign’, involving commuter races, ‘Bike to Work’ days, vehicle emissions testing and children’s competitions.

What options are locally achievable?

A8.22 The measures listed in Table A8.1 below are consistent with the GMLTP and include the more strategic proposals already outlined together with the further development of the more locally based initiatives aimed at helping to suppress demand for car travel in the AQMA, especially in respect of the shorter distance trips.

A8.23 They include the widespread and co-ordinated application of travel plans working with the local authority, the health and education sectors and local business interests. Small scale measures aimed at reallocating road space or priority to pedestrians and cyclists together with improved maintenance of footways, carriageways and street lighting will also have their part to play, especially if linked to travel plans or other initiatives such as the safe routes to school programmes or urban regeneration projects. The improvement and promotion of established village, district and town centres offers the opportunity to encourage a more sustainable pattern of movement by encouraging the use of local facilities. Underpinning current national planning guidance and policy is a view that there is a causal link between the extent that urban centres are used and their accessibility and intrinsic quality: if people use local centres more frequently, accessing them by foot, cycle or bus, they will use car dependant centres and facilities less and thus travel less by car.

A8.24 When considering proposals for development, the effect they may have on local air quality within the AQMA will need to be taken into account. Throughout the Borough, appropriate policies that support the promotion of more sustainable travel should be used to guide development.

A8.25 Other locally achievable measures are also in prospect arising out of the SEMMMS strategy. For the most part, they already form part of local transport plan thinking but SEMMMS envisages extra resources being made available for initiatives which attempt to change people’s travel behaviour and the way they use the existing transport network. These ‘transport change’ measures may be passive, that is they are about allowing people to make more informed decisions about their travel, or they may be pro-active which involves working and engaging with people to engender a change in their travel patterns. They could include the development of public relations campaigns, improved travel information, travel awareness initiatives and behavioural change measures such as travel blending.

What options require partnership action by others?

A8.26 Countywide partnerships are in place to deliver important strategic initiatives but other local partnership actions will be equally valuable.

A8.27 Individual travel plans will be developed by local companies and schools on the basis of Tameside MBC’s Travel Plan Strategy. Assistance will be given by the local authority in preparing these travel plans and this might extend to the implementation of new infrastructure especially, for example, in support of the council’s local safety scheme and safe routes to school programmes.

A8.28 Urban regeneration projects will often rely on local authority partnerships with private developers and others who have an interest in seeing town centres in particular, and the transport networks based on them, thrive.

A8.29 A pooling of effort and knowledge through business partnership will be important in changing attitudes to improving air quality. Tameside Business Environment Association is a European funded partnership project which offers advice and information on best practice regarding environmentally sustainable initiatives. This can include assistance with, for example, understanding how businesses may convert to more sustainable fuel and generally providing information on Government legislation on vehicle emissions.

Local consultation.

A8.30 Following the completion of the Stage 3 Review and Assessment in 2000 and the joint Greater Manchester consultation exercise on the proposed Air Quality Management Areas, 67% of Tameside respondents to the Greater Manchester consultation exercise *Clearing the Air* agreed with the proposed AQMA. They also provided views on what they felt should be done to reduce air pollution. The most popular measures to improve air quality were emissions testing of vehicles and reducing emissions from industry. The least popular options were charging motorists to enter towns and introducing work place parking charges.

A8.31 Tameside undertook further internal and external consultation with all elected ward members, Heads of Service, the Local Agenda 21 Round Table, one hundred of the Borough's largest employers and small to medium sized businesses via the Tameside Business Environment Association.

A8.32 Public consultation has also involved the use of Tameside's Internet site, a partnership with the DETR's 'Are You Doing Your Bit' road show which visited the Borough in August 2001 and information was also distributed at all libraries, leisure centres and doctor's surgeries across the Borough.

A8.33 More recently, Tameside's Citizen 2000 public panel was consulted on the action plan during the spring of 2003, with 78% agreeing with the measures set out in the plan.

Conclusion.

A8.34 The Tameside Local Annex ties directly into the regional air quality action plan. The primary objective of both the local annexes and the regional action plan are to improve air quality to meet the Air Quality Objectives.

A8.35 Individual actions may not have a significant impact upon air quality, but in combination, it is hoped that the measures employed will reduce pollutant concentrations to meet the Air Quality Objectives.

A8.36 The success of the Air Quality Action Plan relies heavily upon public support. Without the public engaging in the plan and modifying their travel habits accordingly, the required improvements in air quality will not be achieved.

A8.37 The expected changes in air quality across Greater Manchester will be monitored directly. Progress in implementing the Action Plan will also be assessed by reviewing other measurable indicators, for example the number of vehicles on the roads, the number of organisations operating work place travel plans

Table A8.1:

Planned Actions	Impacts	Air Quality Improvements High/Med/Low	Cost Impacts High/Med/Low	Timescale Short/Med/Long	Responsibility	Expected Output.	Link to GM Action Plan
Transport Related							
Metrolink Eastern Extension	Reduced car travel resulting from the introduction of high quality public transport.	Medium	High	Medium	GMPTE/A	Monitoring of the LTP is discussed in chapter 5	AP11
A671/A627 Rochdale-Oldham-Ashton under Lyne-Hyde Quality Bus Corridor.	Reduced car travel resulting from the introduction of high quality public transport.	Medium/Low	High	Short	GMPTE/A + Local Highways Authority	Monitoring of the LTP is discussed in chapter 5	AP15
A635 Manchester-Ashton under Lyne-Stalybridge Quality Bus Corridor.	Reduced car travel resulting from the introduction of high quality public transport.	Medium/Low	High	Medium	GMPTE/A + Local Highways Authority	Monitoring of the LTP is discussed in chapter 5	AP15
							AP15

A57 Manchester-Denton-Hyde Quality Bus Corridor.	Reduced car travel resulting from the introduction of high quality public transport.	Medium/Low	High	Medium	GMPTE/A + Local Highways Authority	Monitoring of the LTP is discussed in chapter 5	
A627/A560 Hyde-Stockport Quality Bus Corridor.	Reduced car travel resulting from the introduction of high quality public transport.	Medium/Low	High	Medium	GMPTE/A + Local Highways Authority	Monitoring of the LTP is discussed in chapter 5	AP15
Ashton Northern Bypass	Reduced impact of road traffic on town centre.	Medium/Low	High	Short/Medium	AMEC Developments + TMBC Engineers Dept	Assessment of vehicle reduction in Ashton Town Centre from traffic counts. Improvement in air quality to be measured locally	AP29
Examine the potential for Metrolink 'Park and Ride' at Ashton Moss.	Increased use of high quality public transport.	Low	Low	Short/Medium	GMPTE/A	Monitoring of the LTP is discussed in chapter 5	AP19

A57/A628 Mottram to Tintwistle Bypass and Glossop Spur Local Road Element.	Reduced impact of road traffic on local communities.	Medium	High	Medium	Highways Agency + TMBC/Derbyshire CC	Reduction in congestion in Mottram/Hollingworth/Tintwistle will be visibly noticeable and confirmed by vehicle counts Improvement in air quality to be measured locally	AP29
SEMMMS 'transport change' measures (See 8.22).	More responsible use of the car and increased use of other more sustainable transport modes.	Medium	Medium	Short/Medium	TMBC Engineers Dept	Monitoring of the LTP is discussed in chapter 5	
Improved pedestrian/cycling environment.	Reduced car travel.	Low	Low	Short/Medium	TMBC Engineers Dept + miscellaneous Development Partners	County wide targets have been set in the LTP. More cycle counters are to be installed across the Borough	AP20
Urban regeneration initiatives.	Reduced need to travel and support for public transport networks based on existing settlement pattern.	Medium	Medium/High	Short/Medium	TMBC Engineers Dept + miscellaneous Development Partners	Monitor number of Brownfield Developments in urban centres	AP31

Promote the use of clean, attractive, safe and affordable public transport	Reduced dependence upon cars Reduced congestion	Low	Low	Long	GMPTE/A + Miscellaneous Partners	Monitoring of the LTP is discussed in chapter 5	AP12, AP13
Travel Plans							
Develop local authority travel plan.	Reduced car travel by council employees and increased use of other more sustainable transport modes.	Low	Low	Short/Medium	TMBC Travel Coordinator	Monitor number of employees signing up for car sharing scheme. Monitor number of staff car parking badges issued.	AP21
Facilitate company travel plans.	Reduced car travel by company employees and increased use of other more sustainable transport modes.	low	low	Short/Medium	TMBC Travel Coordinator + Various Partners	Monitor number of companies introducing travel plans	AP21

Facilitate school travel plans.	Reduced car travel by pupils and increased use of other more sustainable transport modes.	Medium	Medium	Short/Medium	TMBC Travel Coordinator + TMBC Education Dept + Schools	Assess number of schools introducing travel plans Monitor congestion around schools with known problems.	AP22
Publicity / Public Awareness Campaigns							
Monitoring of Air quality carried out at several sites across the Borough. Information published in annual report and on the Tameside web-site	Ability to identify air quality trends, Increase knowledge of pollutant concentrations in Tameside. Ensure residents have access to air quality information	Low	Low	Ongoing	TMBC Environmental Health Dept	Monitoring air quality over the coming years will directly assess the impact of the air quality action plan. Monitor number of hits on web-site and number of annual year reports downloaded/ requested.	AP41
Roadside Emissions Testing	Raise Public awareness Reduce the number of polluting vehicles on the road	Low	Medium	Medium	Greater Manchester Cleaner Vehicles Campaign Team + GM Polic + LA Env Health Depts	Assess number of fixed penalty notices issued / number of free tests undertaken at publicity events. Reduction in poorly tuned vehicles on the road could have a large impact on air quality	AP1

Public awareness campaigns including Green Transport Week, Don't Choke Tameside and Are You Doing Your Bit?	Increase Public awareness. Reduce travel by car and promote other more sustainable transport modes.	Low	Low	Long	TMBC Environmental Health Dept	Assess impact by number of visitors / response to each event / campaign.	AP35, AP46
Promote the use of alternative fuels such as LPG, CNG, and electricity to domestic and commercial vehicle users	Reduce fuel costs Reduce emissions	Low	Medium	Long	TBEA + TMBC Environmental Health Dept + Power Shift	Monitor number of alternative fuel points available at garage forecourts across the borough. Ensure planning applications for new forecourts include alternative fuel facilities	AP5
Promote and encourage regular servicing and maintenance of vehicles	Reduced emissions Financial savings for vehicle owners, fewer breakdowns	Low	Medium	Long	Various TMBC Departments	Monitor number of vehicle failing roadside emissions tests	AP1, AP46
Promote fuel efficient driving in the commercial and domestic sectors	Reduced emissions Financial savings	Low	Medium	Long	Various TMBC Departments	Monitor number of visits made by TBEA related to greening vehicle fleets. Ensure large fleet operators are targeted.	AP46

Promote measures such as car sharing among residents and businesses in the Borough	Reduce car use Financial savings Reduced emissions	Low	Low	Long	TMBC Travel Coordinator	Monitor number of residents and businesses signing up to schemes. Assess impact of methodology for promoting car sharing.	AP21, AP46
Council Fleet Vehicles							
Investigate feasibility of LPG / alternative fuels for Council fleet	Reduce fuel costs Reduce emissions	Low	Medium	Medium	TMBC Fleet Vehicle Manager	Investigations are currently underway into the efficiency and reliability of alternative fuelled fleets run by other operators.	AP5
Ensure that the Councils vehicle fleet is properly maintained and operating efficiently.	Reduced emissions Reinforces Council commitment to the environment	Low	Medium	Long	TMBC Fleet Vehicle Manager	Monitor number of fleet vehicles of the road for repair. Assess the costs of vehicle down time.	AP5

Industrial Emissions							
Work with Tameside Business Environment Association to promote environmental good practice in businesses	Advise to small to medium size enterprises regarding energy management/energy efficiency and travel impacts Reduction in NOx and PM_{10} from commercial fuel combustion Greening of commercial fleet Company travel plans	Low	Low/Medium	Short/Medium	TBEA TMBC EDU Dept TMBC Environmental Health Dept TMBC Travel Coordinator	Monitor output through TBEA Annual Report. Assess number of companies receiving assistance/grants. Assess number of newsletters produced per annum Monitor number of events held and attendance.	AP21, AP46, AP39
Industrial Air Pollution Control	To reduce emissions from industrial processes through IPPC and LAPC regimes and clean air legislation in partnership with the Environment Agency	Medium	Medium	Long	Environment Agency + TMBC Environmental Health Dept	Use DEFRA annual returns and stack emissions monitoring results to evaluate success. Information from part A1 processes available on the EA web-site.	AP34

Emissions from Households							
Continue to implement, develop and monitor Tamesides Home Energy Conservation Act (HECA) Strategy.	Reduce energy consumption in domestic properties, reduce emissions from gas, solid fuel and oil burning Financial savings	Low	Low/Medium	Short/Medium	TMBC Energy Development Manager	Assess number of grants being up taken and analyse annual HECA returns to DEFRA	AP36
Enforce smoke control provisions.	Reduce amount of non-smokeless fuel burning in Tameside	Low	Low	Ongoing	TMBC Environmental Health Dept	Monitor amount of formal / informal action taken.	AP35
Planning and Air Quality							
Home Zones	To reduce traffic and traffic speeds in residential areas	Low	Medium	Medium	TMBC Engineers Dept + miscellaneous Development Partners	Monitor number of Home Zone developments across the Borough.	AP28

Environmental impact assessment required for housing and other sensitive development located within the AQMA	Health of future occupants considered	Low	Low	Short	TMBC Planning Dept TMBC Environmental Health Dept	Predictive modelling such as DMRB /ADMS Urban to be used to determine air quality step effects of developments after they are completed. Out put of model will be used to determine appropriateness of development	AP31, AP32
The promotion of sustainable development consistent with planning guidance and UDP policies.	Reduction in car dependency.	Low	Low	Short/Med/Long	TMBC Planning Dept LA21 Officer	Guidance to the construction section on sustainable development is currently being written. Eventually this will become supplementary planning guidance within the Borough	AP31

Annex 9-TRAFFORD MBC

Introduction to the area

A9.1 Trafford Metropolitan Borough is situated in the south west of the Greater Manchester conurbation in the north west region of England. Manchester City borders the Borough to the east and Salford City borders the Borough to the north.

A9.2 Trafford has a range of industrial, urban and semi-rural environments. The main industrial complexes in the Borough include Trafford Park, Carrington and Broadheath.

A9.3 Although large areas of the Borough are residential there are also substantial green spaces including Dunham Park, the Bollin and Mersey Valleys. The Bridgewater Canal runs through the north of the Borough and the Manchester Ship Canal forms part of the northern boundary of the Borough. The River Mersey flows from the east to west through the centre of the Borough and the River Bollin flows along the southern edge of the Borough.

A9.4 There are four town shopping and commercial centres (Urmston, Stretford, Sale and Altrincham) and numerous subsidiary centres. The Trafford Centre, a regional shopping complex opened in 1998 and is located in the north of the Borough.

A9.5 Trafford is served by an extensive transport network. The M60 runs through the Borough and the M62 and M56 border the Borough. Manchester International Airport is located adjacent to Trafford at the southern tip of Manchester. The Metrolink rapid transit system runs through the Borough linking Altrincham, Sale and Stretford to Manchester city centre and on to Bury in the north of the Greater Manchester conurbation.

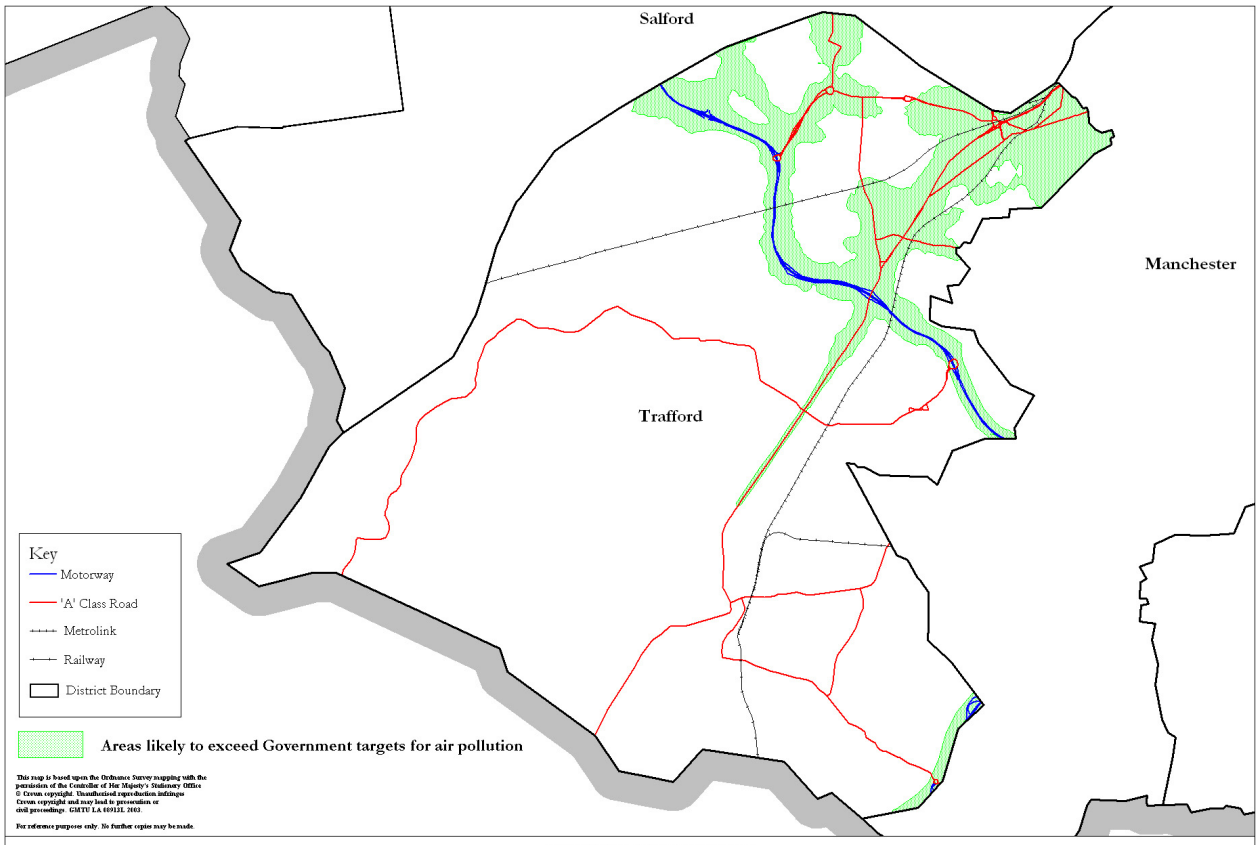
Summary of review and assessment results

A9.6 The review and assessment of air quality in Trafford was completed in 1999 and identified areas within the Borough that were likely to exceed the national air quality objectives in 2005.

A9.7 After an extensive local consultation exercise the Council decided to declare an Air Quality Management Area in June 2001 to cover the areas, which are likely to exceed the 2005 objectives. A precautionary approach was taken to account for any modelling errors.

A9.8 The green shaded area on the map above indicates the extent of the Air Quality Management Area in Trafford. The map shows the most affected area to be the north of the Borough bordering the M60 motorway and main roads.

A9.9 The primary source of the main pollutant of concern, Nitrogen Dioxide, is road traffic. Work is in progress to define what contribution various vehicle types have on pollution levels. Action will be taken to address contributory problems.



Air Quality Management Areas

Figure A9.1	The green areas represent results from computer modelling indicating areas which are likely to exceed the annual nitrogen dioxide standard in 2005.

Strategic context relating to air quality

A9.10 Trafford Council's Corporate Plan brings together what the Council want to achieve over the next three years in Trafford. It highlights priorities that have come from discussions with local people and organisations and it outlines where the council needs to improve performance. The Council's vision is to make Trafford a caring and inclusive place where the community comes first and everyone realises their true potential. Underpinning this vision is a set of values. These are the principles along which the Council will work in making the vision a reality.

A9.11 To start working towards this vision the major aims of the Council are to:

- Improve the quality of life and opportunity to thrive for all residents, in particular, through addressing the inequalities that currently exist.

- Take better care of the physical environment, improve the housing stock and ensure that all development is sustainable.

A9.12 To deliver on these main aims the Council will need to focus on following 6 key objectives. These are:

1. Transforming the way we support and work with young people and children in Trafford.

2. Transforming the way we support and work with older people in Trafford.

3. Transforming the way we support people with particular needs.

4. Transforming the way we care for and manage the places where people live.

5. Transforming the way we work

6. Transforming the way people access and connect with us.

A9.13 The Council has also recently introduced new management arrangements. The new structure is organised around five main areas. These include Area working, Delivering service priorities to key groups of people, Enabling people and services to deliver, Supporting the organisation and Supporting the leadership.

A9.14 The air quality action plan will operate within the context of the council's Corporate Plan and will be closely linked to the Council's existing policies and strategies. Strategies that would have a direct impact on air quality include the Local Transport Plan (LTP). The LTP has an objective of improving air quality and an overall aim is to provide a sustainable transport strategy. Similarly one of the objectives of Trafford's Unitary Development Plan requires developments to meet environmental standards, such as air quality. The Council is also in the process of preparing an Air Quality Strategy, which will link with the Greater Manchester Air Quality Strategy.

A9.15 Other closely related strategies include the Road Safety Strategy, Travel Plan Strategies (e.g. school travel plans, park and ride schemes), local walking and cycling strategies and strategies covering public transport.

A9.16 Trafford`s Local Strategic Partnership (LSP) was launched in September 2001 to develop Trafford`s first Community Strategy. A key aim of the strategy is to contribute to the achievement of a sustainable development.

A9.17 During the same year, Trafford Council consulted widely with local people and communities about their priorities for the future. This produced 11 community "ambitions" 2 of which related to air quality. These are;

1) Improving local environment
2) Transport and access

A9.18 As part of the launch of The Local Strategic Partnership in September 2001, workshops were held to discuss the best way of achieving the community ambitions. This forms one of the building blocks for the community strategy.

A9.19 Trafford's Community Strategy will set a long-term vision for the Borough that all partnerships and organisations can work to. The Strategy will also set out the main priorities and how Trafford can start working towards that vision.

A9.20 The Local Strategic Partnership group has identified the need to develop a strategic environmental partnership for Trafford and a small project group has been set up to take forward this work. Implementation of the action plan will therefore contribute to the sustainable development part of the community strategy, ensuring actions to reduce pollution from various sources result in a better quality of life for everyone now and in the future-at both a local and national level.

Sources of pollution in the area

A9.21 As part of Trafford MBC's Stage 3 Review (***aric***, 1999b) a number of areas were identified as possible areas of exceedance of one of the Air Quality Objectives for 2005 (NO_2). These areas are summarised in the table below.

A9.22 Whilst a number of possible exceedances of PM_{10} were identified in the Stage 3 review, these were cautionary and limited to areas such as road junctions, as such the final AQMA was declared in terms of NO_2, not PM_{10}. None of the PM_{10} exceedances affected residential properties or areas where exposure was likely, therefore for the purposes of this report they have not been included.

A9.23 The NSCA Action Plan guidance (NSCA, 2000) provides methodology to assess the percentage improvement required in order to meet Air Quality Strategy Objectives. Percentage improvement required can be estimated from the predicted NO_2 exceedance. The percentage improvements required for the four areas where the Objective was likely to be exceeded within Trafford MBC are shown Table 5.1. For the purposes of this report, areas of exceedance were determined by comparing the modelled "worst case" annual average for NO_2, at the nearest likely sensitive receptor within the areas modelled for the Stage Three Review and Assessment (***aric***, 1999b). Points of exceedance (modelled "worst case" annual average) can be seen in Figure 5.1.

A9.24 Further to this NO_2 exceedance can then be converted to NO_x along with the Objective value, and from these the percentage improvement in terms of NO_x can be determined. Source apportionment results can then be used to assess the percentage reduction required in key source sections (Section 6.4).

A9.25: Areas of "worst-case" exceedance and % improvement in air quality required

Area	Pollutant	Objective	Modelled "worst case" annual average	Improvement Required
Stretford, whole of modelling area	NO_2	21ppb	26ppb	19%
M60 junction 9, most of modelled area	NO_2	21ppb	24ppb	13%
Old Trafford, whole of modelling area	NO_2	21ppb	24ppb	13%
Sale, along the A56, A6144 and the area surrounding the junction of the A56 and Aston Lane	NO_2	21ppb	22ppb	5%

A9.26 The greatest percentage improvements are required in the area of Stretford (19%), the area surrounding junction 9 of the M60 (13%) and the Old Trafford area (13%). The lowest percentage improvement required is at Sale (along the A56, A6144 and the area surrounding the junction of the A56 and Aston Lane) (5%). All of these areas are within the declared AQMA shown in Figure 4.2.

What is being done already

A9.27 Trafford Council established a multi-disciplinary Corporate Air Quality Working Group at the beginning of the Local Air Quality Management Process. The group has representation from Salford and Trafford Health Authority and from the Planning, Transport, Local Agenda 21, Environmental Health, Operational Services, Finance, Economic and Community Regeneration disciplines. Multi-disciplinary working on air quality actions and policies, consultation activities and various other air quality activities are some of the actions undertaken by this group.

A9.28 The council has implemented many schemes outlined in the LTP on a regional and local level. Regionally the council is working with other local authorities on traffic reduction measures and public transport priority proposals. Locally within Trafford various other schemes are being implemented which will reduce transport and thus improve air quality. These schemes include:

A9.29: Existing strategies within Trafford Borough.

Existing Local Strategies	**Detail**
20 mph residential speed limits	Incorporated in Trafford's Road Safety Strategy.
Traffic free residential areas	Home zones
Public transport priority schemes	Metrolink extension from the existing phase 1 line at Cornbrook, through Trafford Park to the Trafford centre and Trafford Quays. Improvements to existing Bury-Altrincham line to resolve peak time congestion problems and facilitate other planned extensions of the Metrolink network.
Bus quality partnerships and contracts	A56 corridor to and from the regional centre (north from Stretford town centre and the borough boundary) and the A5145/B5213 Stockport, Chorlton, Stretford, Urmston/Partington route.
Subsidised public transport	Incorporated into the Trafford travel plan
Park and ride schemes	Example incorporated in Manchester United Football Club Travel plan
Existing Local Strategies	**Detail**
Pedestrianisation and improved walking and cycling provision	Implemented through the Greater Manchester Walking Strategy and Cycling Strategy. Local walking strategy and Trafford Cycling Strategy in place within the Borough.
Traffic calming	Examples include local safety schemes in place primarily to reduce driving speeds and prevent injury/accidents.
Road system redesign	Various schemes exist to improve safety and reduce congestion.
Car pool schemes and Travel plans	The council is also working with the Trafford Centre Ltd, Manchester United Football Club, APSL Ltd (Davenport Green) and other developers to develop travel plans for their development sites. A school travel strategy for Trafford also exists.
Trafford PCT Initiatives	Initiatives to increase physical activity currently being prepared by two Trafford PCT's. The aim is to encourage individuals to use the options available to them for being more physically active. One of these options is to walk/cycle instead of driving.
Safer Routes to school	Schemes in place in 2 pilot areas, Old Trafford and Bowdon. A model school travel plan has been developed to assist local schools.
Rail/waterway freight transport	Significant rail and waterway freight transport facilities exist within the Borough.
Section 106 agreements	The use of 'balancing measures' to seek funding from developments through section 106 agreements (e.g. the provision of air quality monitoring equipment)

Development plans	Consultation on planning applications likely to have an impact on air quality.
Emission abatement equipment, changes in operating pattern and other actions relating to industrial processes	The Environment Agency and TRAFFORD MBC control emission of harmful pollutants into the atmosphere through the authorisation of industrial process procedure in the Environmental Protection Act 1990.
Existing Local Strategies	**Detail**
Fuel Change (Fleet and vehicle)	Raising awareness on air quality and the need for alternative fuels for vehicles/fleet to improve air quality. A seminar on Air Quality and Transport was held in conjunction with Lattice Energy Services, Powershift and other alternative fuel organisations. Intention is to build upon this work across the Borough of Trafford. The Council has also moved to using city diesel and LPG in their vehicles.
Smoke Control Zones	The Borough of Trafford is a Smoke Control Area where it is and offence for an occupier of premises to allow smoke emission from a chimney unless the smoke is caused by the use of an authorised fuel. The Council can take action for non-compliance with this legislation.
Home Insulation Schemes	Various policies exist within the Borough to promote energy efficiency (e.g. through Renovation grants, home repair assistance and various energy efficiency schemes via the Renewal Area Group Repair process).
Bonfires.	Advice on bonfires and taking of action for nuisance caused by bonfires.
Petrol stations/network LPG CNG	Directive (94/63/EC) on controlling VOC emissions resulting from the storage of petrol and its distribution from terminals to service stations has been formally adopted and is implemented in the UK through the authorisation procedure under the Environmental Protection Act 1990.The Council authorises 28 such processes.

What options are locally achievable

Table A9.30: Local options.

Planned Actions	Impacts	Air Quality Improvements High/Med /Low	Cost Impacts High/Med/ Low	Timescale Short/Med/ Long	Responsibility	Expected Output	Link to GM Plan
Use of cleaner and alternative fuels by council fleet	Improve Authority's environmental profile, fuel efficiency savings.	Med	Med	Complete	Traffic & Transportation	All council fleet vehicles have been changed to LPG	AP5
Development Plans- Production of a guide for assessing planning applications with regard to air quality.	Allow the Council and developers to adopt a consistent approach to air quality assessments for developments.	High	Low	Short	Environmental Protection in liason with MAPAC authorities Planning & Building Control, Regeneration		AP32
Safer routes to school- continue to develop school travel plans with more schools in the Borough.	Reduction in pollution from school traffic and encouragement of alternative modes/routes to school.	Low	Low	Short	Traffic & Transportation	Number of people travelling to school by alternative methods to be monitored and recorded.	AP22

Rail/waterway freight transport expansion by the development of new strategic multi-modal rail freight facility at Carrington (Trafford Interchange)	Will result in the transportation of large amounts of freight by modes other than roads, thus reducing pollutant contributions from road freight vehicles.	High	High/Med	Med	Traffic & Transportation, Planning & Building Control	Number of vehicles passing through Trafford interchange to be recorded	AP10
Home Zones (Addison Crescent Estate, Old Trafford)	To change the way residential streets are used by motorists and to improve the quality of life for residents by making the area for people not just for traffic.	Low	Med	Med	Traffic & Transportation, Planning & Building control, Regeneration	Traffic counts and reduced casualty rates will be used to monitor reduced traffic on residential streets	AP28
Liaise with Licensing to impose conditions requiring taxis to fulfil specific emission standards.	Ensure taxis in the Borough are within emission limits at set intervals.	Low	High/Med	Long	Environmental Protection, Licensing	Number of taxi licences with emission limit conditions to be recorded.	AP4
Public awareness exercises (launch of Environment Corner, Public Information Display system and general bulletins / information sources)	Educate the public on air quality and transport related issues, which will encourage them to change behaviour to benefit the environment.	Low	Low	Short	Environmental Protection, Community Strategy	Exhibitions to be set up around the Borough, Feedback from the public used to measure numbers and affectiveness.	AP46

Work from home schemes for employees	Reduction in vehicle movements	Low	Low	Trial period in progress	All departments	Number of people working from home and parking spaces at council buildings monitored.	AP21
Pool of cycles for employees doing jobs local to administrative buildings.	Reduce car journeys for short distances.	Low	Low	Short	Traffic & Transportation, Travel Co-ordinator	Number of cycles signed for and used to be recorded.	AP21, AP20
Subsidised public transport for Council employees.	Reduce car travel and increase use of public transport.	Low	Low	January 2004	Traffic & Transportation, Travel Co-ordinator	Number of discount tickets to be recorded, free spaces in staff car parks monitored.	AP21, AP12
Encourage main businesses within the Borough to develop green transport plans.	Efficient use of existing transport.	Med	Med	Ongoing	Traffic & Transportation, Travel Co-ordinator, Planning & Building Control	The number of businesses with a green travel plan to be registered and monitored by local travel plan	AP21
Develop a car-sharing scheme for employees.	Encourage car sharing and reduce number of	Low	Low	Scheme launched	Traffic & Transportation	Free spaces in staff car park	AP21

	vehicle movements.			Summer - 2003		to be recorded	
Publicity exercises on existing policies in place that impact on air quality (e.g. bonfires, various walking / cycling plans, smoke control areas, industrial process regulation and so on.	Making public / businesses more aware of existing policies.	Low	Low	Short	Environmental Protection	Number of distributed publicity leaflets recorded.	AP46
Encourage local employers and industrial park organisations to use alternative fuels for vehicle fleet. Do this in conjunction with organisations such as The Energy Savings Trust and Powershift.	Fleet conversions to alternative fuels likely to result in reduced pollutant emissions.	Med	Med	Med/Long	Environmental Protection, Traffic Park Business Forum		AP5
Seek funding from developments through section 106 agreements on major planning developments.	To improve the public transport system, walking / cycling facilities and public information systems.	Med	Low	Short	Environmental Protection, Planning & Building Control	No of emission zones recorded.	AP33
Low emission zone in local hotspot areas within the Borough.	Testing of vehicle emissions and issuing fines.	Med	Med	Short	Traffic & Transportation		AP3

What options require partnership action by others

A9.31 All options will require action by The Corporate Air Quality Working Group of the Council. In particular, the transportation and planning disciplines will need to play an active role in assisting with the implementation of the above measures.

A9.32 Options relating to local businesses and industrial organisations will require partnership with such organisations. An example of this already exists with regard to previous work with the Trafford Park Business Forum.

A9.33 Partnership with the Highways Agency will also be necessary with regard to specific local problems along the motorway network. In addition to this it will be necessary to continue to liase with the Environment Agency and Salford and Trafford Health Authority.

Local consultation

A9.34 Consultation with the community of Trafford has been an integral and very important part of the air quality management process. Consultation was undertaken at the end of the first and second stage of the review and assessment process and also at the end of the third stage of the review and assessment process. It consisted of the following:

Stage 1 and 2

1. Seminars (2) on local air quality management for community representatives
2. Writing to all statutory consultees informing them of the findings (executive summaries)
3. Air quality publicity in local media
4. Display of reports at strategic locations within the Borough
5. Vehicle emissions testing days to raise public awareness on pollution from vehicles.

Stage 3 and proposed Air Quality Management Areas (in conjunction with regional consultation exercise)

1. Area board presentations on air quality
2. Articles in local media
3. Distribution of regional air quality leaflets at schools, hospitals, doctor's surgeries, libraries and other public places.
4. Questionnaires asking the local community of their views on improving air quality were distributed to all residents in proposed air quality management areas. Completed questionnaires were entered in a free prize draw for a mountain bike and safety gear. Feedback to the questionnaires has been included in decisions relating to action plans and wider air quality strategies.
5. Consultation displays with air quality information, leaflets, report summaries and maps of exceedence areas at strategic locations in Trafford (e.g. Trafford Town Hall, Trafford 2000 shops, Altrincham Town Hall and Urmston Council Offices).
6. Launch of Trafford's Air Quality web pages housing up to date information on air quality and reports of the stage 1, 2 and 3 review and assessment processes. Links to other web-sites including the Manchester Area Pollution Advisory Councils web-site.

7. First stage in the setting up of an Environment Corner, which will house up to date air quality information and other environmental literature. A public information display system showing real-time air quality information from Trafford's air quality monitoring station will also be located in the corner. The Environment Corners will be officially launched during consultation on Air Quality Action Plans.

A9.35 The aim of the various consultation activities was to provide information to the public and obtain their views on the issues. In particular the questionnaire was designed to ask the people of Trafford for their views on air quality in general, the proposed AQMA in Trafford, and various measures that could be used to reduce pollution from road transport.

A9.36 The results of the questionnaire have also been taken into account in deciding the best options to be included in the action plan to tackle air pollution.

A9.37 Results from the consultation show that people are generally concerned about air quality in their area and would welcome measures to reduce pollution from road transport, as long as they did not increase the cost or inconvenience to drivers.

A9.38 When asked about measures to tackle pollution, over 70% of respondents said they would 'quite like' or 'like very much' the following measures:

- Low Emission Zones (restricted access for more polluting vehicles)
- Home Zones (for residents' cars only)
- Spot emission checks on vehicles
- Spot emission checks on stationary vehicles with their engines running
- Improved cycle lanes

A9.39 However, some people expressed concern about the practicality of enforcing spot checks.

A9.40 Nearly 60% of respondents 'quite liked' or 'liked very much' the idea of bus lanes along the full length of local main roads but there was some concern about the unsuitability of Trafford's roads for this purpose, and the possibility of it generating more congestion and pollution.

A9.41 The most unpopular measures to reduce pollution were those involving greater cost or inconvenience to the motorist. Over 60% of respondents said that they would 'not like' the following:

- Regulations to prevent using their car on certain days of the week
- Road tolls
- Charges for parking at work
- Reducing the number of car parking spaces at shopping centres

A9.42 A majority of the respondents who provided extra comments said that public transport needed to be improved in many ways to make it a viable alternative to car travel. It was viewed

generally that people would still pay higher prices to use their cars if the alternative is not sufficiently attractive.

A9.43 The most popular suggestions were to make the public transport network more frequent, more extensive, more reliable, cleaner, safer, and cheaper, with more parking spaces at stations, and facilities to carry cycles.

Annex 10
Wigan Council

Introduction to the area

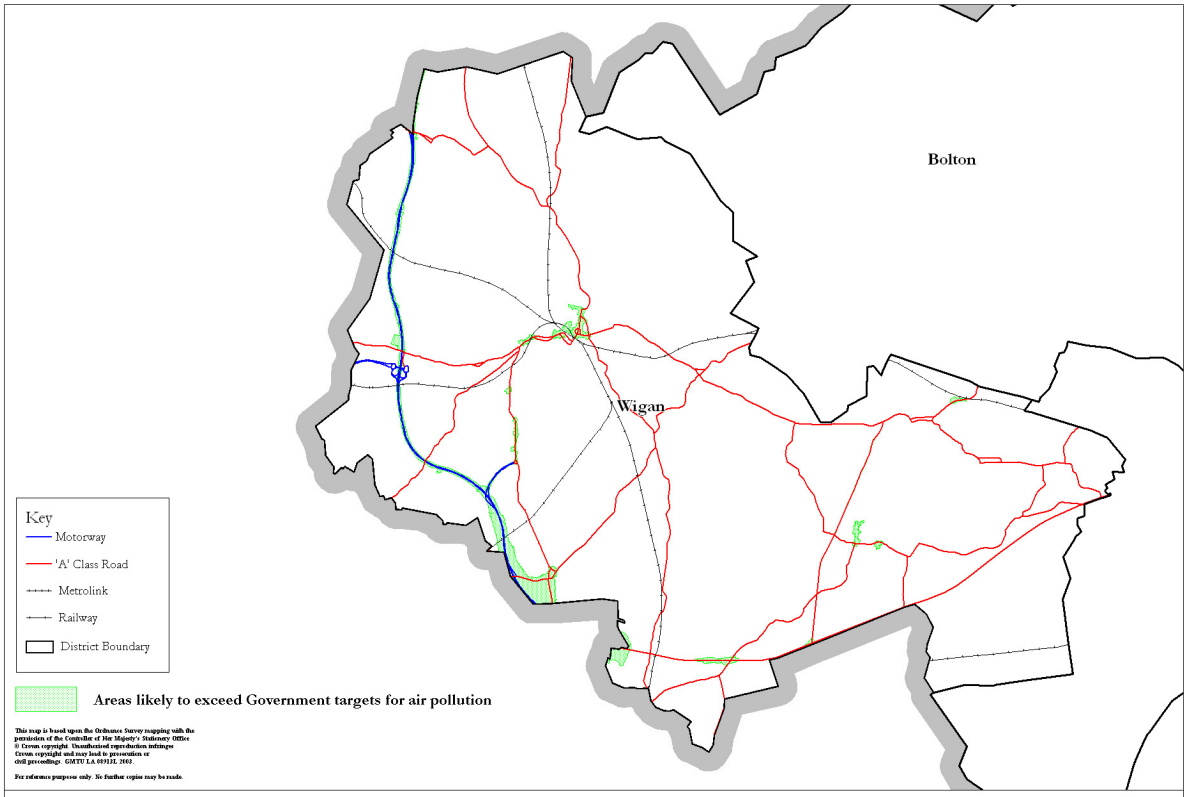
A10.1 The Borough of Wigan lies midway between Liverpool and Manchester, covering an area of 77 square miles. It brings together a number of communities/townships grouped round the two larger towns of Wigan and Leigh and forms the most westerly part of the county of Greater Manchester. With a population of 310,000 Wigan is one of the largest metropolitan districts in the country.

A10.2 Although over 75% of the Borough is open land or countryside, Wigan has a proud industrial past dominated by mining and textile mills. Much of the traditional industry has left however Wigan is still home to a number of large industrial sites. The Borough is skirted by the M6, M62 and M61 motorways but suffers from narrow congested internal road links. The major A49 trunk road runs through the west of the Borough and the A580 East Lancashire Road runs east to west across the south

Summary of review and assessment results

A10.3 Wigan Council's Review and Assessment of Air Quality was completed in 2000, indicating that certain areas of the Borough would not meet national air quality objectives.

Figure 10.1 Wigan Council's Air Quality Management Area



Air Quality Management Areas

Figure A10.1 | The green areas represent results from computer modelling indicating areas which are likely to exceed the annual nitrogen dioxide standard in 2005.

A10.4 In August 2001 the Council decided to declare an AQMA to cover the areas which are predicted not to meet the air quality objective for annual average concentrations of NO_2. The shaded area on the map above indicates the extent of the AQMA in Wigan. It can be seen that the most of the areas border main roads and junctions. Road traffic has been identified as the primary source of the main pollutant of concern, NO_2. Work is in progress to determine the contributions from various vehicle types

Strategic context related to air quality

A 10.5 The action plan will operate within the context of the Council's Community Plan, Corporate Plan and Capital Investment Strategy and integrate with other strategic plans and programmes including the Local Transport Plan, the Unitary Development Plan, the Local Agenda 21 Plan and Best Value

A 10.6 The Community Plan is an overall strategic plan for Wigan bringing together the Council, other agencies, local business, voluntary organisations and local people in order to promote the economic, environmental and social well being of the area. The Council's Corporate Plan and Capital Investment Strategy set out how the Council will address those priorities set out in the Community Plan which relate to Council services and capital resources.

A 10.7 The Community Plan has a number of goals to create a healthy clean and safe environment and good transport links. Tackling the worst areas of air pollution will contribute to achieving these goals.

Sources of pollution in the area

A 10.8 Wigan Councils' Review & Assessment of Air Quality indicated that the only air quality objective at risk of being exceeded was the annual average objective for NO_2. Therefore, Wigan Council has focussed on sources of NOx within the borough.

A 10.9 Current emissions of NOx were scaled forward to 2005, using traffic growth forecasts, and DEFRA emission factors. A number of source sectors were identified, and were found to account for the following relative contribution of total emissions:

Road Vehicle Emissions	Industrial Emissions	Domestic Emissions	Other Source Sectors
55.3%	15.1%	18.3%	11.3%

The figures above show that road vehicle emissions are the largest source of NOx emissions. The relative significance of road traffic emissions will be greater at locations close to major roads. At locations away from major roads, industrial and domestic emissions will become more significant.

A 10.10 The above figures show that emissions from road traffic are the single greatest source of NOx emissions in the borough. However, different roads have different speeds, traffic flow, and traffic composition. The relevant contribution of different types of road and traffic are shown below:

Roads with an annual average daily flow of less than 5000 vehicle movements			Roads with an annual average daily flow of more than 5000 vehicle movements			Motorways		
Goods Vehicles	Cars & Motor-cycles	Busses	Goods Vehicles	Cars & Motor-cycles	Busses	Goods Vehicles	Cars & Motor-cycles	Busses
1.48%	0.89%	0.59%	40.50%	12.63%	3.20%	32.6%	7.50%	0.60%

These figures show that emissions from goods vehicles make up more than half of the NOx emissions from road transport in the borough.

In the Wigan Borough, the worst case exceedance is predicted in the vicinity of the M6 motorway (around junctions 24 and 25) near Ashton-in-Makerfield. It is calculated that a reduction of 12ppb NOx will be necessary to meet the 2005 annual mean objective for NO_2. Further exceedances are also anticipated in the locations of Wigan town centre and Goose Green, where reductions in NOx of 6ppb are required and in the vicinity of junctions 26 and 27 of the M6 where reductions of 5ppb are required.

What is being done already

A 10.11 On road traffic related pollution Wigan has been implementing the policies and the programme of measures laid out in the Greater Manchester LTP. Many of these will have effects (either indirect or direct) on air quality within the Borough. Since the schemes are aimed at traffic reduction and modal transfer from cars to other forms of transport the net effect should be a reduction in traffic and therefore a reduction in pollution derived from it. Additionally preliminary discussions have been arranged with the Highways Agency to investigate measures on the M6 corridor.

A 10.12 On industrial emissions the enforcement of IPPC and LAPC includes consideration of Air Quality Standards. In particular, the operators of the Fiddlers' Ferry coal fired power station are working with the Environment Agency to ensure that emissions from this site do not significantly impact on air quality in Wigan.

A 10.13 On domestic emissions Smoke Control Areas have been in force in much of the Borough since the 1970's and 80's. More recently *Wigan Home Energy Conservation Report 1996* set a target for securing a 22.8% improvement in domestic energy efficiency within the Borough by 2006, by April 2003 an overall improvement of 13.6% had been achieved.

A 10.14 On general policy the *Wigan Council draft UDP – April 2003*, includes for the first time a specific topic on how the UDP should integrate with strategies for air quality. Air quality implications of development proposals are taken into account by the Council's Development Control Committee and guidance for applicants on this issue has been produced. *The Agenda 21 Plan for Wigan* shows how the local community aims to achieve sustainable development. It sets out as one of a number of key themes 'Reducing air pollution' with the objective to measure air pollution in the Borough and take action to minimise it.

What options are locally available

A 10.15 The options that are available for improving air quality in Wigan are shown in Table A10.1. These have been developed by Wigan's Air Quality Task Group which has considered options for improving air quality across the Borough and tackling the local hotspots identified

during the review and assessment of air quality. It is intended to be flexible and to complement the regional options identified in the main plan for working towards the national air quality objectives. Many of the measures included are contained in existing Council plans and strategies and are already being implemented. However, a number of the options will require further analysis, consultation and policy decisions before decisions on implementation are finalised.

Table A10.1: Local options

Planned Action	Impacts	Air Quality Improvement	Cost	Timescale	Responsibility	Expected Output	Link to GM Action Plan
Wigan Integrated Transport Scheme (WITS), incorporating:- (a) Wigan Inner Relief Road (b) Westwood Park Link Road (c) Modal Hub (rail/bus interchange)	To reduce traffic and encourage modal shift over a wide catchment area by providing inter modal hub, relief road and park and ride	Medium	(a) £20 Million (b) High (c) High	(a) Start 2004/5, Completion 2006/7 (b) Start 2004 (c) Long	(a) and (b) Engineering Services Department, Wigan Council (c) Engineering Services Department – Wigan Council, Network Rail, Strategic Rail Authority, GMPTE, Train operators (including Virgin)	Local improvement in air quality (Wigan town centre) *Indicators –* *Days when air pollution is moderate or higher,* *A Q Survey,* *A Q Modelling*	AP 6 AP 19
A5225 Wigan and Hindley Bypass and Town Centre Link Road	To reduce traffic flow through town centres of Wigan, Ince and Hindley	Medium	£80 – 100 Million	Long Planning application anticipated March 2004 – start 2005/6 Completion 2010/11 (anticipated)	Engineering Services Department, Wigan Council	Local improvement in air quality, particularly in the centres of Wigan and Hindley *Indicators –* *Days when air pollution is moderate or higher* *A Q Survey,* *A Q Modelling*	
Leigh Guided Busway	To encourage less car use by providing an attractive alternative	Low	£30 – 40 Million	Decision expected from Sec. of State in 2004. -Start 2006 -Completion 2009 (anticipated)	1) Planning and Development Department - Wigan Council 2) Salford Council 3) GMPTE	Shift from car to bus transport *Indicator - passenger counts and surveys*	AP12

Quality Bus Corridors including - (a) Wigan-Leigh/Atherton (b) Wigan- Standish- Chorley (c) Wigan - Skelmersdale (d) Wigan-Ashton-St Helens (e) Leigh-Atherton-Bolton	To encourage less car use by providing an attractive alternative and improving pedestrian and cycling facilities along the corridors	Low	(a) £1.1 Million (b) £300,000 - 400,000 (c) £750,000 (d) £300,000 (e) £2 – 2.5 Million	(a) Start – 2004/5 Completion 2006/7 (b) Start 2001 Completion 2004 (c) Start 2004/5 Completion 2006/7 (d) Start 2003/4 Completion 2004/5 (e) Start 2001 Completion 2003	1) Engineering Services Department, Wigan Council 2) GMPTA 3) GMPTE 4) Neighbouring Local Authorities	Modal shift from car to bus transport *Indicator –* *Passenger count/surveys to monitor utilisation of service*	*AP 15*
Integrated Transport Capital Programme to improve accessibility to public transport in town centres and townships including:- (a) Local safety schemes (b) Small scale traffic management (c) Pedestrian and Cycle access	To encourage modal shift from cars to public transport, cycling and walking by improving access and using traffic management measures to restrain car traffic in town centres	Low	£1.88 Million per annum	Ongoing	Engineering Services Department, Wigan Council	Modal shift from car to cycle/pedestrian means of travel Local improvement in air quality in urban centres *Indicator –* *Days when air pollution is moderate or higher,* *A Q Survey*	*AP 12* *AP 13* *AP 20*
Transport Infrastructure Fund programme (TIF) to promote alternative means of transport and improving bus/rail services.	To encourage modal shift from cars to public transport, by improving public transport linkages and services.	Low	£3.5 Million per annum until 2010/11	Ongoing	1) GMPTA 2) Engineering Services Department, Wigan Council	Modal shift from private car to public transport services *Indicator - Passenger counts/surveys to monitor utilisation of service,* *A Q Survey*	AP 12
Park and Ride	To encourage modal shift, by providing an alternative to the car	Low	High	Long (Study 2002/3 – not feasible in short term – to be reviewed 2005 and in coming review of LTP)	Engineering Services Department, Wigan Council		AP 19

Work place charges, including:- (a) Ashton, Leigh and Wigan PCT (b) NHS trust (c) Wigan and Leigh College	To encourage modal shift, by penalising commuters who use the car	Low	(a) Low (b) Low (c) £26,000 (for cycle sheds, lockers, and shower facilities)	(a) Review of policy ongoing – Charging scheme introduced at Brian House 2003 (b) Charging schemes ongoing at principal hospital sites (1997) (c) Sustainable Travel Plan issued June 2003 – Car Park Registration Fee implemented September 2003 – Car Clamping Scheme implemented October 2003	(a) Ashton, Leigh and Wigan PCT (b) NHS trust (c) Divisional Manager – Environment - Wigan and Leigh College	Modal shift from private car to public services, cycle or pedestrian transport *Indicator – Parking registration count*	*AP 21* *AP 30*

Traffic Management , Leigh, Ashton , Atherton, Hindley, including:- (a) Leigh – Sustainable Travel Town (b) Ashton – Traffic Transportation Study (c) Hindley - Traffic Transportation Study – gyratory system (d) Atherton – Leigh Bolton Corridor – traffic diversion from main shopping street 10:00 - !6:00 Monday - Saturday	To reduce emissions in the town centres by restraining car use and reduce congestion	Medium	(a) £1.5 Million per annum for 3 years (if successful) (b) High (c) £750,000 (d) £1 Million (part of QBC funding included above)	(a) short list bid submitted – decision expected February 2004 (b) Study commenced 2003 (c) Feasibility/initial consultation completed 2003 – anticipated start 2004 completion 2006 (d) Started 2001 completed 2003	Engineering Services Department, Wigan Council	Local improvement in air quality in urban centres *Indicators –* *No. of schemes implemented,* *Days when air pollution is moderate or higher,* *A Q Survey*	
Traffic Calming programme	To reduce emissions by speed regulation	Low	£150,000 – 250,000 per annum	1997 onwards 1-2 schemes per year 12 schemes completed (at 2003/4)	Engineering Services Department, Wigan Council	*Indicators –* *Number of schemes,* *Traffic Counts,* *AQ Survey*	
Pedestrianisation schemes, Wigan, Leigh, Ashton – including:- (a) Market Street Wigan (b) King Street Wigan (c) Bradshawgate Leigh (extend) (d) Ashton town centre (e) Market Street, Atherton	To alleviate congestion completely in town centres	High	High	(a) Completed 2002/3 (b) Completed 2002/3 (c) Start anticipated 2004 – subject to funding (d) Feasibility study -2003 (e) Completed 2002/3	Engineering Services Department, Wigan Council	Improvement in air quality in town centres *Indicators –* *Days when air pollution is moderate or higher,* *A Q Survey*	AP 23

Home Zones - including:- (a) Browning Street Leigh (pilot scheme)	To reduce traffic and traffic speeds in residential areas	Low	(a) £350,000	(a) Start 2004 Completion 2004	Engineering Services Department, Wigan Council	*Indicators –* *Number of schemes* *Traffic Counts* *AQ Survey*	AP 28
Low Emission Zones, Wigan, Ashton, Leigh – Feasibility study to be considered as part of Wigan Hub proposal and as part of Leigh Sustainable Towns programme	To lower emissions within a restricted area leading to improved air quality in longer term by encouraging the use of cleaner vehicles	Medium	High	Medium - Long	1) Engineering Services Department, Wigan Council 2) Environmental Health and Consumer Protection Department	Improvement in air quality in urban centres of Leigh and Wigan *Indicator – Days when air pollution is moderate or higher*	*AP 3*
Ashton By Pass	To reduce emissions in the town centre, by large scale re-routing of traffic	Medium	High	Long - feasibility study 2003 - no commitment to progress to date (October 2003)	Engineering Services Department, Wigan Council	Local improvement in air quality (Ashton-in-Makerfied) *Indicators –* *Traffic Count Data* *AQ Survey*	Route improvement
M6 Corridor measures: Motorway speed strategy Reduction in traffic volume and local road capacity Junction and link road (particularly A5225 development)	To reduce exposure of the public to road traffic related pollution from M6 motorway	Medium	High	Long - Consultation with Highways Agency progressing at Greater Manchester Level	1) Highways Agency 2) Greater Manchester Authorities 3) Engineering Services Department, Wigan Council	Improvement in air quality along and adjacent to the M6 corridor *Indicators –* *Traffic Count Data* AQ Survey	*AP 25*

Major junction and link road design on A580, A49, A579 Including:- (a) A49 Marus Bridge Roundabout safety scheme (b) A579 QBC	To reduce emissions by focussing on the design of specific junctions where adverse impact has been identified	Medium	High	Short	Engineering Services Department, Wigan Council	Improvement in air quality at road junctions *Indicators –* *AQ Survey*	Gen road improv ement
Route Hierarchy	To reduce emissions in problem areas by routing traffic	Low	Low	Short Feasibility study 2003/4	Traffic Management – Engineering Services Department – Wigan Council	Improvement in air quality in urban centres *Indicators –* *Days when air pollution is moderate or higher,* *A Q Survey*	Traffic manage ment
Wigan Cycling Strategy - Strategy adopted January 2001	To encourage less car use by promoting and encouraging cycling	Low	Low	Ongoing	Planning and Development Department - Wigan Council	Target – to increase cycle use *Indicators -* *Cycle lane provision (km),* *Cycle count*	AP 20
Wigan Walking Strategy - Strategy adopted August 2001	To encourage less car use by promoting and encouraging walking	Low	Low	Ongoing	Planning and Development Department - Wigan Council	Target – to increase walking *Indicator -* *Pedestrian Count*	AP 20

Workplace Travel Plans, Wigan Council, Wigan and Leigh College – including:- (a) Car Share Database (b) Cycle lockers/ Shower facilities in Council Buildings (c) Cycle mileage scheme (d) Loans for bicycles (e) Working from Home (f) Cycle route planner (g) Bus ticket warrant (h) Train ticket Warrant (i) Flexible Working	To promote modal shift for employees of large organisations and reduce congestion	Low	Low	(a) Launched October 2003 (local scheme for Wigan Council/Wigan and Leigh College/NHS also) (b) Ongoing (c) Introduced Wigan Council 2002/3 (d) Introduced Wigan Council 2002/3 (e) Feasibility study 2003/4 (f) Feasibility 2004 (g) pilot scheme 2003/4 (h) Ongoing (i) Ongoing	Travel Plan Co-ordinator – Planning and Development Department- Wigan Council	*Indicators – No. of schemes introduced, utilisation of facilities/schemes*	AP 21

School Travel Plans, prioritised programme including:- (a) Engineering schemes (b) Yellow Bus Project (e) Walking Bus Scheme	To reduce traffic congestion at peak times	Low	(a) £200,000 – 400,000 per annum (b) £400,000 (c) Low (d) Low (e) Low	(a) Programme commenced 2001 - 5 schemes implemented at 2003/4 (b) Ongoing (Standish High School) (c) School Travel Plan Strategy adopted 2002 (d) School Travel Plan Steering Group formed 2002 (e) Walking Bus Scheme trialed 2002/3	Travel Plan Co-ordinator – Planning and Development Department- Wigan Council	*Indicator - No. of schemes implemented*	AP 22
LPG at Petrol Stations Including - (a) Promoting LPG availability (b) LPG availability at Council Depot	To encourage the use of alternative fuels	Low	(a) Low (b) Low	(a) 2004-2006 (b) Ongoing (available Hindley and Wigan Depots)	(a) Environmental Health and Consumer Protection Department, Wigan Council (b) Engineering Services Department – Wigan Council	*Indicators - No. of promotional schemes, No. of sites distributing LPG*	AP 5

Fleet conversions – including:- (a) Policy to purchase LPG vehicles (<3.5 tonnes) where practicable (utilising Powershift grant assistance) – Wigan Council (b) Conversion of fleet where practicable (utilising Powershift grant assistance) - NHS	To encourage use of alternative fuels in fleet vehicles	Low	(a) Low (b) Low	(a) Ongoing (b) 2001	(a) Engineering Services Department – Wigan Council (b) NHS Trust	*Indicator - Composition of fleet* (2003 – Wigan Council - 50 No. LPG vehicles – approx. 20% of fleet vehicles <3.5 tonnes) (2003 - NHS– approx. 95% of fleet)	AP 5
Taxis and PHVs Including – (a) Licence fee reduction for LPG vehicles (£20) (b) Taxi use survey (c) Review engine capacity policy (d) Review vehicle specification standard (e) Promote use of LPG/low emission vehicles	To improve emissions from taxis etc by agreeing voluntary standards	Low	Low	(a) Ongoing (b) 2004 (c) 2004 – 2006 (d) 2004 – 2008 (e) 2004 - 2008	Environmental Health and Consumer Protection Department, Wigan Council	*Indicator - Composition of taxi and PHV fleet*	AP 4 AP 5

UDP Policies **EV1B - Not permitting development which would result in unacceptable levels of air pollution nor which would have an unacceptable effect on air quality particularly in or adjacent to AQMAs declared by the Council under the Environment Act 1995. Sensitive development will not be allowed in areas of unacceptably poor air quality** .A1 – minimising the need to travel A1A – Transport assessments .AA1B – Travel Plans A1D – Walking A1E – Cycling A1F – Bus provision A1G – Physical Improvements to the Bus Network (Quality Bus Corridors) A1H – Public Transport Corridor (Guided Busway) A1J – Rail Infrastructure A1L – Taxis A1N – Strategic Route Network A1P – Major highways schemes A1R – Highway access (home zones, traffic calming A1S – Parking A1T – Park and Ride G1A – Impact of Development on Amenity (Wigan Council Draft UDP –April 2003).	To encourage less car usage by including policies to encourage cycling and walking, development of home zones and location of developments to minimise need for travel	Medium	Low	Short	Planning and Development Department – Wigan Council	*Indicator:- Improvements in air quality (EN1 in UDP)*	AP 31

Development Control Policies	To ensure that air quality is considered in the planning process by developing policy on air quality assessments and publishing guidance for applicants	Medium	Low	Ongoing	1) Planning and Development Department – Wigan Council 2) Environmental Health and Consumer Protection Department, Wigan Council	*Indicator* - Number of AQ conditions imposed	AP 32
Fiddlers Ferry power station Air Quality Management Plan	To ensure that emissions from Fiddler's Ferry do not impact on air quality in Wigan	Low	Low	Ongoing	Environment Agency	*Indicators - Inspection returns monitored by DEFRA, Enforcement Action*	AP 34
Industrial Air Pollution Control	To reduce emissions from industrial processes through IPPC/LAPC regimes and clean air legislation in collaboration with EA	Low	Low	Ongoing	1) Environmental Health and Consumer Protection Department, Wigan Council – Environmental Protection Section 2) Environment Agency	*Indicators - Inspection returns monitored by DEFRA, Number of air pollution complaints (other than noise), Number of statutory notices served*	AP 34
EMAS/ISO14000	To reduce emissions from all business related activities including process and transport by promoting the use of Environmental Management Systems	Low	(a) £200,000 per annum (b) Low	(a) Ongoing (b) 2004 - 2007	(a) Groundwork Environmental Business Service (b) Environmental Health and Consumer Protection Department, Wigan Council – Environmental Protection Section	*Indicators - Businesses advised, Businesses receiving formal advice (report and action plan), Reduction in energy used (KW/h/tonnes CO2)*	AP 34 AP 39

Smoke Control Zones	To control emissions from domestic premises	Low	Low	Ongoing	Environmental Health and Consumer Protection Department , Wigan Council – Public Health Section	*Indicator - Enforcement action initiated by Wigan Council*	AP 35

HECA programme	To reduce emissions from domestic premises by promoting and encouraging energy efficiency	Low	(a) £21,000 (2003/2004) (b) £1,000 (2003) (c) Low (d) £22,000 (2003/2004) (e) £920,000 (2003/2004) (f) Low (g) £1Million (2003/2004) (h) Low (i) £1,000 (2003)	Ongoing	(a) Environmental Health and Consumer Protection Department, Wigan Council - Urban Renewal Service – Provision of advice and grant assistance for energy efficiency (b) Environmental Health and Consumer Protection Department, Wigan Council - Housing Strategy Section – energy awareness promotion and Neighbourhood Energy Saving Scheme(NESS) (c) A&M Insulations Limited, NESTmakers and Scottish Power – NESS (d) Greater Manchester South Energy Efficiency Advice Centre (GMS EEAC) – energy efficiency information/home energy checks, NESS (e) EAGA - Warm Front Grants and advice (f) Housing Benefit Service, Wigan Council – targeted delivery of advice (g) Wigan and Leigh Housing and British Gas – provision of cavity wall and loft insulation (h) Powergen – Promotion of EEC4, energy efficiency measures (i) Ashton Leigh and Wigan PCT – energy use awareness	*Indicators - Overall Improvement in Energy Efficiency (since 1st April 1996)* *-13.6% at March 2003,* *% improvement in energy efficiency per year* *-1.17% - 2002/2003,* *Reduction in CO2 emissions (tonnes per year)* *- 10,919tonnes – 2002/2003*	AP 36

Energy Management	To reduce emissions from Council premises by promoting and implementing energy efficiency	Low	£70, 000 – 100,000 per annum	Ongoing	Utilities Management - Borough Land and Property Department- Wigan Council	*Indicator-* *No increase in bench mark level (set 2003/4)*	AP 39

Promotion/Education	To raise public awareness and provide public information on air quality, including:- (a) Cleaner Vehicles Campaign (b) In town without my car day (c) Eco Schools Programme (d) Environmental Training (e) Energy Advice	Low	(a) £50,000 (approx. share of funding award from DofT) (b) Low (c) £35,000 per annum (d) £9,000 (2003/4)	(a) 2003/2004 (b) 2003/4 (c) Ongoing (d) 2003/4 (e) 2003/4	(a) Environmental Health and Consumer Protection Department – Wigan Council Cleaner Vehicles Campaign – Cleaner Vehicles Roadshow (16/09/03) Cleaner Vehicles formal testing (b) Travel Plan Co-ordinator – Wigan Council In Town Without my Car Day (22/09/03) (c) People and Places Eco- schools Co-ordinator Education/Engineering Services Department, Wigan Council Eco-school Programme (d) and (e) Wigan and Leigh College and Sustainability Co-ordinator – Planning and Development Department – Wigan Council	*Indicators -* *(a) No. of vehicles passing/ failing test* *Type of vehicles* *(b) No. of events* *(c) Bronze/Silver Awards* *Green Flag Awards* *Currently 20 schools with Green Flag award* *Target of 5 awards per annum* *(d) and (e) No. of events*	AP 41 AP 42 AP45 AP46

What options require partnership actions by others

A 10.16 The success of much of the AQAP in achieving improvements in air quality relies heavily on partnership with other GM Authorities and at local level on the integration of Council plans, strategies and work programmes. There are other options where the Council will be unable to progress without collaboration with other agencies and sectors including:

- Highways Agency - M6 corridor
- Environment Agency - Industrial emissions
- Groundwork - EMAS/ISO 14000
- Local Employers & Trade Unions - Travel Plans, Fleet conversions
- Bus & Haulage Companies - Fleet conversion / low emission vehicles
- Oil Companies - Widespread supply of LPG / Auto Gas

Local consultation

10.17 73% of Wigan respondents to the Greater Manchester consultation exercise *Clearing the Air* agreed with the proposed AQMA. They also provided views on what they felt should be done to reduce air pollution. The most popular measures to improve air quality were encouraging people to use public transport and reducing emissions from industry. The least popular options were charging motorists to enter towns and introducing work place parking charges.

10.18 In addition to being partners in the Greater Manchester consultation programme Wigan has established the Wigan Air Quality Task Group. The group, chaired by Wigan's Cabinet Member for the Environment includes representatives from community groups, employers, other agencies and Council departments, initially focussed on the extent of the AQMA to be declared and subsequently on the options for the local annex of the AQAP.

10.19 The Air Quality Task Group will continue to consider the options available to improve air quality in Wigan. Additional local consultation on the AQAP will also be carried out in accordance with Wigan's corporate Consultation Strategy using existing mechanisms such as the Citizens Panel, comprising approximately 2000 adults recruited to be representative of the Borough, and the developing Community Forums.

Appendix A11
Detailed assessment of each of the proposed actions

Action AP1 – To implement a Cleaner Vehicles Campaign. This involves a combination of formal and informal vehicle emission checks, with fixed penalty notices issued if vehicles do not meet the emissions standard on formal tests.
Further details: Local Authorities who have declared AQMAs have been granted the powers to conduct roadside emissions testing for vehicles entering or leaving the AQMA. With the aide of the Police, Local Authorities will carry out formal testing, with vehicles failing the exhaust emissions test given a fixed penalty notice of £60. The Greater Manchester authorities have received grant funding to run a joint publicity and enforcement campaign to raise public awareness, reduce the number of grossly polluting vehicles on the road and to encourage motorists to regularly service their vehicles.
Non – Air Quality impacts: There may be some social exclusion implications as low-income groups are more likely recipients of the fixed penalty notice. However, the scheme is aimed primarily as an awareness-raising project, with a long lead in time giving drivers prior notice before the enforcement action begins. The programme will focus on the environmental impact of poorly tuned vehicles, as well as increasing personal awareness and accountability for travel behaviour. Drivers will also save money by reducing fuel bills.
Cost: The cost of the scheme for the first year is ~£500,000, The cost for subsequent years will be up to £152,000. The main cost to authorities will be in Officer time to cover publicity events and carry out enforcement work.
Air Quality Improvement: Because the programme is taking place across the whole of the conurbation, some improvement in air quality should be delivered. Analysis of the statistics generated on testing days will allow us to assess the number of polluting vehicles that need to be addressed. The outcomes will be included in the Air Quality Progress Report.
Summary: The Roadside Emissions Testing Programme is a joint awareness raising and enforcement exercise aimed at removing grossly polluting vehicles from the roads and encouraging drivers to ensure their vehicles are regularly serviced.

Action AP2 – Work with bus operators to reduce bus emissions. This will include grant-aid for low-pollution technology and changes to conditions for services that GMPTE procures.
Further details: Technologies exist that reduce vehicle emissions. However there is currently no

financial incentive to commercial companies that operate 90% of the bus network in Greater Manchester. There is also a need to develop and trial new technologies.
Non – Air Quality impacts: Creation of local employment and encouragement of local entrepreneurs who wish to develop clean vehicle technologies.
Cost: GMPTE/A has established a budget of £500,000 for 2002/3. This will be reviewed for effectiveness and is anticipated will be an annual budget.
Air Quality Improvement: Significant reduction in particulates emitted by buses in Greater Manchester. Little effect on NO_x.
Summary: Cost-effective way of reducing particulates. However new, affordable technologies acceptable to operators are needed for NO_x reductions.

Action AP3 – An initial scoping exersise into a Low Emission Zone has already been undertaken. This has identified the need for further analysis to be undertaken to examine the effectiveness of an LEZ in Greater Manchester: ▪ **Further preliminary emissions reduction study by GMTU to provide useful baseline information on the potential benefits of a LEZ.** ▪ **Commission a full feasibility study for a LEZ across the Manchester/Salford regional centre, within outlying town centres and within the M60 orbital. This is dependent upon the outcome of the preliminary study and further consideration by politicians.**
Further details: The aim of a Low Emission Zone is to reduce vehicle emissions in a given geographical area by allowing only cleaner vehicles to enter or by reducing the number of vehicles in the area overall. The Greater Manchester local authorities would like to carry out a feasibility study to determine whether or not it would be appropriate to introduce Low Emission Zones in Greater Manchester and, if so, where these should be and how they should operate.
Non – Air Quality impacts: Would result in an overall improvement of the environment in the Zone (less traffic, less noise and improved road safety). Could encourage investment in cleaner vehicle technology and use of cleaner fuels. Could result in social exclusion as it may impact on older, more polluting vehicles, owned by lower income groups, particularly where public transport alternatives are limited or expensive. May impact on local retail and commercial sector. May be expensive and difficult to enforce.
Cost: The initial feasibility study will cost ~ £5,000. The cost of carrying out the full feasibility study is estimated at £100,000. The cost of implementing Low Emission Zones would be assessed as part of the full feasibility study.

Air Quality Improvement: Could significantly improve local air quality within the Zone, but also has potential to displace vehicles and emissions to other areas.
Summary: The proposed feasibility study will assess the potential contribution of Low Emission Zones to improving air quality in Greater Manchester. The study will consider the potential air quality and non-air quality impacts of Low Emission Zones.

Action AP4 – Review the regulation of private hire and hackney emissions and ensure it is fully integrated into the taxi-licensing regime.
Further details: Involves working with the Greater Manchester Licensing Managers Group to examine the current licensing requirements and to identify and implement any feasible actions to help reduce emissions. The licensing regime could also be used to reduce emissions by promoting actions such as use of alternative fuels, and improved fuel efficiency resulting from measures such as good vehicle maintenance and driving practices.
Non – Air Quality impacts: Potential increased maintenance costs, potential increased license fees, possible resentment of any increased regulation, increased emissions controls could lead to fewer taxis, reduced fuel use leading to financial savings for taxi operators.
Cost: Will depend on the actions identified. Increased regulation will lead to increased costs for the local authority. However these costs could be recovered by increasing license fees. Promotional work varies from the relatively inexpensive distribution of information to the significant expense involved in offering financial incentives.
Air Quality Improvement: Actions will reduce emissions of both PM_{10} and N0x. The air quality improvement will be most significant in urban areas where many taxis operate.
Summary: This is an area where the local authority can have a direct impact on vehicle emissions for relatively little extra cost. All potential actions will therefore be identified, considered and implemented where appropriate.

Action AP5 – Support the take up of Powershift and CleanUp grants for new vehicles and for retrofitting existing vehicles. **Local authorities to develop Fleet Management policies to include reduction in vehicle emissions (some Councils already have these in place - see local annexes)**
Further details: Grants are available through the Powershift programme to enable vehicles to run off alternative fuels (e.g. LPG). The CleanUp programme provides grants to retrofit vehicles with technology to reduce emissions (e.g. particulate traps). Local authorities operate large vehicle fleets and have a role to play in ensuring that their own vehicles contribute as little pollution as possible.
Non – Air Quality impacts Fuel savings and reduced VED may result from changes to alternative fuels but there may be increased servicing and maintenance costs. Depot refuelling infrastructure changes are likely to be required.

Cost
Upto 75% grants are available through the Powershift and CleanUp programmes.

Air Quality Improvement
Alternative fuels can lead to significant reductions in emissions, for example a large van run on LPG releases around 11% less NO_x emissions compared to a diesel fuelled version. Particulate traps can reduce particulate emissions by upto 95%.

Summary
The Powershift and CleanUp programmes offer grants to reduce emissions from vehicles. Local authorities have a responsibility to set a good example and reduce emissions from their own vehicle fleets.

Action AP6 Encourage shift to the use of rail transport for freight by:-

- **Highlighting the need for freight capacity improvements to the rail network**
- **Tackling congestion at access points to existing intermodal terminals**
- **Encouraging Development Plans/ Local Development Frameworks to protect suitable intermodal sites and to retain private siding facilities wherever possible when sites are redeveloped.**

Further details:
The use of the railway network for freight will reduce the number of HGVs on the roads and thereby reduce emissions. For the railway network to be effectively used for freight it is essential that works of improvement are carried out. There are pinch points for rail freight movement between the Trafford Park freight terminal and Stockport where there are competing demands from both local and longer distance passenger services.
Development Plans and Development Briefs can be used to ensure that existing points where trains can be loaded /unloaded from the road network are maintained and protected whenever re-developments take place.

Non – Air Quality impacts:
Fewer goods vehicles on the roads will reduce congestion generally. Extra demand on the railway network may encourage investment in the longer term from the SRA, which will be beneficial in itself, and may in turn increase capacity for passenger services. Real improvements in the rail network will require a high level of strategic investment and extensive collaboration with a fragmented railway industry. There is a danger that, without necessary improvement, an increase in rail freight transport will be difficult to achieve. There is likely to be increased local HGV traffic at the loading/unloading points on the railway network.

Cost:
Encouragement and promotional action will be relatively in-expensive. The cost of improvements to the railway network will be very expensive.

Air Quality Improvement:
Reducing HGV traffic in the region will have a significant positive impact on air quality.

Summary:
Goods vehicles have been found to be the most significant source of N0x and PM_{10} emissions in Greater Manchester. Actions that effectively shift freight from road to

rail have the potential to greatly improve air quality and clearly the greater the shift the greater the improvement. This potential level of improvement could justify the likely major costs involved.

Action AP7 Promote reduced emissions from Goods Vehicles by:

- **Promoting the take up of grant funding for retro fitting of emissions reduction technology or switching to less polluting fuels such as LPG.**
- **Encourage operators to speed up adoption of improved lower emission vehicle specification**
- **Promoting sustainable transport by encouraging measures such as driver training, vehicle tuning and journey planning.**
- **Produce an Air Quality Best Practice Guide for circulation amongst HGV and fleet operators.**

Further details:
The aim is to address the issue of HGV particulate emissions, as identified in the Stage 4 apportionment exercise. The promotion of best practice will be carried out through dissemination by the operator associations and the MAPAC and LTP web sites.

Non – Air Quality impacts:
Fuel bills to operators should be reduced, as will the general environmental impact of HGV's. However, there is a view that servicing and maintenance costs of alternative-fuelled vehicles may rise.

Cost:
This depends on the rate of take up by operators, but the major part will be borne by Government, through Energy Saving Trust grants. The costs of dissemination will be borne by Government, Local Authorities and the operator associations

Air Quality Improvement:
Without a measure of the rate at which operators take up the grants, it is not possible to quantify the improvement in HGV emissions which may be expected, but if campaigns were successful a significant improvement could be expected.

Summary:
This action has the potential to tackle the significant particulate and nitrogen oxide emissions identified as coming from HGV's, but is critically dependent on a positive response from operators. This sector is especially vulnerable to the economic cycle, and parts of it operate in an extremely competitive environment, which makes any increased operating costs difficult to absorb.

Action AP8 – Seek the support and guidance of central Government in relation to the promotion and implementation of Sustainable Distribution Plans amongst commercial operations and other agencies in the region.

Further details:
Government wants to see a reduction in the environmental impact of goods movement

and delivery, whilst at the same time maintaining and improving efficiency and safety. These intentions were set out in " Sustainable Distribution", one of the daughter documents to the Transport White Paper. Vehicle operators will implement the measures, but Government and Local Authorities have an important role in engaging them, disseminating information, and managing highway networks accordingly.
Non – Air Quality impacts: Reduction of the noise impact of deliveries. Possibility of easing delivery restrictions, and hence securing more efficient distribution, in return for quieter methods of loading/unloading Reduction in empty running mileage. More freight carried by rail and water Improved safety of operation Better integration with planning principles Better energy efficiency in distribution
Cost: These will include investment in quieter equipment for loading/unloading , and other measures designed to reduce the noise and disturbance from out-of-hours deliveries. They may have a net cost to operators, if they are not balanced by efficiency gains.
Air Quality Improvement: More efficient distribution should lead to fewer miles being run, with consequent savings in emissions
Summary: This measure principally relates to achieving optimal distribution patterns, but to the extent that this reduces overall mileage, there will be a reduction in the categories of emission associated with HGV's.

Action AP9 – Examine the feasibility of night-time deliveries by investigating the relaxation of delivery curfews relating to existing or proposed commercial premises, ensuring that there is a full consideration of potential noise/nuisance impact.
Further details: Night-time deliveries will reduce goods vehicle movements during the day and therefore reduce daytime emissions. It is likely that reduced daytime goods vehicle movements will also reduce congestion on major routes, which should also be beneficial to air quality. Any investigation of relaxation in loading and delivery curfews at commercial premises must consider carefully any potential noise, fume or other nuisance impacts at neighbouring properties. There is some evidence that current restrictions have been imposed on an ad hoc basis over a long period without any particular consistency, and may not reflect the current environmental impact of delivery operations.

Non – Air Quality impacts: Reduced congestion, reduced journey times, less driver fatigue/stress, greater potential for nuisance
Cost: The costs of the investigation would be relatively small. The main costs of implementation would relate to increased wage payments to operatives and drivers and any additional costs relating to operating premises at night / early morning. The level of increase would depend on the scale of feasible nightime deliveries. However, these costs could be outweighed by the journey time savings achieved, compared with daytime movement.
Air Quality Improvement: The transfer of goods vehicle journeys from day to night will reduce congestion during the day on major routes and therefore should lead to a significant reduction in emissions.
Summary: This action has the potential to result in significant improvements in air quality but should only be actioned if there can be confidence that the change in operation does not lead to problems with nuisance.

Action AP10 – Identify and address key environmental impact points for freight on the road and rail network.
Further details: A comprehensive assessment of all points on the road and rail network where freight has the biggest detrimental impact or has the potential to have a positive impact on the environment will allow the identification and implementation of any feasible actions to attempt improvements.
Non – Air Quality impacts: May lead to reductions in congestion and general nuisance problems from HGVs, improve use of rail.
Cost: The investigation work will be relatively inexpensive. However implementation work has the potential to have a high level of expense.
Air Quality Improvement: Potential air quality improvements could be high depending on the actions identified and finance available to implement.
Summary: This action has the potential to achieve major improvements in air quality. However success will depend on finance available and the necessary commitment from relevant agencies to carry out the actions identified.

Action AP11 – Increase the capacity of Metrolink Phase 1 and pursue proposals to extend the existing Metrolink network to include:

- **Oldham and Rochdale**
- **East Manchester and Ashton-under-Lyne**
- **South Manchester and Manchester Airport**
- **Trafford Park and the Trafford Centre**
- **Lowry spur**
- **East Didsbury and Stockport**

Further details:
Metrolink extensions are a key prong in Greater Manchester's strategy to provide a quality public transport system which will be an attractive alternative to the private car. Metrolink is a network of modern tram (light rail) routes which operate at a high frequency, either on existing rail alignments, new segregated tracks, or on-street with priority over other traffic. The scheme will be implemented with a combination of Government grants, borrowing approvals and private sector contributions.

Non – Air Quality impacts:
Metrolink is a system with a low level of impact on the community. It will help to achieve regeneration, a reduction in the rate of traffic growth, and hence congestion, as people use it in preference to the private car

Cost:
£593M was originally identified as the scheme cost, although recent tenders are all £820M in excess of this. Light Rail is viewed by some as an expensive mode, but it is cheaper than the heavy rail system, and has proven ability to offer an attractive alternative to the car because of its high frequency and its priority over other traffic.

Air Quality Improvement:
Phases 1 and 2 have removed 2.6 M car journeys p.a. from roads, which has reduced pollution proportionately. Roads running parallel to Metrolink have seen traffic reductions of up to 10%, and within 2 km of the line, between 14 and 50% of car trips to Metrolink-served destinations have switched from car to the system. The three extensions are projected to save a further 6.4 M car journeys p.a., with consequent pollution reductions. It is estimated that the switch from car to tram on Phases 1 and 2 of Metrolink has removed 3,643 metric tonnes of CO_2, 486 tonnes of CO and 15 tonnes of NO_x per annum from the atmosphere. The proposed metrolink extensions therefore have the potential for the following reductions in emissions; 8967 tonnes CO_2, 1196 tonnes CO, 36.9 tonnes NO_x. Further work to assess the air quality impact of Metrolink is planned.

Summary:
This is likely to be a highly effective measure in air quality terms, but only on the specific corridors served. – and provided that newly-generated traffic is not allowed to fill the capacity vacated by car trips diverted to Metrolink.

Action AP12 – Aim to ensure that public transport is co-ordinated, accessible and effectively integrated with other means of transport.
Further details: GMPTE, as one of the 11 partners in the Greater Manchester Local Transport Plan, will aim to reduce both the impact and the growth of motorised traffic. The public transport network as a whole could play a more significant role, and the LTP gives emphasis to realising this potential. The PTE will develop and promote public transport as a viable alternative to use of the car. One aspect of this is through the effective co-ordination and integration of services and between differing modes to make journeys as seamless and easy as possible, whilst, in tandem, increasing accessibility throughout the network.
Non – Air Quality impacts: The development of an accessible and integrated public transport network offers many benefits. It can improve the journey opportunities for the mobility impaired who, without access to a car, would otherwise find it difficult to travel. Furthermore, it can also overcome issues related to social exclusion, by, for example, widening access to employment and leisure facilities. The development of an integrated and co-ordinated network also plays an important part in re-generation projects, in providing access to new developments, employment, homes and leisure facilities. Public transport is also much less demanding upon resources, such as fuel and road space, for instance.
Cost: The actual and estimated local transport capital expenditure figures for the LTP programme, for the period 2001-02 to 2005-06 are, as follows (all figures in £000's) 2001-02 £73658, 2002-03 £98461, 2003-04 £91993, 2004-05 £74538, 2005-06 £68631.
Air Quality Improvement: By improving integration, co-ordination and accessibility of public transport across the county we can attract car drivers onto the network. This is in addition to ensuring that we do not lose existing passengers to car travel. Public transport needs to be able to compete with the car in making journeys as easy, simple and seamless as possible if it is to have any impact upon reducing reliance upon the car. It is limiting the growth of car usage, and ultimately reducing the dependence on the car, which is to have most impact upon air quality.
Summary: The main improvements to air quality will come about as a result of the investment in major transport projects and initiatives and the resulting reduction in car use. Providing a network that is easy to understand, where different modes work and connect with each other and where access to those less able is not restricted is the key to these initiatives.

Action AP13 – Improve the safety and security of the public transport network.
Further details: By improving both the actual and perceived safety and security we can retain existing

users of public transport and attract new users to the network from other modes.

Non – Air Quality impacts:
Greater feelings of safety and security by all passengers can lead to an increase in use. This results in greater revenues, which, in turn, can help ensure that the network remains stable and trustworthy.
Actual improvements in safety and security results in less criminal activity, which makes public transport more pleasant to use. In addition, the reduction in criminal activity leads to greater reliability of the network as assets are in use, as oppose to being taken out of service for repair.

Cost:
The nature of improvements to safety and security means that they are small, individual schemes undertaken by many agencies and operators. The cost of fitting CCTV into Rochdale Bus Station was in the region of £16,000 for example.

Air Quality Improvement:
Improving safety and security, as well as the perception of it, encourages a modal shift from car to public transport. In addition, the improvements to safety and security can enhance reliability of services operated, thus retaining existing ridership and avoiding the exodus back to the car. The result is a reduction in car use, or at the least, a reduction in the growth of car use. Thus, air quality does not deteriorate due to excessive use of the car.

Summary:
The delivery of a safe and secure transport system (both real and perceived) will generate trust in existing users and attract additional users from other modes. Additional users to the system will add value to the network by a) encouraging greater numbers onto public transport which itself increases natural security and b) improves revenue streams for operators. Ultimately, less journeys by car improves air quality.

Action AP14 – Continue with the programme of upgrading to provide real time information on the public transport network.

Further details:
Real time information relates to the provision of constantly updated running details for public transport. This can be in two major forms. The first, at the point of use, for example, at the train or tram station, or at the bus stop. The second manner in which real time information can be provided is via the internet and website, including WAP phones. The technology generally uses a tracking system so vehicles or trains can be constantly monitored. Not only can real time information offer details on services for passengers, it can also offer new ways of monitoring services for both the operators and the PTE.

Non – Air Quality impacts:
Real time information systems remove some of the uncertainty of travelling by public transport. With constant updated information the passenger can avoid lengthy waits at a cold bus stop or train station by using the information provided to ensure that they arrive at the stop at the time the service is *actually* going to arrive, as oppose to the time the service is *supposed* to arrive. With constantly updated information passengers

can see whether or not their service has already left, is running late, or even if it has been cancelled, before they have even left their house or place of work. The equipment used to operate real time information systems can also be used for monitoring purposes. This can result in improved reliability of the network and so an improved service for passengers, as well as a reduction in costs to the operators.

Cost:
GMPTE is planning on spending approximately £3M on real time passenger information systems in the next 3 years.

Air Quality Improvement:
The provision of real time information makes public transport more competitive against the car. It can remove the uncertainty of using the network, making public transport more attractive, especially for non-users. The result is that emissions are reduced and air quality can be improved.
Furthermore, real time information can be used by operators for monitoring purposes. It can allow buses to be turned short if bunching is occurring for instance, thus reducing the number of 'wasted' miles, and as a result, reducing emissions.
Speculatively it could give us information about the pinch points for buses - i.e. where buses are held up. We could target these pinchpoints by bus priority measures so that buses get through more quickly. This will reduce bus emissions and, by improving bus journey times, attract more people away from cars.

Summary:
Anecdotal evidence shows that where Quality Bus Corridors have been introduced, with real time information a feature of these, patronage has increased by up to 70% and traffic levels have been reduced. Real time information is a useful tool in making public transport a more viable option. Whilst it has limited effects on actually improving the services operated it can play an important role in making the network appear to be more reliable. The result is that we can retain existing and attract new passengers to the public transport network, thus reducing the number of car journeys and, as a result, reduce the impact of emissions from cars.

Action AP15 – Continue to implement Quality Bus Corridors as outlined in the Greater Manchester Local Transport Plan.

Further details:
Quality Bus Corridors (QBCs) are being developed on the main bus routes in Greater Manchester. They comprise bus lanes and other priority measures, bus stop improvements (including more bus shelters), and new low-floor buses. The proposed network is set out in the 5-year LTP to 2005/6. This will be implemented by GMPTE and the District Councils with LTP resources.

Non – Air Quality impacts:
Journey times will become more reliable, thus benefiting existing passengers, with possible savings in operating costs. As QBC's are often implemented in association with other street improvement schemes, there is also a wider local environmental benefit.

Cost:

The programme to complete the Greater Manchester QBC network will cost at least £60M
Air Quality Improvement: Improvements can be expected from reductions in car journeys arising from modal shift, and from the reduced pollution generated by the new buses themselves, as a result of Euro 2 and 3 engines, and exhaust catalysts.
Summary: Whilst not having as impressive a record as Metrolink in attracting people from their cars, QBC's do have the potential to enhance the attractiveness of bus services in those areas which will not benefit from Metrolink, such as on the Leigh-Salford-Manchester QBC, where buses will use a segregated route with steering guidance for much of the journey.

Action AP16 – Continue to subsidise public transport through bus subsidies to encourage bus usage.
Further details GMPTA provides concessionary support, subsidised schools services and subsidised bus services for some routes.
Non – Air Quality impacts Concessionary support provides subsidised public transport for children and senior citizens making access to other services cheaper. Subsidies for some bus services ensures that public transport is available in areas where they would otherwise not be provided.
Cost In 2003/04 the following support was given to bus services: £42,250,000 – Concessionary support £9,870,000 – Subsidised bus services £7,330,000 – Subsidised school services
Air Quality Improvement The subsidies encourage the use of public transport and provide an alternative to the use of the private car for some journeys.
Summary GMPTA provides bus subsidies to encourage bus usage and provide a service for the community.

Action AP17 – Investigate the feasibility of and implement public transport that produces no pollution at street level.
Further details: Metrolink produces no pollution at street level, and is very successful. Options for extending Metrolink will be examined. Other technologies such as Trolleybus, and hybrid buses will be evaluated.
Non – Air Quality impacts: Electric vehicles provide a modern, clean image that attracts inward investment as well as being effective public transport. Regeneration benefits.
Cost:

The costs of fixed infrastructure (such as tracks or wires) and the vehicles are high, so can only be justified for major passenger flows.
Air Quality Improvement: No pollution at street level. May also provide impetus for banning polluting vehicles from parts of town and city centres.
Summary: An expensive, but often cost-effective way of regenerating an area and moving people around with no pollution at street level. The only current example is Metrolink, which is currently being extended.

Action AP18 – Set up Bus Quality Agreements that include challenging air quality standards.
Further details: Bus Quality Agreements for Quality Bus Corridors can include air quality standards. However QPAs are voluntary, so must be set at a level that operators find acceptable. This means they are a limited tool for improving air quality
Non – Air Quality impacts: Helps to ensure that better quality buses are used on Quality Bus Corridors.
Cost: No additional cost, otherwise likely to be resisted by commercial operators.
Air Quality Improvement: Marginal improvements in particulates. No improvement in Nox.
Summary: A fairly limited measure, although standards could be tightened through negotiation.

Action AP19 – Implement new 'Park and Ride' schemes wherever feasible and appropriate.
Further details: Car parks near existing, or with dedicated public transport services can encourage drivers to use public transport for part of their journey. Some park and ride facilities already exist in Greater Manchester, with further work underway to identify possible sites through the Local Transport Plan and to develop a Park and Ride Strategy.
Non – Air Quality impacts: Increased access to, and viability of town centres, including ability to re-allocate space used for car parking in centres. However significant issues include land requirement (often Green Belt), and unwanted environmental effects (such as noise and congestion) near sites. May result in additional or longer car trips to park and ride sites, and overall there is no evidence that Park and Ride would reduce car mileage in Greater Manchester.
Cost: The cost of providing park and ride facilities will vary depending on the location and

scale of individual proposals. However £5,000 capital and several hundred pounds maintenance pa per space is typical. As many people using park and ride would previously have accessed public transport anyway, the real costs are even higher.
Air Quality Improvement: Depends on whether existing public transport is used more efficiently, or new services are provided.
Summary: Overall there is no evidence that Park and Ride will reduce emissions overall in Greater Manchester. Each case needs to be treated on its merits.

Action AP20 – Promote cycling and walking.
Further details: Introduction of the Cycle user Group, Walking Forum, In town without my car day, production of the GM Cycle Cities guide, and GM 'On Yer Bike Magazine.'
Non – Air Quality impacts: Reduced Congestion and improved health.
Cost: Low cost related to local publicity of cycling and walking routes etc.
Air Quality Improvement: Taking Journeys away from the private car
Summary: Ongoing awareness campaign of healthy transport options

Action AP21 – Promote the development and implementation of Travel Plans among the companies and organisations in the area. Travel Plans will be aimed at reducing emissions from work activities as well as journeys to and from the workplace.
Further details: A Travel Plan is a package of practical measures to reduce reliance on the car for journeys to work or during work. All Greater Manchester local authorities are developing their own Travel Plans and employ Travel Co-ordinators who help and encourage businesses and other organisations to introduce them.
Non – Air Quality impacts: Travel Plans can reduce on and off-site congestion and parking problems. Travel Plans can improve the environmental image of businesses and other organisations.
Cost: The cost of implementing a Travel Plan can vary significantly and is dependent on the measures included in the Plan. The local authority Travel Co-ordinators, whose role it is to help and encourage other organisations to implement Travel Plans, are being funded by the Government (until March 2004).
Air Quality Improvement: Will help to improve local air quality, particularly during peak periods, and contribute to overall emission reductions throughout Greater Manchester by encouraging cleaner,

greener travel and less reliance on individual car use, helping to ease congestion and cut pollution.
Summary: An increase in the take-up of Travel Plans will help bring about a change in travel behaviour, including an increase in the use of more sustainable travel modes and more sustainable travel practices.

Action AP22 – Promote the development of School Travel Plans.
Further details: A School Travel Plan is similar to a workplace Travel Plan and is a document setting out a package of measures for reducing the number of car trips made to a school, or group of schools, by parents and staff, and for improving safety on the school journey. The local authority Travel Co-ordinators also work with schools to help and encourage them to develop School Travel Plans.
Non – Air Quality impacts: School Travel Plans can: Reduce on and off-site congestion and parking problems. Improve relations between school and local community, and increase social cohesion between pupils travelling together. Encourage healthier and fitter children. Improve environment and road safety around schools for everyone. Equip children with better road awareness
Cost: The cost of implementing a School Travel Plan can vary significantly and is dependent on the measures included in the Plan. The local authority Travel Co-ordinators, whose role it is to help and encourage schools to implement School Travel Plans, are being funded by the Government (until March 2004).
Air Quality Improvement: Will improve local air quality on roads around schools, particularly during peak periods, and contribute to overall emission reductions throughout Greater Manchester as a result of a reduction in car use.
Summary: An increase in the take-up of School Travel Plans will reduce the number of cars used on the school run and increase the use of sustainable alternatives, helping to ease congestion and cut pollution, particularly during peak hours.

Action AP23 – Investigate the potential to create more pedestrianised areas within Greater Manchester.
Further details: Ongoing District Centre studies
Non – Air Quality impacts: Improved street scene and local environment within pedestrianised areas.
Cost: Specific costings for schemes will be developed by relevant local authorities.
Air Quality Improvement: Improvements in local air quality within pedestrianised areas.

Summary: District Centre studies taking place with the aim, amongst others, to create more pedestrian only zones and areas within the Borough.

Action AP24 – Local Authorities will work with the Highways Agency and their consultants to assist in the development of the M60 Route Management Strategy and other schemes to ensure that air quality improvement is a key objective.
Further details: The Highways Agency is currently preparing a Route Management Strategy for the M60. The motorway network is a significant source of emissions and therefore it is essential that the strategy included schemes to improve air quality.
Non – Air Quality impacts: The Route Management Strategy
Cost The cost to local authorities will be officer time. The cost of any identified schemes will need to be included in the development of the Route Management Strategy.
Air Quality Improvement The air quality improvement will be identified during the development of the Strategy.
Summary The development of the Route Management Strategy M60 provides an opportunity for local authorities to agree schemes with the Highways Agency which will improve air quality.

Action AP25 – Encourage the Highways Agency to identify schemes on motorways and trunk roads where speed control could improve air quality.
Further details: The motorway network is a significant contributor to poor air quality in Greater Manchester. One way to reduce emissions from vehicles on the Highways Agency network could be to reduce the speed limit on motorways in the area. Research has shown that for most vehicles the lowest emissions of nitrogen oxides, the main pollutant of concern, occur when the vehicle is travelling at around 50mph. Authorities in the area are therefore encouraging the Highways Agency to carry out a study to identify schemes where speed control could improve air quality. The studies should also take into account the cost and non-air quality impacts of any scheme. Where schemes are found to be feasible, the local authorities would expect the Highways Agency to produce a plan outlining how and when they will be implemented. The Greater Manchester authorities are currently carrying out their own study assessing the air quality impact of a speed reduction (from 70mph - 50mph) which has already been implemented along a stretch of dual carriageway in a built-up part of the area. The study also assesses the impact of another scheme where the speed limit was reduced from 40 mph to 30 mph. It is felt that there are few roads where the Local Authority is the Highway Authority where speed reductions would contribute to air quality improvements. This will be considered further once the study is complete.
Non-Air Quality impacts: Reducing vehicle speeds may increase journey times at off-peak times but is expected

to smooth traffic flows and reduce congestion during busy periods. There may also be a reduction in traffic noise and improved safety. Reductions in speed limits may be unpopular with some motorists and could lead to traffic being displaced onto other roads in the area.
Cost: The cost to implement a scheme may be relatively low as the signage for the scheme could be provided by the existing infrastructure. Costs would increase if significant engineering works were required.
Air Quality improvement: In other parts of the country an improvement in air quality has been demonstrated where speed reductions have been introduced on the motorway network.
Summary: Reduced speed limits on motorways could be an effective way of reducing emissions from the Highways Agency network.

Action AP26 – Continue to identify and secure funding to implement public transport priority schemes and will assess their effect on air quality.
Further details: The Local Transport Plan is the major mechanism to secure funding for public transport schemes. GMPTA intends to require an internal Environmental Audit of all capital schemes as they are prepared.
Non – Air Quality impacts: Public Transport schemes are intended to further Sustainable Development objectives in Greater Manchester and improve the quality of life for residents and visitors.
Cost: Large scale
Air Quality Improvement: Public transport schemes will normally lead to reductions in emissions per passenger mile. However increased travel induced by some schemes may erode air quality benefits.
Summary: Scope for significant improvements in air quality.

Action AP27 – Use traffic control systems to reduce congestion and minimise pollution.
Further details: The Greater Manchester UTC system controls a high proportion of the County's 1,800 traffic signals and pedestrian crossing facilities, and is currently undergoing a £5.5M replacement. The system gives the ability to co-ordinate signal timings so as to smooth out the pattern of traffic flows, optimising road capacity and reducing the amount of stop-start traffic.
Non – Air Quality impacts:

The capacity of junctions can be maximised, and this should reduce the variability of journey times, whilst in some cases there will be actual savings. There will be opportunities for safer pedestrian movement where such facilities are incorporated.
Cost: Relatively low, using the equipment being upgraded, as the task is mainly a programming one.
Air Quality Improvement: Devices to reduce vehicle exhaust emissions work best at constant vehicle speeds, with engines fully warmed up. Start-stop traffic conditions, especially when engines are cold, lead to the worst pollution emissions, and therefore co-ordination of signals which smooths traffic flow can improve local air quality
Summary: This action should help to reduce the categories of pollution caused by all vehicles, but it should be recognised that standing and stop-start traffic will occur extensively at other locations which are not under signal control.

Action AP28 – Investigate potential schemes to create 'Home Zones' and implement where appropriate.
Further details: Private consultants working with SMBC to investigate potential sites for new 'Home Zones.'
Non – Air Quality impacts: Traffic Calming and Safety impacts
Cost: £50,000 of LTP money available
Air Quality Improvement: Lower car speeds and less car journeys in specific areas should cut vehicle emissions levels
Summary: "Home Zones" should reduce the amount of vehicle trips within specific designated areas.

Action AP29 – Assess the air quality impact of all proposed bypasses and new roads.
Further details: The air quality impact of new roads and bypasses can be assessed using computer-modelling techniques. Information from developers, the Highways Agency and the Greater Manchester Transportation Unit can be used to estimate the pollutant concentrations generated by traffic using the new road.

Non – Air Quality impacts: **N/A**
Cost: The cost to model the air quality impacts of new bypasses and roads will vary depending upon the scheme, but are small compared to the overall costs of the development. Local Authorities will have considered the costs of each new scheme within their local annexes.
Air Quality Improvement: May result in improved traffic flows and reduced congestion, leading to air quality improvements in priority areas.
Summary: Modelling the impacts of new roads and bypasses will help to determine future air quality in the vicinity.

Action AP30 – Explore the contribution that road user and workplace parking charging might make to the improvement of air quality. Any consideration of any such charging schemes will take place in accordance with the following conditions: • **Full consultation with residents, businesses and other stakeholders will be carried out.** • **New high quality alternative such as Metrolink and Quality Bus Corridors must be significantly advanced before charges can be introduced.** • **A regional approach to charging must be taken to ensure that it does not harm overall competitiveness and areas introducing charges are not disadvantaged.**
Further details: Road user charging involves a payment to cross entry/exit points ("cordons") to/from congested areas. Workplace parking charging is where employees would be required to pay a fee to park in off-street private car parks, just as they would in public ones. The aim would be to reduce traffic levels in those areas, and hence levels of vehicle-based pollution.
Non – Air Quality impacts: Congestion would be considerably reduced (at least 20% is projected in the case of the proposed London scheme). Public transport would operate more reliably, and would potentially gain considerable extra numbers transferring from the car. There could be adverse impacts on businesses within the charging zone, especially near the cordon, as a result of drivers going elsewhere to avoid paying the charge.
Cost: The cost of setting up and operating such schemes would be considerable, but should be outweighed by the revenue received, which could then be ploughed back into transport improvements to cater for the modal diversion achieved.
Air Quality Improvement: This could be very significant, depending on the amount of traffic reduction achieved,

which in turn will reflect the level of charge.
Summary: This is potentially the action with the largest impact on vehicle-related pollution, but only if it covered the inner parts of Greater Manchester and the motorway network. However, in view of the pre-conditions about improved public transport, this reduction is unlikely to be achieved during the Action Plan period

Action AP31: Local Authorities to develop UDP policies appropriate for their area to ensure that air quality is a consideration in determining planning applications. Some authorities already have policies in place – see local annexes
Further details Unitary development plans set out the local authorities policies and long term strategy in relation to new development. Air quality considerations are an element of determining whether a new development is appropriate for a particular location.
Non – Air Quality impacts The UDP should balance air quality considerations with other development control factors.
Cost The cost to the local authority would be officer time to develop the policies and ensure that they are implemented. Developers would need to ensure that any proposals for new development complied with the policies.
Air Quality Improvement The policies would seek to ensure that new development does not contribute significantly to elevated pollution concentrations and that sensitive development is appropriately located.
Summary The UDP should contain policies to ensure that new development takes account of air quality and is appropriately located.

Action AP32 – Develop Greater Manchester wide guidance for developers submitting planning applications, on air quality information to be provided on submission.
Further details: The planning system should take into account air quality issues. This includes the location development which may increase air pollution and development which may be significantly affected by existing pollution levels. Planning Policy Guidance Note 23 (PPG 23) provides some guidance on planning and air quality issues. The Greater Manchester authorities intend to develop guidance for developers which will set out the types of development for which a detailed air quality assessment would be required. It will also set out the information the assessment should contain and the methodology developers should follow. Decisions about planning application will take account of the air quality assessment, but will also involve other material planning considerations.
Non-Air Quality impacts: The guidance will improve consistency across the Greater Manchester authorities

regarding the types of development for which an air quality assessment is required and the appropriate methodology to follow. This will make the planning process more transparent.

The guidance will also raise awareness of air quality and sustainable development principles.

Cost:
Undertaking the assessment may increase costs to the developer although it is likely that these would be small compared to the total cost of the development.

Air Quality Improvement:
Undertaking the assessment in itself would not improve air quality. However, should the assessment reveal that the air quality impact of the development was significant mitigating measures could be designed into the scheme in order to ameliorate the problem.

Summary:
The guidance will assist local authorities and developers in determining the impact of air quality from new development and enable full consideration of air quality issues prior to planning decisions being made.

Action AP33 – Develop a list of mitigating measure which could be included in the building design, as planning conditions, or Section 106 agreements

Further details:
Mitigating measures may be appropriate where an air quality assessment identifies that:-

- There will be a significant increase in air pollution in the area from a new development; or
- Current or predicted high air pollution levels will affect sensitive new development (e.g. housing, hospitals, schools etc.)

Mitigating measures could be introduced by incorporating features designed to reduce the impact of air quality in the building design, imposing planning conditions or Section 106 agreements.

The Greater Manchester authorities intend to develop guidance on those measures which could be introduced through the planning process to reduce the impact of air quality from the development.

Non-Air Quality impacts:
The introduction of mitigating measures may enable development to take place in circumstances which may otherwise result in refusal of planning consent. Encouraging good design may also enable developers to consider under sustainable development principles. The measures may also lead to other improvements to the natural and built environment, such as reduced noise and visual impact. The guidance would allow more consistent consideration of possible mitigating measures across Greater Manchester.

Cost:
The cost of preparing the guidance would be low. The cost of implementing the measures could be minimised by incorporating air quality considerations into the design at an early stage, but there may still be an increase in overall costs to the

developer.
Air Quality Improvement: The introduction of mitigating measures may not necessarily improve air quality, but would enable development and urban regeneration to take place without leading to a significant worsening of air pollution levels or impact on health.
Summary: The development of a list of mitigating measures to be used in determining planning applications would improve consistency across Greater Manchester and protect the area's economic viability and urban regeneration.

Action AP34 – Enforce the Pollution Prevention and Control (England and Wales) Regulations 2000.
Further details: The Pollution Prevention and Control Regulations regulate emissions from certain industrial processes. The Environment Agency are responsible for the larger companies, with Local Authorities authorising emissions from the small to medium sized processes. Emissions from these industries can increase ground level pollution concentrations in the surrounding areas.
Non – Air Quality impacts: The regulations also control the release of pollution to land and air from the medium to large sized processes. Authorisation can also lead to possible changes in visual impact of emissions from stacks and a reduction in the number of odour and noise complaints; although fitting abatement technology can be expensive for the company.
Cost: Industrial processes that require authorisation pay annual subsistence fees to either the Environment Agency or the Local Authority to pay for the cost of regulation.
Air Quality Improvement: The Environment Agency have stated that any agency regulated process making a significant contribution to pollution in an AQMA will, where possible, have its operating conditions altered to reduce emissions.
Summary: Although industrial sources are a much less significant source of pollution than road transport, the regulation of new and existing processes will ensure that the contribution to ambient pollution concentrations from industrial sources is limited.

Action AP35 – Continue to enforce Smoke Control Areas.
Further details: Following the smogs of the early 1950s, the Government introduced the Clean Air Act in 1956. Local Authorities were given the power to declare smokeless zones. Smoke control areas preventing domestic properties from burning solid fuels now cover the majority of Greater Manchester, unless the fuel or the fire place has been approved.
Non – Air Quality impacts: Smoke control areas can lead to the improvement of the overall urban and built

environment. There is a reduction in the amount of CO_2 and acid rain precursors released into the air. They also encourage the adoption of more efficient heating and combustion processes.
Cost: The majority of the smoke control areas across the county have been in place for some time now and the cost of policing these areas will be contained within the day-to-day running costs of each authority's Environmental Health Service.
Air Quality Improvement: Continuing to enforce smoke control will ensure emissions from coal burning domestic properties are kept as low as possible.
Summary: Following the introduction of the Clean Air Act, the quality of urban air has improved considerably. Continuing enforcement of these zones will ensure particulate emissions from domestic properties are kept as low as possible.

Action AP36 – Promote improved energy efficiency in domestic properties.
Further details: Reduced energy consumption in domestic properties can benefit local air quality by decreasing fuel burning which reduces the amount of pollution emitted.
Non – Air Quality impacts: Financial savings, reduces fuel poverty, helps tackle climate change, assists local authority to meet Home Energy Conservation Act targets.
Cost: This will depend on the scale of promotion varying from inexpensive simple awareness raising to the more significant expense of funding or part funding the installation of energy efficiency measures.
Air Quality Improvement: Reduced energy consumption will result in the reduction of gas, oil and solid fuel burning within properties which will reduce N0x and PM_{10} emissions into local air. Reduced electricity consumption can help to reduce pollution emissions form power stations which although possibly remote from individual local authorities can disperse pollution over a wide area (emissions from Fiddlers Ferry Power Station have been found to impact on the whole of the Greater Manchester area).
Summary: Improving the energy efficiency of residential properties will help to improve local air quality, meet Home Energy Conservation Act targets and address climate change. In accordance with the Home Energy Conservation Act the local authorities of Greater Manchester have a commitment to plan and implement measures and actions to improve domestic energy efficiency. The added benefit of improving local air quality provides further justification for local authority's actions in this area.

Action AP37– Promote energy efficient and sustainable measures to developers
Further details:

Reduced energy consumption in industrial and commercial premises can benefit local air quality by decreasing fuel burning which reduces the amount of pollution emitted.
Non – Air Quality impacts: Financial savings, helps tackle climate change.
Cost: Incorporating energy efficient measures in new development will reduce costs, compared to introducing measures at a later date. Such measures can also reduce energy bills and save money for the occupiers of the building,
Air Quality Improvement: Reduced energy consumption will result in the reduction of gas, oil and solid fuel burning within premises which will reduce N0x and PM10 emissions into local air. Reduced electricity consumption can help to reduce pollution emissions form power stations, which although possibly remote from individual local authorities can disperse pollution over a wide area. (emissions from Fiddlers Ferry Power Station have been found to impact on the whole of the Greater Manchester area).
Summary: New developments can be designed to incorporate energy efficient measures. Any reductions in energy consumption will also reduce CO_2 emissions and therefore help to combat climate change.

Action AP38– Encourage the conversion of large boilers (>2MWth) operating in hospitals, university and commercial buildings from coal or fuel oil to gas.
Further details: Conversion to gas for large boilers industrial and commercial premises can benefit local air quality by reducing the amount of pollution emitted compared to other fuel sources.
Non – Air Quality impacts: Will also reduce the emissions of pollutants linked to climate change.
Cost: This will depend on the scale of promotion. Large boiler operators would be expected to fund the cost of conversion.
Air Quality Improvement: Large boiler emissions contributed 204 tonnes of PM_{10} in 2001 across Greater Manchester, 24% of all point source emissions. Gas fired boilers release around 570x less CO_2 and almost 1500x less NO_x (per therm) than fuel oil fired plant.
Summary: Conversion to gas sources will reduce emissions from large boilers, thus reducing background pollution concentrations.

Action AP39– Promote energy efficiency in industrial and commercial premises, including the Council's own non-domestic buildings.
Further details: Reduced energy consumption in industrial and commercial premises can benefit local air quality by decreasing fuel burning which reduces the amount of pollution emitted.
Non – Air Quality impacts: Financial savings, helps tackle climate change.
Cost: This will depend on the scale of promotion varying from inexpensive simple

awareness raising to the heavier expense of funding or part funding the installation of energy efficiency measures.
Air Quality Improvement: Reduced energy consumption will result in the reduction of gas, oil and solid fuel burning within premises which will reduce N0x and PM10 emissions into local air. Reduced electricity consumption can help to reduce pollution emissions form power stations, which although possibly remote from individual local authorities can disperse pollution over a wide area. (Emissions from Fiddlers Ferry Power Station have been found to impact on the whole of the Greater Manchester area).
Summary: Improving the energy efficiency of industrial and commercial premises will improve local air quality particularly in areas where there is a density of commercial operations or where large combustion processes are used to produce power. The Groundwork organisation already promotes improved energy efficiency in the commercial sector throughout Greater Manchester and therefore any work in this area can build on their existing achievements and contact networks. A further attraction is that the level of expense involved in promotional activity can be varied according to the finance available. Any reductions in industrial and commercial energy consumption will also reduce CO_2 emissions and therefore help to combat climate change.

Action AP40– Develop certain elements of EMIGMA as part of the ongoing programme of upgrading, to provide robust baseline information on elements such as residential and commercial energy use; bus fleet, vehicle types, distances travelled and industrial sector boiler emissions.
Further details: The EMIGMA database contains emissions data on all significant sources in Greater Manchester and Warrington. It is updated annually and is used to provide data for air pollution dispersion modelling; it can also be used to identify trends.
Non – Air Quality impacts: None
Cost: The Greater Manchester authorities have a service level agreement with ARIC and GMTU to update EMIGMA. Local authorities also provide staff time to collect relevant data.
Air Quality Improvement: Improving the database would not improve air quality directly, however it will generate more robust baseline data to enable scenario testing and to allow better targeting of air quality improvements within AQMAs.
Summary: Improvements to the database will improve knowledge of emissions sources in Greater Manchester and will be used to target actions to those areas which will have the greatest impact on air quality improvement.

Action AP41 – Publish more local air quality monitoring data.
Further details: The ten Greater Manchester Authorities currently monitor air quality at a large number of sites across the conurbation. Local Authorities who are on the Governments Automatic Urban and Rural Network (AURN) have their real time

monitoring data published for them on the internet and on teletext. Other authorities collate the information from their own area and publish it locally. MAPAC display this data on the MAPAC website (www.greatairmanchester.org.uk). The information includes daily updates from the real time sites across the region that are not on the AURN. Each Authority will also be investigating how to improve how they disseminate their own monitoring data locally.
Non – Air Quality impacts: Publication of air quality information on a regular basis will help people in susceptible groups (e.g. people with breathing disorders such as asthma) make informed decisions about their travel plans for the day.
Cost: Monies from the Local Transport Plan have funded the air quality update of the MAPAC web site. The cost of setting up the real-time data pages and annual maintenance was £12,000 initially with a yearly maintenance fee of £3,500. Local Authorities will have considered the costs publishing local data within their annexes.
Air Quality Improvement: There is no direct air quality improvement associated with publicising air quality data other than to help raise public awareness.
Summary: Giving members of the public access to more air quality information will help to raise public awareness and to reinforce the links between personal travel habits and the effects upon air quality.

Action AP42 – Continue to raise awareness of air quality issues with local authorities, AGMA and GMPTE/A.
Further details: It is essential that action to improve air quality is incorporated into other Plans and Strategies, this can be achieved through raising awareness of the issues with politicians and other Council departments.
Non – Air Quality impacts: N/A
Cost: Covered within existing local authority funding as part of an integrated approach to service delivery.
Air Quality Improvement: Air quality improvement can be achieved by ensuring that it is a consideration in developing relevant Plans and Strategies.
Summary:

N/A

Action AP43 – Improve links with health professionals.
Further details: The air quality steering group has consulted with the Greater Manchester Health Protection Unit to obtain input from Health professionals to the Action Plan. Further work to build on these contacts should strengthen the links between air quality and health.
Non – Air Quality impacts: This will focus on the links between air pollution and ill health/ health inequalities.
Cost: Officer time in developing the links
Air Quality Improvement: N/A
Summary: Improved links with health professionals will strengthen the relationship between air pollution and health.

Action AP44 - Raise awareness of the pollution and health effects of burning garden and other waste.
Further details: Garden bonfires and waste burning by businesses can cause a significant nuisance to people in the surrounding area and increase air pollution for short periods. The Greater Manchester authorities already take formal action against businesses and individuals that are causing a statutory nuisance through burning waste. The Greater Manchester authorities intend to raise awareness of the pollution and health effects of bonfires and to provide advice on alternatives to burning. A leaflet will be produced and press releases circulated to try to increase awareness of the issue.
Non-Air Quality impacts: This could lead to fewer complaints about smoke nuisance and promote social harmony.
Cost: The cost to produce a leaflet and promote awareness of the effects of bonfires would be low (less than £10,000).
Air Quality Improvement: It is expected that the awareness raising campaign will result in a reduction in the number of bonfires. This should result in a reduction in nuisance complaints and an improvement in local air quality, although this may not have a significant impact on annual average pollution concentrations.
Summary: Raising awareness of the pollution and health effects of bonfires should result in fewer fires and a reduction in complaints.

Action AP45 –Support promotional campaigns such as 'Don't Choke Britain'

and 'European Car Free Day'.
Further details: Supporting promotional campaigns such as Don't Choke Britain and Car Free Day can help to raise public awareness of the need to tackle the problems of congestion and air pollution resulting from the over-use of motorised transport. This in turn may lead to a change in travel behaviour. The Greater Manchester authorities and GMPTA\E will continue to support these events at a local level and will work together to support them where appropriate.
Non – Air Quality impacts: Raises awareness of environmental and transport issues. May not bring about a sustainable change in travel behaviour.
Cost: Low, and can be combined with other events, but can require a lot of staff time to organise.
Air Quality Improvement: Can be used as a precursor and trial for pedestrianisation schemes. Increased awareness may result in air quality improvements, but only if there are changes in travel behaviour.
Summary: Promotional campaigns which raise awareness of the need to tackle congestion and pollution by changing travel behaviour will be supported where appropriate.

Action AP46 – Promote actions to improve air quality using a variety of promotional methods including:- leaflets, displays, seminars, press releases, emission testing and supporting national and local campaigns.
Further details: Consultation with members of the public identified that many people would like more information about air quality in Greater Manchester. A number of initiatives are already planned including:- • Making air quality monitoring information available on the Internet (Action AP33). • Raising awareness of the pollution and health effects of bonfires (Action AP36) • A cleaner vehicle emissions campaign (Action AP) Other opportunities to raise awareness will arise during the next 12-18 months and these activities will be reported in the action plan progress report.
Non-Air Quality impacts: Promotional activity will highlight the commitment of the Greater Manchester authorities and their partners to improving air quality.
Cost: The cost of promotional activities is expected to be low, but will depend on the methods used.
Air quality improvement: Air quality improvement would occur if the promotional activities resulted in changes in behaviour.
Summary: Promotional activity will raise awareness of air quality issues and may result in changes in behaviour which will improve air quality.

Actions not currently incorporated into the Action Plan

Consultation with members of the public, businesses and other organisations resulted in a large number of suggestions for schemes that could be included in the Air Quality Action Plan. Most of these ideas have been incorporated into the plan, however a small number have not. The table below lists those actions that are not currently in the Action Plan and summarises the reasons why they have not been included.

Suggested Action	**Reason why the action is not currently included in the Plan**
Industrial emissions • Changes to process technology • Reduced productivity and output • Reduction in related industrial activity emissions beyond that currently required by the regulatory regime • Relocation of process	The source apportionment work, summarised in Chapter 2, did not identify any industrial processes in Greater Manchester which were significantly contributing to exceedances of the air quality objectives. The suggested measures would not therefore be a cost-effective means of reducing air pollution levels.
Transport • Car Scrappage schemes • Banning cars on high pollution days	• Funding has not been identified for a car scrappage scheme. • This would only have a short-term impact on air pollution levels and would be very costly to implement.
Development control • Develop Greater Manchester agency for assessing air quality implications of planning applications • Require Health Impact Assessment for new developments and Environmental Management Audits to be completed prior to planning consent • Out or edge of town supermarket development	• Decisions on planning applications are a matter for individual Local Authorities. • The proposed air quality assessment guidance for developers will ensure that air quality is considered for new planning applications • This would be contrary to Planning Policy, which encourages development in town centres
Others • Bonfire bans	• New legislation would be required for an outright ban on bonfires. The Greater Manchester authorities will however continue to enforce the current legislation to address dark smoke and nuisance from fires.