

The Air About Us

**AIR QUALITY
MANAGEMENT
AREA
PROGRESS
REPORT
APRIL 2007**



Warrington
Borough Council



**Housing, Protection and Community
Community Services Department**

AIR QUALITY MANAGEMENT AREA PROGRESS REPORT

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EXECUTIVE SUMMARY

The primary purpose of the Air Quality Management Plan is to address ambient air quality levels within the motorway related Air Quality Management Area (AQMA). Whilst no direct intervention measures have been secured, due to the low priority assigned to the area by the Highways Agency, computer models predict that the air quality levels within the AQMA will comply with all the current air quality objectives by 2010. The model assumes that improvements in vehicle technology and the steady replacement of older vehicles will produce the required improvement in air quality. Monitoring to date, however, indicates that these improvements are no longer being observed. It is therefore important that we continue to monitor the situation and to work with the Highways Agency.

The plan also seeks to ensure that air quality across the town is managed and a number of discretionary actions are included to ensure that the rapid development of the town remains sustainable. Good progress is being made to respond to the challenges presented by development growth and complementary action is being taken alongside the Local Transport Plan and Unitary Development Plan. Research indicates that the vast majority of the town will comply with the air quality objectives and action is being taken to address the higher air quality levels observed in a small area close to the town centre.

The Council will continue to work closely with the community and its partners to respond positively to future issues and it is envisaged that the imminent introduction of a Climate Change Strategy for the town will have associated benefits in terms of local air quality.



Air Quality Management Plan Progress Report May 2006-April 2007.

Introduction.

1.01 The primary purpose of the plan is to address ambient air quality levels associated with the motorway network, following the designation of the air quality management area in November 2003. A key step was to accurately quantify ambient air quality levels adjacent to the motorway, which has now been completed. Action planning beyond local highway improvements has been highly dependent on the ability of the Highways Agency to deliver local improvements within their national programme.

1.02 Warrington is a vibrant town, which is experiencing rapid growth and regeneration. The Council takes its environment seriously and a decision was, therefore, made to include measures within the plan to look at the overall sustainability of the town's air quality.

1.03 The specific aims and objectives of the action plan are listed in tables 1 and 2. The objectives reflect the need to deliver a sustainable and healthy environment through complementary action on local transport and planning: The plan, therefore, draws heavily on actions contained within the Local Transport Plan (ref 1) and the Unitary Development Plan (ref 2).

1.04 Whilst the vast majority of the town complies with the objectives it is evident that concerted action is required to manage development growth and to tackle traffic congestion, particularly as the year on year improvements in air quality are no longer being observed at a national and local level (ref 3).

Table 1 The Aims of the Air Quality Management Plan.

The Aims of the Air Quality Management Plan	
	<ul style="list-style-type: none"> To support the achievement of the National Air Quality Objectives through appropriate local measures linked to outcome based targets.
	<ul style="list-style-type: none"> To maintain and where practical improve local air quality, to protect local health and to support policies designed to aid social inclusion.
	<ul style="list-style-type: none"> To ensure greater integration and joint working with key stakeholders on air quality in order to achieve common goals and objectives.
	<ul style="list-style-type: none"> To deliver and support cost effective actions that are proportional to the risk of exceeding the prescribed air quality objectives.
	<ul style="list-style-type: none"> To raise awareness on air quality and it's role in sustainable action planning.

Table 2 The Objectives of the Air Quality Management Plan.

1	To manage the impact of the motorway network on local air quality.
2	To reduce traffic growth through the promotion of alternative transport modes.
3	To improve people's quality through the introduction of schemes that control vehicle access, speed and flow.
4	To manage the impact of emissions associated with road freight movements.
5	To support commuters in reducing the number of car based commuter journeys.
6	To assess air quality levels against national objectives and to evaluate the performance of the plan.
7	To raise awareness on the environment and to improve access to information.
8	To regulate emission sources and to secure reductions where appropriate.
9	To aid the development and regeneration of the town through the creation of a sustainable environment.
10	To reduce emissions associated with Council activities.

Monitoring the Plan.

Box 1

The primary aim of the plan is to take action with regard to the motorway network. Performance indicators with key dates are, therefore, specified within objective 1. Objectives 2 to 10 relate to the provision and maintenance of a sustainable environment. They do not relate to a specific AQMA. More generic performance indicators are stated within these objectives.

2.01 The targets and indicators contained within the Agenda 21 Strategy, Local Transport Plan and Unitary Development Plan provide a readily available mechanism for monitoring performance. These are summarised at the bottom of each objective within the main plan. **Progress against these indicators will be mainly monitored through these strategies. It is not the intention of this report to duplicate these monitoring arrangements, as objectives 2-10 are discretionary ones that are not related to any AQMA. The information provided in the report is instead intended to provide a summary of action taken and to give an indication of current trends.**

2.02 Whilst, progress on the action plan can be monitored against the performance indicators, it is important to assess actual compliance with the air quality objectives. This is achieved using targeted air quality monitoring programmes and computer models. The overall performance of the plan can be assessed in this way.

2.03 The reporting process is divided into three main categories. The first section focuses on the motorway related AQMA. A general overview of the objectives relating to the management of air quality is provided, whilst a brief section on the AQMA designated in 2006 is provided, although progress on improving air quality within this AQMA will be reported separately.

Progress to date on the motorway AQMA (objective 1).

To monitor emissions and to review the requirement for an AQMA.

3.01 The plan was launched in August 2003. The initial phase of the plan was to quantify air quality levels in close proximity to the motorway network to determine both the degree of exceedance and its geographical extent. This stage has now been completed with the main research been undertaken as part of the Update and Screening Assessment (ref 4).

3.02 The Council has established regular liaison meetings with representatives of the Highways Agency to discuss action planning. The Council, however, has been unable to secure any specific remedial measures within the AQMA. This is because the Highways Agency considers the AQMA in Warrington to be a low priority within the national programme. This is due to the following reasons: -

- Modelling results demonstrate possible compliance with the objective by 2010.
- Levels of nitrogen dioxide recorded in Warrington are lower than in other areas in the national network.
- There are a limited number of properties within the AQMA in relation to other national AQMA's.

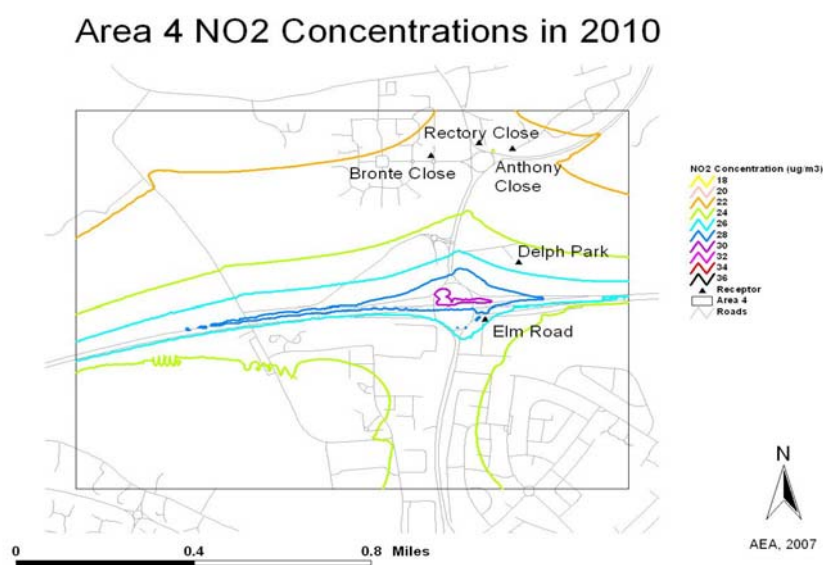
3.03 The AQMA was designated for an area within 50m of the motorway carriageway. The number of relevant receptor locations within the AQMA is therefore limited to some 40 properties. It is possible to manage development growth in these areas through planning controls and the AQMA has been designated as a planning constraint area, such that any proposed development in these areas is 'flagged' for more detailed consideration.

3.04 Research, as stated, has therefore largely concentrated on finding out more about air quality levels within the areas and in testing the predicted compliance by 2010. These issues have therefore been considered in detail within this progress report.

Potential compliance by 2010 and the extent of exceedance.

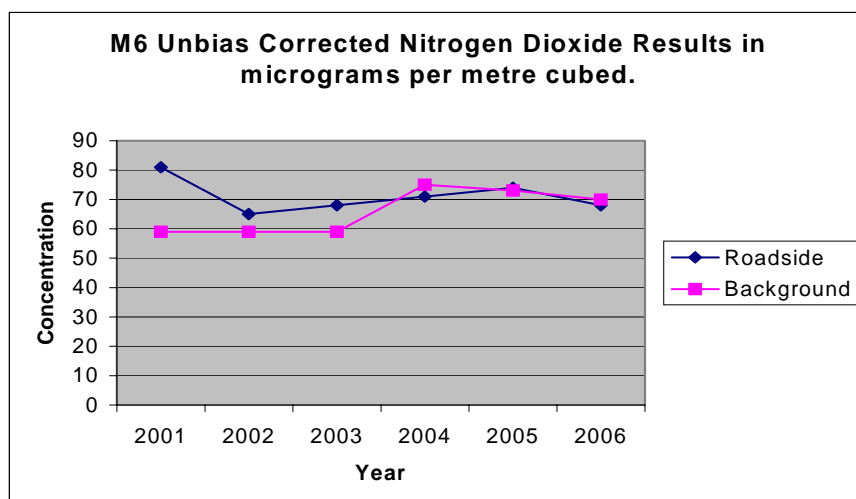
3.05 The outputs from dispersion models depend on a number of key input parameters, including vehicle emission factors. These assume a relative reduction in emissions per vehicle sector over time as vehicle technology improves and the overall composition of the vehicles shifts in favour of those benefiting from the latest technology. A resultant improvement in air quality is predicted. The results of the latest dispersion assessment, undertaken in 2007 (ref 5), support the assumption that all the areas that are close to motorways will comply with the annual objective by 2010. An example of a typical modelled contour is provided in figure 1.

Figure 1 An example of a typical modelled contour plot.



3.06 The ambient monitoring undertaken by the council has not, however, confirmed the predicted reduction in motorway related nitrogen dioxide concentrations. Whilst, the dataset is limited to two nitrogen dioxide diffusion tube locations at one site, it is possible to speculate that compliance with the objective will not be achieved at relevant receptor locations by 2010. Monitoring will continue in order to evaluate this situation, however, the current trend can be seen in figure 2.

Figure 2 unbiased corrected monitoring results for the M6 in Warrington.



3.07 The Council has a comprehensive set of monitoring data for the motorway network, which it has developed since the designation of the AQMA in 2001. This has consistently shown that air quality levels fluctuate significantly depending upon the location of the monitoring position. The results have shown that some areas may comply with the objective, whilst significant exceedances at some distance from the carriageway have been predicted in other areas.

3.08 The Council is presently participating in a Highways Agency led monitoring programme, which includes a number of diffusion tube locations in the Warrington area (using Grabco tubes as opposed to Casella tubes used by the Council). The latest results are reported in figure 3. These results, coupled with the Council's own dataset, help to provide further evidence on whether compliance with the annual nitrogen dioxide objective is possible without recourse to more direct intervention.

3.09 The provisional 'raw' results appear to indicate that the M6 at Lymm will exceed the relevant annual objective at both the roadside and background locations, with mean concentrations of $62 \mu\text{gm}^3$ (approximately 7m from the carriageway) and $44 \mu\text{gm}^3$ (approximately 47m from the carriageway) being recorded. The respective levels on a different section of the M6 to the north are significantly lower with only the roadside location showing a potential exceedance of $49 \mu\text{gm}^3$ at the roadside location (approximately 25m from the carriageway), whilst the background concentration at 40m is $36 \mu\text{gm}^3$). The results for the M56 indicate compliance at both the roadside and background locations with respective values of 36 and $32 \mu\text{gm}^3$, whilst the M62 site indicates a potential marginal exceedance at roadside only (roadside levels of $40 \mu\text{gm}^3$ at 23m compared to a background of $30 \mu\text{gm}^3$ at 34m from the carriageway).

3.10 The dataset, along with that held by the Council, appears to indicate that ambient air quality levels adjacent to the motorway are dependent on a number of factors. Air quality levels, as would be expected, appear to have a relationship with vehicle flows and conditions with the M6, which carries the most traffic, exhibiting the highest concentrations.

3.11 It is also possible to reasonable speculate that road conditions, such as the presence of inclines, or specific factors to do with the monitoring position, such as the presence of embankments may be significant. Research by the Council (ref 4) has also demonstrated the importance of meteorological conditions such as wind direction and whether calm conditions are present.

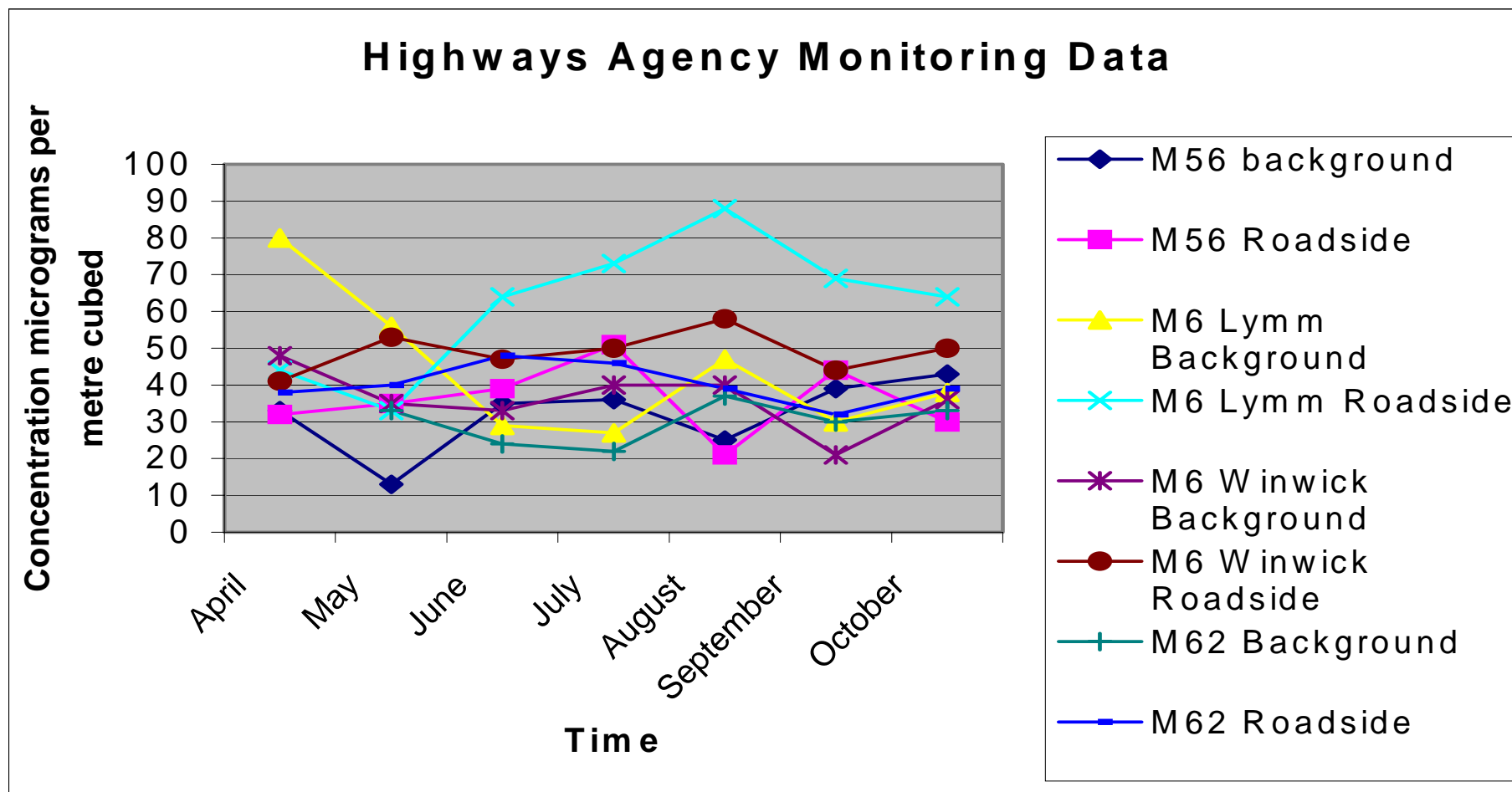
3.12 An interesting feature of the data to date is that levels seem to fluctuate significantly depending on whether the monitoring position is in an urban or semi-rural location; with the highest levels have being recorded in the more rural and open areas. This tendency is apparently evident within the Highways Agency dataset for the M6, with the lower levels being recorded in the more urban area.

3.13 It is possible that this may be simply due to fact that wind speed and direction are more likely be significant in rural areas due to the more open areas. It is, however, possible that it may also be due to the greater availability of ozone in the more rural areas, which allows for the chemical conversion of excess nitrogen oxide generated by the motorway emissions.

3.14 It is therefore possible to conclude, on the basis of results the monitored and modelled data to date, that compliance with the annual mean objective of $40 \mu\text{gm}^3$ is possible by 2010, particularly along the M56 and sections of the M62 and M6. However, monitoring results on the M6 have not indicated any significant reduction in annual nitrogen dioxide levels and compliance seems to be highly dependent on the receptor location.

3.15 The Council will, therefore, continue to monitor the situation and to pursue specific actions to improve air quality where possible. It is not proposed to revoke the existing order or amend its boundaries at this stage, although a case could be made for the revocation of certainly the M56 section of the AQMA. The existence of a continuous AQMA provides clarity for the control of developments and the identification of areas of compliance along specific areas of the corridor is likely to involve a disproportionate amount of monitoring at numerous locations due to exhibited variation in air quality levels.

Figure 3 The provisional results obtained from the Highways Agency diffusion tube study.



Action planning.

3.16 Specific actions within the plan included close working with the Highways Agency, research into the effects of speed reduction, to explore the use of Variable Message Signs (VMS), to assess the impact of developments on the network and to continue to work to reduce route diversions through the town.

3.17 The Highways Agency was unable to make the results of the M1 speed reduction study available. However, it is understood that the results of the DMRB study have been variable and that any predicted improvements are less marked once improvements in the fleet data have been accounted for. The Council understands that the option of speed reduction for the routes passing through Warrington is not likely to be viable, as the economic costs of increasing journey time are high, and the relative benefit of such a scheme is therefore not sufficient to offset the economic impact.

3.18 The use of VMS and the control of route diversions have been more successful. The Council has been able to secure access to ten cameras on the local motorway network to supplement its own system of cameras. The Highways Agency have also established a Regional Traffic Control Centre to reduce congestion, whilst work is continuing with the Highways Agency to agree strategic diversion routes to limit the impact on local roads in the event of an incident on the motorway network.

3.19 Action is also being taken as part of the Highways Agency Route Management Strategies (RMS) (ref 6). This includes studies/schemes between junctions 20 and 21a designed to reduce congestion. Other works identified in the RMS include: -

- Improvement and signing to Lymm Truck stop at junction 20.
- Slip road improvement at Junction (21a) M62/M6 link.
- Trials on "parking pockets" to encourage car share between junctions 20 and 22.

3.20 The M62 RMS (ref) has also identified several locations, which will help to reduce congestion, these include: -

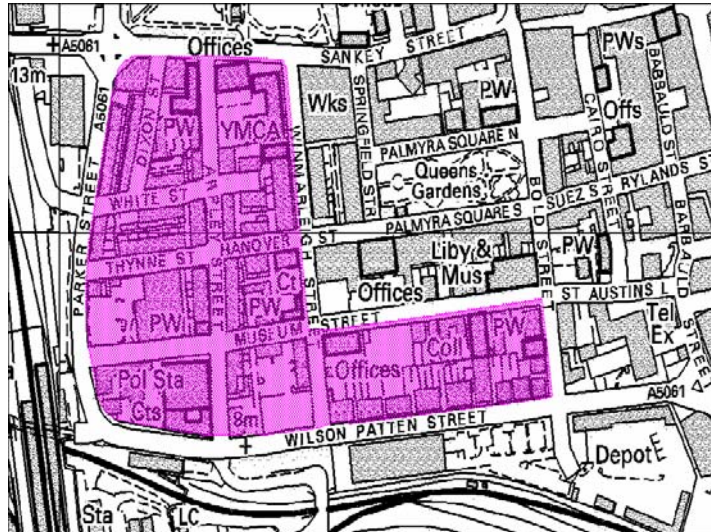
- Improvements to junction 6 of the M62, which is operating close to capacity. It is proposed to add free-flow links, one from the M57 to the M62 eastbound and one from the M62 westbound to the M57.
- Several schemes are planned to reduce merge related delays on the M62 junction 10.

3.21 The council will continue to lobby for improvements wherever possible.

The new AQMA.

4.01 A second AQMA was designated in February 2006 due to exceedances of the annual nitrogen dioxide objective in an area close to the town centre. This was done after an extensive period of community engagement. The area, which is one of those that we have been keeping under review since the original assessment, is shown in figure 4.

Figure 4 The 2006 AQMA.



4.02 Policy (ref 7) directs local authorities towards integrating non-trunk road areas, within their Local Transport Plan. The actions developed for this area will therefore be monitored as part of the Local Transport Plan.

Sustainable Action Planning (Objectives 2-10).

5.01 The Air Quality Management Plan includes a number of actions that do not directly relate to the two AQMA's. These actions have been included to allow air quality levels to be managed across the town and to allow for the principle of exposure reduction, whereby reductions below the objective values can deliver discernible health improvements for the wider population.

5.02 The sustainable management options, which are detailed in objectives 2 through to 10, are largely dependent on the implementation of the Local Transport Plan (ref 1). Progress against the plan is reported separately in the LTP progress reports. Detailed performance figures are not, therefore, stated within this report. The latest modelling results (ref 5) have again indicated that the vast majority of Warrington will comply with the relevant objectives, although air quality levels near Brian Bevan roundabout remain close to the annual nitrogen dioxide objective.

5.03 There is no LTP progress report for 2006 as this is the final year of the LTP one programme. Progress is, therefore, reported in the LTP delivery report (ref 8), which covers the entire period of the LTP one programme.

5.04 The key issues related to the management of traffic growth and congestion and the main successes are described below. A specific breakdown is provided in table 3. The areas shaded red indicate areas of no progress, these mainly relate to freight management and education campaigns. A freight management strategy is however, in place and it is hoped that this will shortly be formally adopted. Education/health campaigns have also been given a greater priority in 2007.

5.05 One of the major achievements has been the introduction of the new bus station in close proximity to Warrington's Central Station, which serves the main east to west railway line. In association with the new bus station over 350 bus stops have been improved and over 200 of these have VMS signs. Over 90% of the commercial bus fleet is also equipped with real time passenger information systems. Surveys of bus users have also indicated that over 90% are satisfied with the information provided. It is hoped that these measures will see an upturn in bus patronage.

Figure 5 A picture of the new Bus Station.



5.06 Action has also been taken to improve public transport generally. Since 2001, 53 new buses have been purchased by Warrington Borough Transport and a dedicated shuttle bus services has been introduced in key employment areas. 90% of the commercial bus fleet is connected to the real time passenger information system and 350 bus stops have been significantly improved. An investment of £200,000 has also been made for station improvements.

5.07 The Urban Traffic Control system is in place and a network of variable message signs has been rolled out. The system also allows for remote monitoring and fault diagnostics, real time information, automatic traffic counts and car park monitoring and guidance. Network conditions are also managed to optimise flows and to reduce congestion. Good progress has been made on linking the UTMC system to the air quality monitoring network and it is hoped that appropriate air quality messages will be displayed in the next few months. This will have appreciable benefits in terms of driver education and in terms of raising the profile of air quality management.

5.08 Commuters are also been supported in reducing the number of car based commuter journeys through the adoption and promotion of travel plans and the implementation of a car share scheme.

5.09 There has been a significant uptake in travel plans by employers. Work based travel plans now cover over 35,500 employees and 34 out of the 87 schools have adopted travel plans. There are also 31 safe routes to school and 12 walking bus schemes have been created with 4 being sustained.

5.10 With regard to cycling, the outer cordon of cycle routes is nearly 70% complete with over 6 Km of new and improved greenways and 15 Km of cycle track. 63% of respondents believed that the improvements to cycling facilities were worthwhile. Walkers have also been accommodated for and over 26Km of new footways have been introduced and 27 new pedestrian crossings have been established.

Figure 6 An example of a designated off road cycle route along a major route into the town.



5.11 Existing emission sources have been controlled through the regulation of industrial processes, which has seen a 100% inspection rate for permitted installations, where the local authority is the enforcing authority.

5.12 The Clean Vehicle Campaign continued in 2006. 5 events were held with over 186 vehicles being tested and 2 formal notices were issued.

Figure 7 Pictures taken from one of the Clean Vehicle Campaign events.



5.13 The Unitary Development Plan (Ref 2), which sets out the Council's town planning policies for guiding development and protecting the environment, was adopted in January 2006. It contains a specific policy on air quality, which states that the Council "will not permit development where the air quality limits will be exceeded...unless appropriate mitigation measures can be agreed. Proposed developments that may cause air pollution will require a detailed air quality assessment".

5.14 The two AQMA's have also been set up as a standard planning constraint to ensure that due weight is given to air quality within the determination of applications within these areas. A wider protection area, based upon locations predicted to be above $35 \mu\text{g}/\text{m}^3$, has also been established as a planning constraint. This helps to ensure that new residential developments or schemes with the potential to significantly affect traffic growth or conditions are appropriately assessed. A guide to help developers and planners to secure sustainable developments has also been produced, which will be launched in the next few months.

5.15 The Council is actively pursuing options for improving data dissemination. It is presently revamping its website and we have invested in additional software, which will shortly allow messages to be displayed on the VMS signs.

5.16 The Council has signed up to the Nottingham Declaration on Climate Change. This will involve a comprehensive review of its emissions, which will ultimately result in the production of an action plan that will help to drive forward a number of policies that will have an associated effect on local air quality.

Performance and effect on air quality.

6.01 The Council has conducted numerous detailed reviews and assessments of air quality since the publication of the first review in 2000, which built upon the results of the existing monitoring programme. There is, therefore, a clear body of evidence, which demonstrates that the vast majority of the town complies with all the relevant objectives. Indeed, a comprehensive reassessment of the town's air quality (ref 5), undertaken in 2006/07, reaffirmed that the town has a good standard of air quality. Furthermore, the dispersion modelling results indicate that all areas will comply with the relevant objectives by 2010; assuming predicted fleet improvements actually deliver improvements in vehicle emissions.

6.02 It is, therefore, evident that action planning should concentrate on the principles of sustainable development and exposure reduction.

6.03 Performance is being monitored through the existing ambient monitoring network, which has been re-focussed on key areas, and via the Local Transport and Unitary Development Plans. It is, therefore, not the intention of the Air Quality Management Plan to repeat this process and as such specific targets are not always stated within objectives 2 through to 10.

6.04 It is, evident, however, from the monitoring and modelling results to date that the significant development growth has been achieved without associated exceedances of the air quality objectives. However, the monitoring results have shown a slowing down of air quality improvements, which have generally been observed from year to year. This apparent trend will be monitored but it is possible that the predicted improvements by 2010 may not be delivered. Whilst, the Air Quality Management Plan is designed to deliver integrated action, to maintain and where possible improve air quality levels, it is apparent that concerted action will be required to achieve significant exposure reductions. The next phase of action planning through to 2010 will, therefore, be important.

6.05 The Action Plan does contain more specific actions on the existing motorway related AQMA, which was designated for a 50m strip either side of the motorway corridor. It is evident that there is significant variation in air quality levels within the AQMA and that some areas may actually comply with the annual nitrogen dioxide objective, although others continue to show significant exceedances. The Council has established a good working relationship with the Highways Agency, despite the fact that we have been unable to secure any 'hard-edged' remedial measures with them. This is due to the fact that they have prioritised their resources to the most pressing issues, in terms of air quality, across the entire network and because Warrington is considered to be a low priority.

6.06 The Council is currently developing options for the small town centre related AQMA following the completion of its stage 4 assessment (ref 9). The action plan is being developed as part of the Local Transport Plan and progress will be reported as part of the LTP.

Future actions.

7.01 We need to continue to monitor trends adjacent to the to the motorways and to work with the Highways Agency to secure potential improvements and to manage development growth. Research to date has indicated that air quality levels, at relevant receptor locations, are likely to be close to or marginally above the annual nitrogen dioxide objective. Detailed dispersion modelling has also indicated possible compliance by 2010. However, monitoring in certain sections of the M6 and M62 have identified more significant exceedances, whilst the year on year improvements needed to deliver compliance by 2010 have not been observed. The situation will, therefore, continue to be monitored.

7.02 The recent Rodgers Report (ref 10) highlights the importance of air quality and the council is presently reviewing the provision of its air quality services in light of the report to determine whether sufficient priority and resources have been attached to this area of activity.

7.03 It is apparent that the continued rapid growth of the town and the potential move towards exposure reduction policies will present considerable challenges in terms of the delivery of sustainable air quality.

Funding for Air Quality Management.

8.01 Revenue funding is provided to support the air quality monitoring network and the maintenance of the emission inventory. There are a number of activities that are supported through partnership working and by bids for capital support through the Government's grant system.

Table 3: Assessment of progress towards the Air Quality Management Plan Objectives.

Objective 1 *To manage the impact of the motorways on local air quality.*

Action	Performance Indicator	Performance Achieved	Outcome	Effect on Air Quality	Comments
1. To review the requirement for a motorway related AQMA.	Decision to be made in June 2004	<ul style="list-style-type: none"> Major research programme completed by June 2003. Additional research completed into the M6 in March 2005. Participating in the Highways Agency monitoring programme. 	The monitoring and modelling results have demonstrated that the AQMA is valid, but actual levels are thought to vary considerably within the area depending upon local conditions. Levels along the M56 are lower than those experienced on the other routes.	No direct effect on air quality but local conditions have been effectively characterised.	<p>The results of dispersion modelling predict likely compliance by 2010.</p> <p>Monitoring needs to continue to assess whether this is likely.</p>
2. To lobby the multi-modal studies to achieve the maximum air quality benefit where possible.	Publication of Study Findings and consultation responses.	<ul style="list-style-type: none"> Consultation responses sent May 2003. Attendance at route planning consultation meetings. M6 route management study completed. 	The study scenarios selected are predicted to be air quality neutral.	No direct improvement, but no increase in levels for traffic growth/route expansion.	
3. To undertake an evaluation of the effect of reducing motorway speeds to 50 MPH during elevated air quality periods.	Scheme evaluated as part of plan, discussions to take place with HA and decision made by June 2004	<ul style="list-style-type: none"> The literature review has been completed. The Highways Agency has commented on the results of the M1 study. 	Research has indicated that reductions in nitrogen oxides are possible. However, the Highways Agency have intimated that speed reductions are unlikely to be viable in Warrington as the economic cost in terms of journey time is too high.	Nil	Speed reduction trials are unlikely to be taken forward in Warrington.

Objective 1 *To manage the impact of the motorways on local air quality.*

4. To explore the feasibility of using the VMS to display AQ information.	To evaluate the possibility by March 2004.	VMS signs are now in place of the local motorway network.	Presently unable to display AQ messages as the signs use standard text.	Local benefits possible as drivers are being dissuaded from making local route diversions.	The Council is making good progress on integrating air quality messaging within its own VMS system.
5. To assess the impact of all planning applications that may impact on the AQMA.	Number of applications determined within AQMA	The AQMA has been identified as a planning constraint area. The Highways Agency is looking closely at spatial planning. A development guide has been developed and this will be launched shortly.	Development growth within these areas is controlled.	Prevents relevant exposure.	AQMA integrated within development control decision-making process.
6. To continue to work closely with the Highways Agency to reduce diversions off the motorway through Warrington.	Traffic count data	WBC and the HA have agreed a package of measures to manage and mitigate local diversions of the motorway. Traffic count data is not been recorded so no comparison can be made against the PI. Traffic count data coverage is being improved.	Manages traffic growth on local routes.	Helps to ensure that air quality on these routes is sustainable, long-term improvements possible.	.
7. The introduction of Junction 8 off the M62	Junction due to open December 2002. Traffic count data	Scheme completed.			

Objective 2 *To introduce measures that reduce traffic growth through the promotion of alternative transport modes.*

Action	Performance Indicator	Performance Achieved	Outcome	Effect on Air Quality	Comments
1. Vehicle Priority Lanes	Number of corridors introduced.	2 bus priority schemes introduced.	LTP predicted out-turn was met.	Minimal effect, improvements in air quality are dependent on achieving a modal shift, which reduces congestion.	Forms part of a wider package of measures to promote public transport.
2. Cycling Strategy and Routes.	Number of routes introduced. New LTP indicator for cycle trips created to fall in line with the national indicator.	12 sections of cycle lanes introduced, 6 Km of new and improved greenway, 15 Km of cycle track, outer cycle cordon is 75% complete.	Strong trend to increase in cycle trips predicted, which just falls short of the LTP indicator. 63% of respondents rated improvements as worthwhile.	Small material effect but the infrastructure is in place to promote a significant modal shift.	
3. Walking Strategy	Strategy Targets	27 new pedestrian crossings. 26 Km of new footways.	Programme on schedule	Reduction of school trips at peak hours could have a demonstrable effect.	
4. Variable message signs at bus stops	The introduction of information points	350 bus stops with real time information.	90% of respondents satisfied with the usefulness of the information, 92% satisfied with availability.	Promotes choice and uptake of public transport, actual effect depends upon modal shift.	
5. The creation of quality bus networks.	Number of network improvements undertaken.	New bus station built. 90% of commercial fleet connected to real time passenger information.	8412 boardings in 2005/06 expressed as thousands of bus passenger journeys per year.	Promotes choice and uptake of public transport, actual effect depends upon modal shift.	
6. The Introduction of Bus priority measures	The introduction of the UTC system.	Bus priority measures have been introduced on key routes.	Programme on schedule	Smooths access and flow for public transport, promoting modal change	
7. The introduction of Smart Cards	The introduction of the cards	Still looking at the overall feasibility.	Need improvements in IT to deliver.	Promotes choice and ease of access.	
8. Information Line for public transport users	Use of the Information line.	35,665 calls were made to the passenger information line in 2004/05.	Promotes uptake through information.	Promotes choice.	
9. Improve Local Rail Facilities	Improved Facilities	Investment of £200,000 in Station improvements. Bus interchange built close to mainline station.	Programme on schedule	Promotes choice and uptake of public transport, actual effect depends upon modal shift.	

Objective 3 *To improve peoples quality of life through the introduction of schemes that control vehicle access, speed and flow.*

1. 20 MPH Zones	Number of schemes, Traffic Counts, AQ Surveys.	9 highway safety schemes introduced, 18 traffic-calming schemes, 9 with 20 MPH zones.	Controls access and speed.	Reductions in air quality are possible depending upon any reduction in traffic flows.	
2. Traffic Calming	Number of Schemes introduced, Traffic counts, AQ Surveys.		Improves local accident rates.	Unlikely to effect air quality unless traffic flow is reduced.	
3. Speed Regulation	Traffic Counts, AQ surveys.	Not monitoring but community speed watch initiative in place. 20 20mph zones introduced.	Local speed reductions.	Likely to be minimal.	
4. Home Zones	Number of Schemes introduced, Traffic counts, AQ Surveys.	£897,000 invested in Whitecross Home Zone scheme.	Local improvements and access control.	Local improvements possible depending upon access control.	
5. Urban Renewal Areas	Number of Schemes introduced, Traffic counts, AQ Surveys.	2 Local schemes in place.	Local improvements and access control.	Local improvements possible depending upon access control.	
6. Urban Traffic Control System (UTC)	Introduction of System, including AQ sensors.	10 cameras on local roads, feeds from 28 motorway cameras.	The smoothing of flows and junction controls can assist in the management of air quality.	The integration of air quality sensors will help to provide a useful management tool with the potential to improve air quality levels.	
7. Pedestrianisation of Town Centre	Completed				

Objective 4 *To manage the impact of emissions associated with road freight movements.*

Action	Performance Indicator	Performance Achieved	Outcome	Effect on Air Quality	Comments
1. Implement the Burtonwood HGV restriction trial.	Scheme implemented. Environmental evaluation.	Scheme In Place.	Removal of HGV movements through village.	Significant local effects, diversions back onto key routes within capacity.	Numerous other schemes are in operation.
2. Promote the Powershift Scheme and alternative fuel usage.	Implementation of campaign to target freight operators.	No bespoke schemes introduced in 2006.			
3. To encourage fleet maintenance, management and the uptake of the Road Haulage Modernisation Fund.	Implementation of campaign to target freight operators.				
4. Locate generators of high volumes of freight traffic at sites with good access to the strategic road network and away from residential properties.	The determination of planning applications.	The Omega and Birchwood Park industrial parks provide capacity and excellent transport links, reducing local road movements.	The location of key strategic sites near motorway junctions reduces local road movements but may influence levels with the AQMA.	The siting of key parks near the motorway manages general air quality levels. Local air quality levels need to be addressed through the freight management strategy.	The Inspector's decision on the UDP was released in April 2005.
5. Wherever practical freight development will be encouraged at sites with access to rail/waterways	The determination of planning applications.	The Council is presently considering a major scheme for a freight interchange at the former Parkside colliery.	Possible regional improvements.	The impact of the scheme is presently being evaluated.	
6. Freight Management Strategy	Strategy Implemented, membership of regional Freight task group.	No further progress in 2006.			
7. Employ Consultants to develop freight management options.	Implementation of Study				

Objective 5 *To support commuters in reducing the number of car based commuter journeys.*

Action	Performance Indicator	Performance Achieved	Outcome	Effect on Air Quality	Comments
1. Implementation and promotion of Travel plans	Number of employees covered by plans.	Workplace travel plans now cover 32,000 employees, 34 out of 87 schools have travel plans, 31 safe routes to school, 4 walking buses.	PI achieved.	Local improvements due to a reduction in peak hour movements.	
2. Appointment of Travel Plan co-coordinator and Car share officer	Officers in place	PI already achieved.			
3. Town centre car parking strategy and potential decriminalisation of parking.	Long stay parking in car parks. Feasibility study on the decriminalisation of parking.	Warrington Borough Council is now the regulator. Town centre car park spaces reduced from 729 to 232.	PI achieved.	Reduction in commuter movements will reduce peak hour flows on key routes.	
4. Promote the use of land that is well served by public transport.	Planning Applications and decisions	These are specific policies within the UDP. The Chapelford Urban Village provides significant housing capacity with employment areas and rail and bus access. There is now significant movement towards residential development within the heart of the town centre, which provides excellent transport links.			
5. Ensure that housing land is readily accessible to facilities and areas of employment.	Planning Applications and decisions				

Objective 6 *To assess air quality levels against national objectives and to evaluate the performance of the plan.*

Action	Performance Indicator	Performance Achieved	Outcome	Effect on Air Quality	Comments
1. Continuous real-time monitoring of the Coal-Fired power station	Compliance with the objective. 95% data capture rate.	The data capture rates of 99% and 98% were much improved.	Demonstrates that emissions from the station are complying with the objectives.	No exceedances of the objectives have been observed.	Monitoring will continue.
2. Project based real-time monitoring of the motorway.	95 % data capture, review of AQMA in 2004.	Study completed March 2005.	PI achieved.	Quantified the level of air quality improvement required.	
3. Co-location of indicative air pollution monitors (diffusion tubes and Learian Streetboxes) with the air quality laboratory.	90% data capture.	<p>Triplicate diffusion tubes have been co-located. 90% data capture achieved.</p> <p>The use of the Learian streetbox has been discontinued due to cross sensitivity issues.</p>	PI achieved.	Allows diffusion tube network to be bias adjusted.	
4. Maintain the emission inventory for Warrington	Annual maintenance of the inventory	2005/06 update completed.	PI achieved.	Allows air quality levels to be modelled.	The inventory is now available on line.
5. Model impacts of AQ Plan, UDP and LTP	Publication of results, annual review of AQ Plan.	The whole of Warrington has been re-assessed in 2006/07.	PI Achieved.	The modelling indicates that all areas will comply with the objectives by 2010.	Monitoring needs to continue to assess the accuracy of the modelled data.
6. Review and assess Warrington's air quality in accordance with Government guidance.	Submission of Review and Assessment reports.	All reports completed on time 2006 USA set out as an example of good practice.	PI achieved.	Allows air quality to be benchmarked and actions to be developed.	

Objective 7 *To regulate emission sources and to secure reductions where appropriate.*

Action	Performance Indicator	Performance Achieved	Outcome	Effect on Air Quality	Comments
1. To maintain the "Air About Us" campaign.	The undertaking of annual awareness events	Brand still being used to promote air quality. New leaflets produced promoting the campaign in libraries.	Raises awareness and promotes sustainable transport choice.	Minimal effect.	The Website is currently being enhanced to provide better access to information.
2. To support the National Don't Choke Britain campaign	The undertaking of annual awareness events	No specific events held in 2005.	No outcome.	None.	Community campaigns are being reconsidered as part of the 07/08 service plan.
3. To participate in the Healthy Schools initiative and to make air quality information available to schools	Participation in the scheme	No progress.	No outcome.	None.	
4. To maintain Chartermark status	Maintenance of award	Suspended due to Council reorganisation.	No outcome	Customer focus award- no direct effect.	
5. To introduce an odour management plan	Introduce plan by August 2003 with prescribed targets for reducing the level of odour complaints	The plan is now in place.	Seeking improvements in odour control.	Addresses peoples concerns about the wider air quality issues relating to nuisance.	
6. To set up an air quality website that holds real-time data	Introduction of site by April 2003.	PI achieved.	Website in place. Website ranked 5 th best in the Country by Air Quality Management Magazine.	Makes information on air quality available, promotes sustainable transport options.	

Objective 8 *To regulate emission sources and to secure reductions where appropriate.*

Action	Performance Indicator	Performance Achieved	Outcome	Effect on Air Quality	Comments
1. To introduce a vehicle emission testing scheme and to issue fixed penalties for non-compliance	Scheme implementation.	5 events held in 2006/07, 186 vehicles tested, 2 fixed penalty notices issued.	2 fixed penalty notices served, faults were corrected. Drivers also corrected emissions on a voluntary basis.	Likely to see localised improvements but regular events are required to maintain profile.	Monies have been secured for the 2006 campaign.
2. To explore the feasibility of enforcing stationary vehicles to switch off their engines	Determine feasibility by December 2003	No significant progress to date.	No outcome to date.	Scheme cannot address queuing traffic, which is a key local issue but local benefits may be possible.	Need to progress.
3. To regulate industrial processes in conjunction with the Environment Agency.	Inspection returns monitored by DEFRA	100% inspection rate achieved.	Service standards raised to include management plan and enforcement plan.	Demonstrable effect in controlling emissions.	To measure performance against the new BVPI.
4. To work with the Police regarding traffic speed enforcement	Number of prosecutions	Community speed watch schemes and regional initiatives.	No measurement data.	Unlikely to have a significant impact by itself.	
5. To enforce nuisance legislation and the Clean Air Act 1993	Number of complaints actioned and notices served.	500 pollution service requests received. 1 pollution notice served.	On schedule. Localised emission sources dealt with.	The regulation of emissions can bring about local improvements.	
6. To enforce the Smoke Control Areas	Maintenance and operation of areas and enforcement	98% of Warrington is within an area, compliance is monitored.	On schedule.	Significant effect on local air quality levels.	
7. Reporting of Smokey Vehicles	Number of vehicles reported to Vehicle Inspectorate	2 vehicles reported.	A major awareness campaign has just been implemented.	Can help to reduce local emissions.	Warrington has joined with the Greater Manchester authorities to set up an awareness campaign.

Objective 9 *To aid the development and regeneration of the town through the creation of a sustainable environment.*

Action	Performance Indicator	Performance Achieved	Outcome	Effect on Air Quality	Comments
1. The integration of air quality within the UDP and Regeneration Strategy	Publication of UDP and Regeneration strategy AQ is included within both documents.	The UDP has been adopted. Air quality is a specific policy area within the UDP and Regeneration Strategy. Air quality considerations are integrated within development briefs. Supplementary planning guidance developed on travel plans.	Proactive management controls potential exposure and any potential impact from traffic growth.	Effect can be significant, although need to have regard to a potential for a background creep in air quality levels.	
2. The assessment of planning applications for any adverse air quality impact.	Number of AQ conditions imposed	It is not possible to monitor the number of air quality conditions imposed but it is routinely considered as a material planning consideration.	Proactive management controls potential exposure and any potential impact from traffic growth.	Controls potential exposure and manages traffic growth.	4 specific Air Quality assessments submitted in 2006/07, planning constraint layers in place.
3. The publication of guidance on Air Quality and Development Control	Publication of the guide by December 2003	Adopted the NSCA guide as an interim measure. WBC guide produced ready for launch in 2007.	The planning guide will highlight air quality considerations and result in appropriate assessments by developers.	Improvements possible through better forward planning.	The rapid development of the town presents a serious challenge in terms of delivering sustainable air quality levels.
4. Use of planning obligations, where appropriate.	Number of obligations imposed relating to AQ	Planning obligations have been used in Latchford to manage the effect of numerous residential applications	Various 106 agreements in place. Planning constraint layer in place.	The highway scheme should mitigate against a significant increase in air quality levels.	

Objective 9 *To aid the development and regeneration of the town through the creation of a sustainable environment.*

		on congestion and air quality.			
5. The requirement for Environmental and Health impact studies for larger schemes	Number of conditions imposed	These are routinely undertaken for larger schemes, such as the Omega development. It is not possible to directly monitor the performance indicator.	Ensures that schemes are sustainable.	Prevents a significant increase in air quality levels through scheme design and mitigation.	
6. The maintenance of the AQMA and the assessment of schemes within the area, or impacting on it.	Number of planning applications determined within the AQMA.	There have been no recent planning approvals within the AQMA, although a development has commenced through a previous permission.	Prevents relevant exposure within the AQMA.	No direct effect on air quality but controls relevant exposure and any increase in the contribution of the local road network.	
7. To produce guidance on minimising dust from construction sites.	Demolition notices contain dust conditions. Production of guidance by March 2004	Leaflet produced	PI achieved.	Additional guidance may deliver local improvements.	
8. Ensure that Economic Development Strategy has strong links to UDP, LTP and AQ Plan.	The Council has published its Economic Development and Competitiveness Strategy.	The economic regeneration of the town is being managed at a corporate level allowing all factors to be considered.			

Objective 10 *To reduce emissions associated with Council activities.*

Action	Performance Indicator	Performance Achieved	Outcome	Effect on Air Quality	Comments
1. To implement a staff travel plan and car share scheme	Plan has been Implemented. Car share scheme is in operation.	Scheme in place.	Car share scheme operating.	Dependent on uptake.	
2. To ensure that taxi's licensed by the Council comply with vehicle emission checks	Continuation of requirement for testing under the licensing scheme	Scheme is still operational.	All licensed taxis comply with emission checks.	Helps to reduce emissions.	
3. To introduce e-Government policies, which reduce the need to travel.	% of Council services available by 2005.	Over 90% of services available in 2006.	Can assist in the reduction of trips.	Can be effective as part of a wider package of sustainable measures.	
4. Tackle energy conservation in the housing stock through the Energy Conservation Act and Urban Renewal	Energy Conservation Act Targets and number of Urban Renewal Schemes Completed	2 major urban renewal schemes in place. An 'Energy house' has been established to promote energy conservation. Approximately 1000 visitors per annum.	A significant reduction in fuel usage will reduce the emission of pollutants.	Energy conservation can play a part in local air quality but it is key to regional policy and global warming.	
5. Reduce Emissions from Council buildings	Energy Conservation Officer Appointed	100% of electricity purchased is 'green' energy.	The Council is seeking to reduce emissions and use sustainable sources.	Will assist in the delivery of a sustainable environment.	
6. To maintain and update the Councils Vehicle fleet	% Composition of fleet	The council has not invested in green fuels but vehicles are inspected and serviced four times per annum. 4 pool cars are available. Warrington Borough Transport have	The maintenance and servicing of vehicles can reduce emissions.	The council is a large vehicle operator but actual air quality effects are likely to be minimal.	

Objective 10 *To reduce emissions associated with Council activities.*

		purchased 53 new buses.			
7. To undertake a trial using catalyst solutions on vehicle fleet.	Complete evaluation by July 2003.	The evaluation phase has been completed and exhaust systems were fitted to vehicles operated by Warrington Borough Council in an attempt to promote uptake. The units have proved to be unreliable and they have been removed. Two unit still operating on the bus fleet.	Catalytic exhaust systems have been fitted but their operation has been problematic.	Unlikely to have any major impact. The council is unlikely to expand the scheme.	
8. To ensure where possible that Waste policy helps to reduce HGV movements	Number of movements to Landfill sites	The town has three major landfill operations. Two of the sites are due to close in the short-term to medium term.	Unable to monitor.		

References.

1. Warrington Borough Council "Local Transport Plan"
2. Warrington Borough Council "Unitary Development Plan"
3. ENDS Report 385/February 2007.
4. Warrington Borough Council-"Updating and Screening Assessment (2003).
5. AEA Energy & Environment for Warrington Borough Council "Warrington Detailed Assessment (2007)
6. Highways Agency Route Management Strategy.
7. DEFRA-Policy Guidance Addendum Note PGA (05).
8. Warrington Borough Council "Local Transport Plan Delivery Report (2007).
9. Warrington Borough Council "Parker Street Air Quality Management Area further Assessment (stage 4) (2007).
10. Cabinet Office "National Enforcement of priorities local authority regulatory services " Peter Rogers (2007).