

Harborough District Council

Annual Progress Report

2007

June 2007

Introduction

There is a duty on all local authorities to carry out an assessment of the local air quality and compare it to the national objectives that have been set for various pollutants. Further information on the National Air Quality Objectives can be found in Harborough District Council's Stage 4 Review and Assessment, available on the web site www.harborough.gov.uk. Where it is anticipated that the national objectives will not be met by the prescribed target date, the local authority must declare an Air Quality Management Area and develop and implement Action Plans in an attempt to improve the situation.

The assessment of local air quality takes place over several phases. Initially a desktop exercise was undertaken to analyze the local effect of each of the pollutants described in the National Air Quality Strategy. This assessment was carried out using national background levels and where available local monitored data. Where it was anticipated that the national objectives would not be achieved by the target dates, a more detailed review was required to determine a more accurate assessment of the pollutant levels in the local area.

Within Harborough District, the First Stage Review and Assessment concluded that further investigation would be required for Carbon Monoxide, Lead, Particulates (PM₁₀) and Nitrogen Dioxide (NO₂). Subsequently the Second and Third Stage review concluded that, with the exception of Nitrogen Dioxide, it was likely that all of the National Air Quality Objectives would be met by the target date. With regards to Nitrogen Dioxide it was felt unlikely that the national objective would not be met for Lutterworth Town Centre, and Air Quality Management Area was declared in July 2001.

All the previous reports are available on www.harborough.gov.uk

Pollution Monitoring in Harborough District.

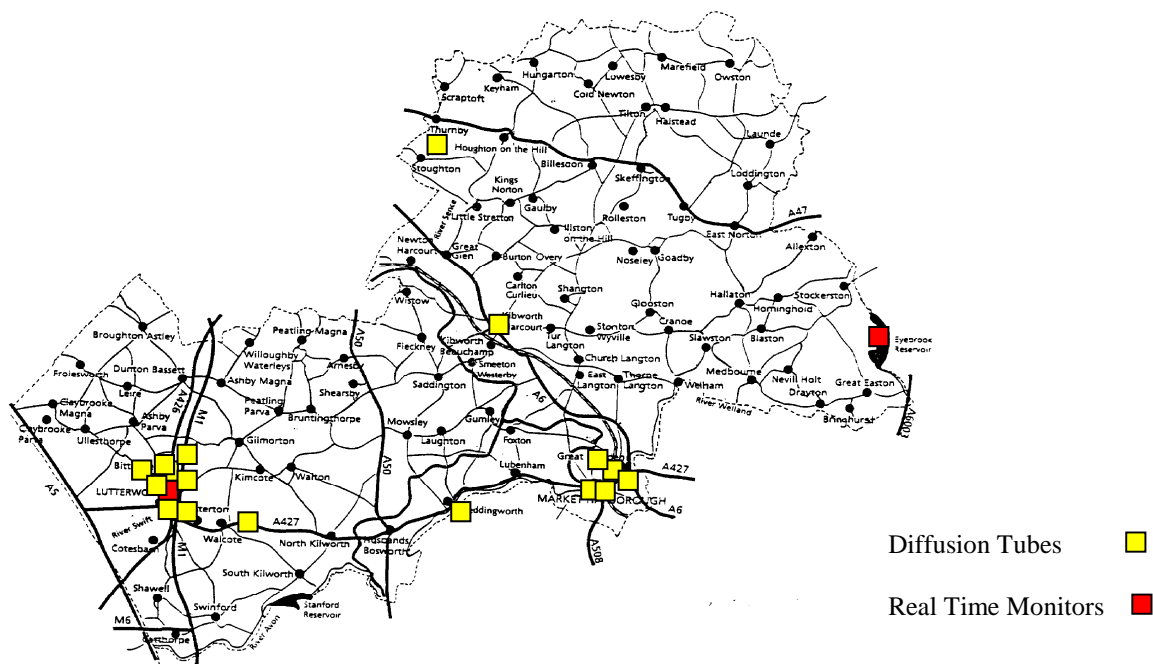
As part of the assessment of the local air quality, a number of diffusion tubes are located throughout the district. These tubes are a simple and cost effective method for screening air quality and provide a good indication of the annual average levels of Nitrogen Dioxide.

In addition to the network of diffusion tubes, there is a real time monitoring station in Lutterworth, continuously measuring levels of Nitrogen Dioxide and PM₁₀'s. The monitoring station is situated on the main road running through Lutterworth. The station is located with the existing Air Quality Management Area and is on a roadside position approximately 3

metres from the kerbside of a busy road. There is a slight canyon effect from neighbouring buildings. The station has been situated in the same location since 1999; however ratified data has only been available since 2003. The raw data collected by the monitoring station is validated using consultants, Casella Eti.

3.3 There is a second automatic monitoring station in Harborough District and this forms part of DEFRA's UK national monitoring network. The location of this rural site is on arable farmland, approximately 300 metres from nearest small road and approximately 2km from the village of Stockerston. The pollutants measured at this site are Nitrogen Dioxide, Carbon Monoxide and Ozone. The monitoring station is maintained by Casella Stanger on behalf of DEFRA.

Location of Monitoring Sites



Monitoring Results.

Diffusion Tubes

4.1 The diffusion tubes are analysed by Casella CRE Air. This laboratory has a defined quality system, which forms part of the UKAS accreditation programme. The tubes are prepared by spiking with 10% TEA in water.

4.2 The laboratory takes part in the NO₂ network field inter-comparison, co-coordinated by the Health and Safety Laboratory (HSL). Full documentation of the quality control and calibration system can be found in Harborough District Council's Stage 4 Review and Assessment (www.harborough.gov.uk) and will not be included in this report.

4.3 As discussed earlier in this report, diffusion tubes are a simple method to obtain information on the local pollution levels. There is a recognised inherent error in using diffusion tubes in that there is a tendency for them to either over or under estimate the actual pollution levels. There are a number of ways in which this error can be adjusted. The current recommended best practice is to use established bias correction factors, which are compiled from several different co-location studies throughout the country. Details of the bias correction factors can be found on <http://www.uwe.ac.uk/aqm/review/diffusiontube300307.xls> by taking into consideration Harborough District Council's diffusion tube supplier and preparation methods, the bias correction factor for 2006 is 0.87.

Table 1 gives the bias corrected data for the 2006 diffusion tube survey in Harborough district. The corrected results have been projected forward to the objective year of 2010 using the year adjustment factors available from the website http://www.airquality.co.uk/archive/laqm/tools/Year_Adjustment_Calculator22a.xls

Table 1 – The Bias corrected results for Nitrogen Dioxide for 2006 and the predicted results for 2010.

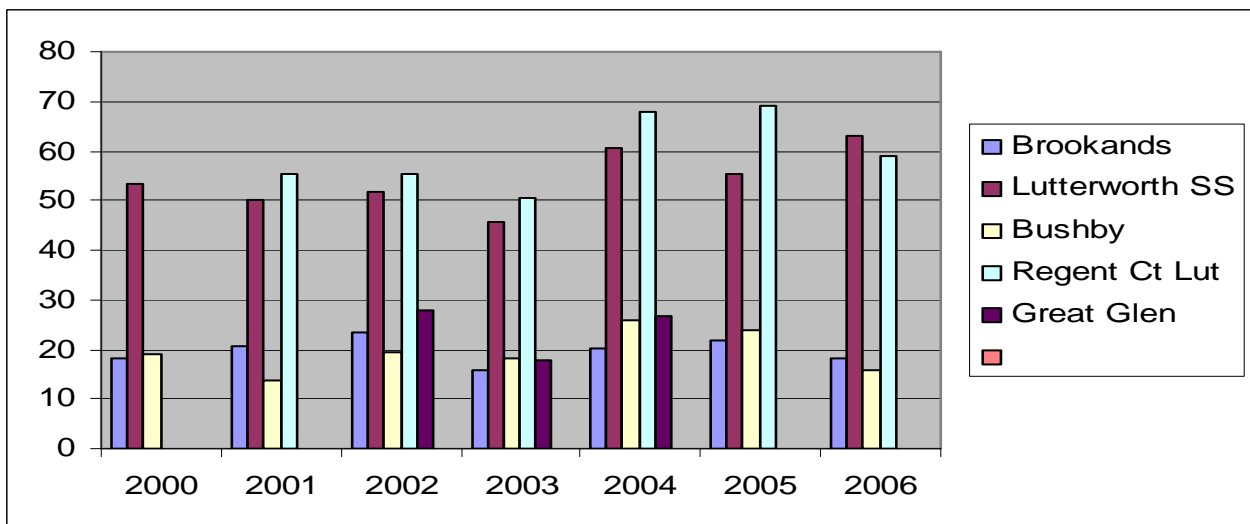
Tube number	Location	Bias adjusted results for 2006 µg/m³	Predicted levels for 2010 µg/m³
1	Regent Ct Lutterworth	51.7	44.76
2	Lutterworth Service Shop	55.1	47.7
3	Brooklands MH	15.9	14.24
4	Bushby MH	13.6	12.18
5	Lutterworth Monitoring station	47.5	41.12
6	Theddingworth	31.1	26.93
7	Lilac Drive Lutterworth	27.9	24.16
8	Maxwell Drive Lutterworth	26.3	22.77
9	Central Park Lutterworth	37.7	32.64
10	Day Nursery Lutterworth	47.6	41.21

11	Kibworth	35.1	30.39
12	Rockingham Road MH	29	25.11
13	Harboro Rubber	29.2	25.28
14	Western Ave MH	18	15.58
15	The Square MH	26.2	22.68
16	Walcote	24.9	21.56
17	Jazz Hair Lutterworth	44.5	38.53

The results highlighted in red show likely exceedences of the National Air Quality Objective of 40µg/m³ for an annual average and these fall within the current Air Quality Management Area for Lutterworth.

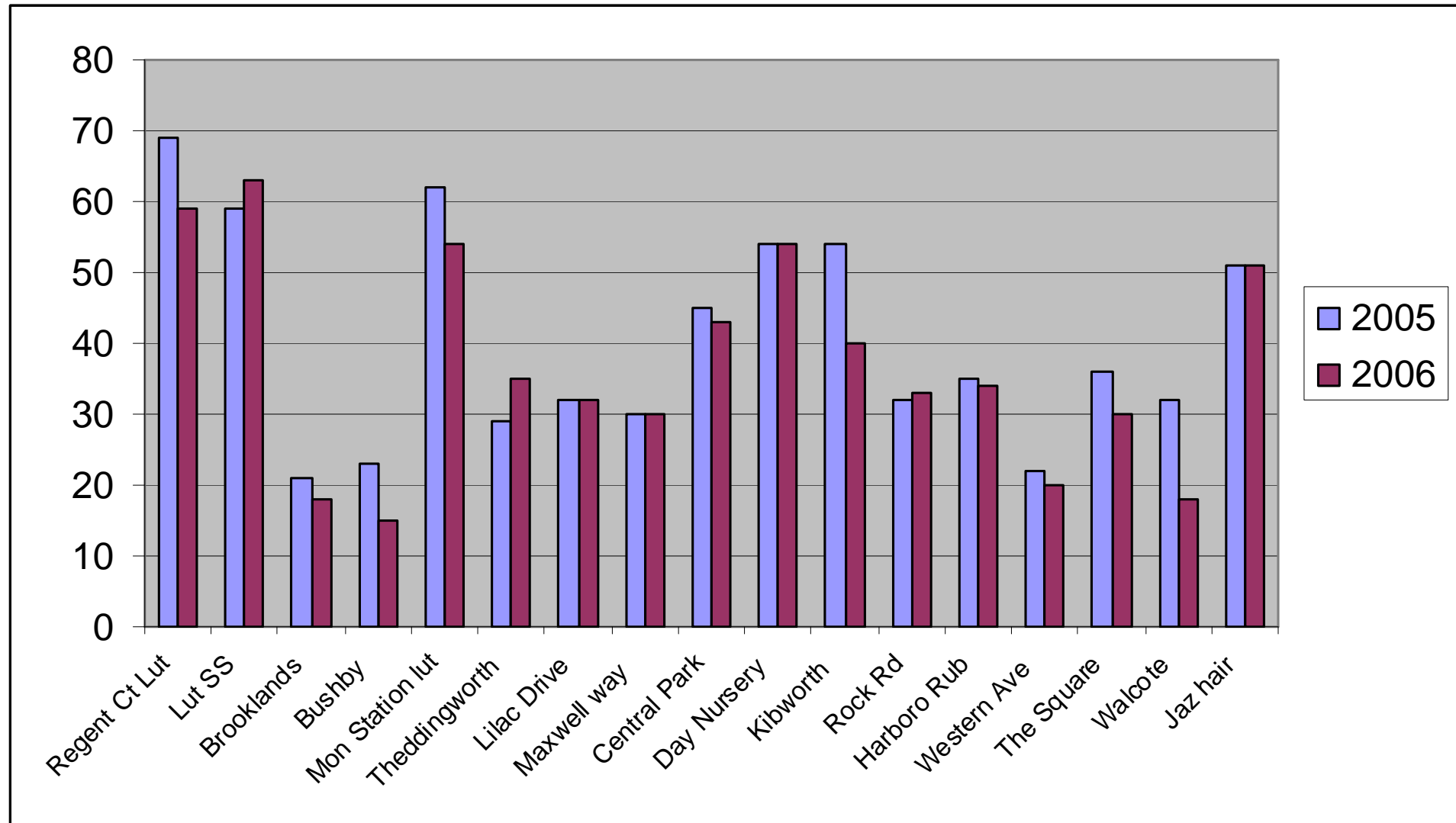
Diffusion tube monitoring has been undertaken throughout the district for many years; however in 2005 the network of tubes was extended from 5 tubes to 17. Graph 1 shows a general trend of the original tube network and Graph 2 shows the trend for the extended survey between 2005 and 2006.

Graph 1 Trends in the levels of Nitrogen Dioxide in the District between 2000 and 2006



Graph 2

Trends of uncorrected Nitrogen Dioxide Results from the extended survey for 2005 and 2006 – $\mu\text{g}/\text{m}^3$



Real Time Monitoring Station Results

There are two real time monitoring stations situated within Harborough Districts area. One of the monitoring stations is located within the Air Quality Management Area in Lutterworth and is maintained by Harborough District Council and Cassella Eti. The second monitoring station forms part of the National Automatic Monitoring Network and is located in a rural location to the east of the district.

Data from the real time monitor is stored on the logger as “raw” or “uncorrected” data, therefore it needs to be corrected or “validated” before it can be used. To validate the data, the analyzer needs to be checked against a reference or “zero” air and “span” gas.

There are two methods available to correct data by using the calibration checks to verify the analyzer is corrected for any response change: -

- Daily automatic calibration checks
- Fortnightly manual calibration checks

The monitoring station at Lutterworth uses the daily automatic calibration checks as part of the validation process and the manual calibration is carried out every fortnight to confirm the results.

Table 2 shows the results of NO₂ and PM₁₀ for 2006. Current Guidance advises that it is necessary to apply a correction factor of 1.3 from PM₁₀ results when a TEOM monitor is used. Consequently the annual mean for PM₁₀ is 31.46ug/m³ with 7 exceedences of the 24 hour mean and the annual average for Nitrogen Dioxide is 55ug/m³ with 6 exceedences of the 1 hour mean. These results are then compared to the National Air Quality Objectives for the respective pollutants to confirm as to whether there is an anticipated exceedence of the national objectives.

Data from the real time monitor confirmed that the national objective for nitrogen dioxide in Lutterworth would still not be achieved. Appendix 1 shows the 2006 results from the monitoring station for nitrogen dioxide and PM₁₀.

Table 2**Results of the Lutterworth Real Time Monitor - 2006**

The table shows the number of exceedences and average values for Nitrogen Dioxide and Particulates. These are then compared to the NAQS Guideline values

Month	NO2 ($\mu\text{g}/\text{m}^3$) Monthly Average	NO2 ($\mu\text{g}/\text{m}^3$) Exceedences of 1 hr mean	PM10 ($\mu\text{g}/\text{m}^3$) Monthly Average	PM10 exceedences of 24 hr mean
January	61.0	1	24.9	1
February	61.9	0	34.3	4
March	59.8	2	23.3	1
April	59.8	1	21.4	0
May	51.1	0	23.0	0
June	56.4	0	25.8	0
July	53.4	0	27.5	0
August	45.3	0	18.8	0
September	53.3	0	24.4	1
October	49.4	0	22.9	0
November	56.7	0	26.3	0
December	51.5	2	21.2	0
	NO2 ($\mu\text{g}/\text{m}^3$) Monthly Average	NO. OF EXCEEDANCES	AVERAGE	NO. OF EXCEEDANCES
	55.0	6	24.2	7

National Air Quality Strategy Annual Mean Guideline Value for NO2 and PM10 - 40 $\mu\text{g}/\text{m}^3$

National Air Quality Strategy NO2 1 Hour Mean Guideline Value - 200 $\mu\text{g}/\text{m}^3$ (not to be exceeded more than 18 times in a year)

National Air Quality Strategy PM10 24 Hour Mean Guideline Value – 50 $\mu\text{g}/\text{m}^3$ (not to be exceeded more than 35 times in a year)

The rural monitoring station has been in operation since December 2003 and Table 3 shows the results for this monitoring station for 2006

Table 3

Pollutant	Objective		Results for 2006 Rural Monitoring Station
	Concentration	Measured As	
Nitrogen Dioxide	40µg/m ³	Annual Mean	10.9 µg/m ³
Carbon Monoxide	10.0mg/m ³	Max daily running 8 hr mean	Nil exceedences measured
Ozone	100µg/m ³ not to be exceeded more than 10 times a year	Daily maximum of a running 8hr mean	33 exceedences

Ozone is not one of the pollutants covered by the Local Air Quality Management process. It is recognised that due to the fact that much of the problem from Ozone stems from sources outside of the UK, there is little that the district councils could do to improve the local situation. The problem of Ozone is being addressed on an international scale.

New Developments

In May 2006, an application for a permit under Part 2A of the Pollution Prevention and Control legislation was submitted to the Environment Agency for the development of a landfill site. The site is approximately 1.2km away from the nearest village, with the closest residential development being 230m west of the proposed site boundary. The 2004 background figure PM10 for this area is 19.2µg/m³ therefore it is deemed that there are no “near” receptors to this proposed development. In addition, the proposals for dust mitigation submitted as part of the permit application do not indicate that there will be a problem relating to dust. A quarry has been operation for several years at this location and no complaints relating to dust have been received by Harborough District Council. In view of the above it is not anticipated that a detailed assessment will be required at this stage however the situation will continue to be monitored.

Action Plan

In 2006 the Action Plan was incorporated into the Leicestershire County Council Local Transport Plan 2006-2011 (Table 4). The potential options were evaluated on a cost/benefit

basis and ranked in accordance with the perceived improvements to air quality. The NO₂ impacts have been estimated for Local Transport Plan purposes and give an indication on the likely improvement in air quality as a result of the action.

Table 4 Lutterworth Air Quality Action Plan

Level 4: >2µg/m³ Level 3: 1-2 µg/m³ Level 2: 0.2- µg/m³ Level 1: <0.2 µg/m³
 Cost 1: >£1m Cost 2: £500K -£1m Cost 3: £100K-£500K Cost 4: <£100K

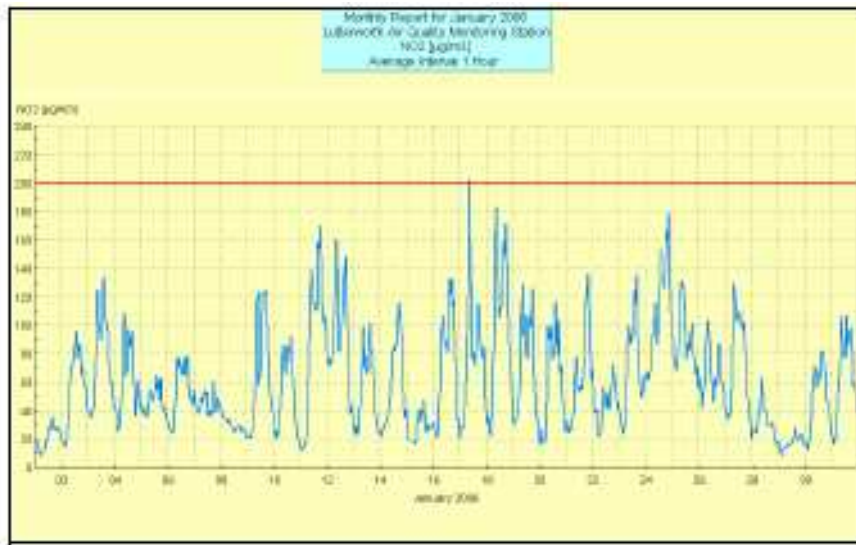
Option description	Lead Authority	AQ impact	Non-air quality impact	AQ rank
		Time Scale		
		Cost		
1. Completion of Lutterworth Western Relief Road to divert traffic from the town centre	County Council	Level 4	Improved town Centre for everyone with fewer road casualties	4X1=4
		5 – 10 yrs		
		Cost 1		
2. 7.5 tonne weight limit to divert lorries from A426 through the town centre.	County Council	Level 4	Improved town centre but negative impact on other routes	4X4=8
		<2 yrs		
		Cost 4		
3. Lower emissions from district and it's contractor vehicle fleets	Harborough District	Level 1	None in Lutterworth but newer fleets could be more efficient	1X3=3
		2 – 5 yrs		
		Cost 3		
4. Cleaner vehicles in town centre with Low Emission Zone	County Council	Level 4	Improved town centre but negative impact on other routes	4X2=8
		5 – 10 yrs		
		Cost 2		
5. Planning Controls to reduce traffic impact of new development on AQMA	Harborough District	Level 1	Safeguarding of town centre environment	1X4=4
		0 – 2 yrs		
		Cost 4		
6. Road side emission testing of goods vehicles	VOSA	Level 2	Possible negative effect on relations with local businesses	2X3=6
		0 – 2 yrs		
		Cost 3		
7. Work with bus companies to reduce bus emissions	County Council	Level 2	Newer buses attracting more patronage	2X4=8
		0 – 2 yrs		
		Cost 4		
8. Network management for road works, incidents and planned events	County Council	Level 1	Less congestion and improved environment and economy	1X4=4
		0 – 2 yrs		
		Cost 4		
9. School travel planning with investment in walking and cycle routes	County Council	Level 1	Less traffic/congestion and health benefits of walking and cycling	1X4=4
		0 -2 yrs		
		Cost 4		

10. Smarter Choices and promotion building on working travel plans	County Council	Level 1	Less traffic/congestion and health benefits of walking and cycling	1X4=4
		0 – 2 yrs		
		Cost 4		
11. Better vehicle use of roadspace for less disruption to free flowing traffic	County Council	Level 1	Less congestion and improved environment and economy	1X4=4
		0 – 2 yrs		
		Cost 4		
12. Land use planning for no unnecessary additional traffic through town centre.	Harborough District	Level 2	Less traffic/congestion and health benefits of walking and cycling	2X4=8
		2 -5 yrs		
		Cost 4		

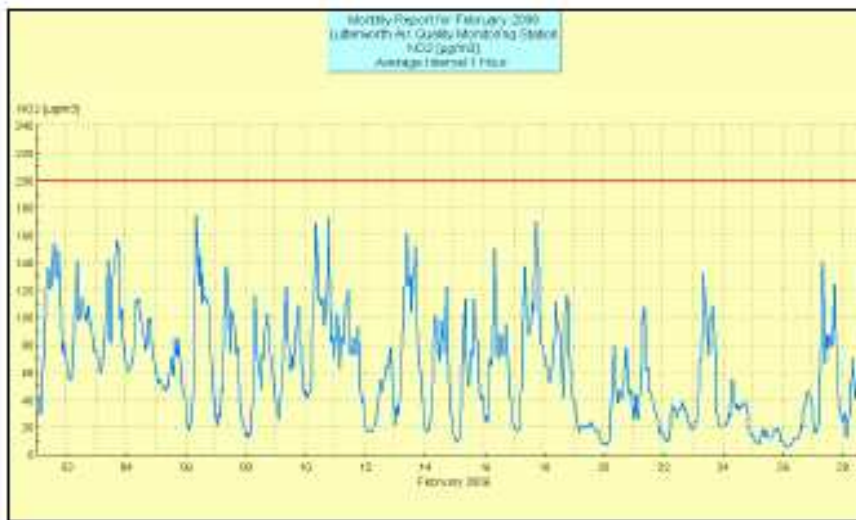
Appendix 2 shows the progress to date on the various actions.

Appendix 1 – Monthly Results from the Real Time Monitor 2006

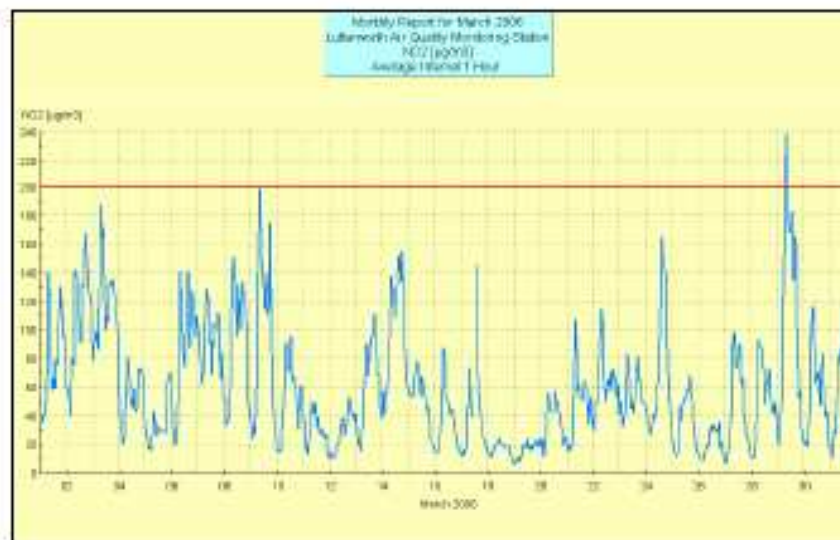
Nitrogen Dioxide



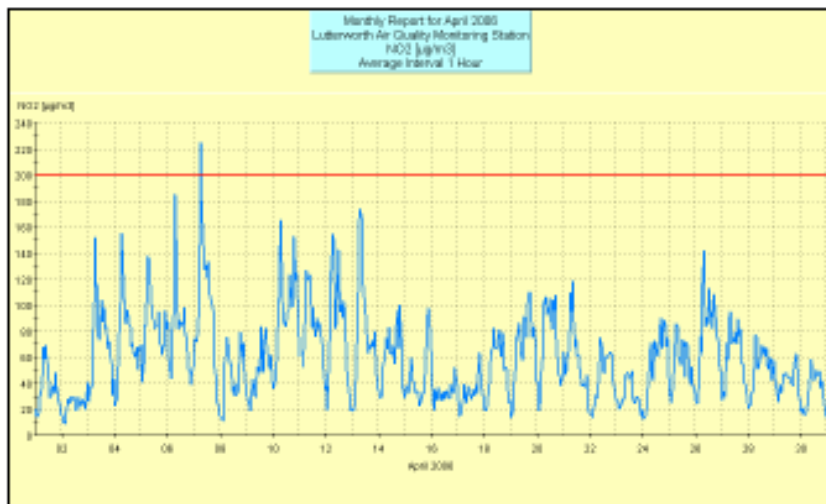
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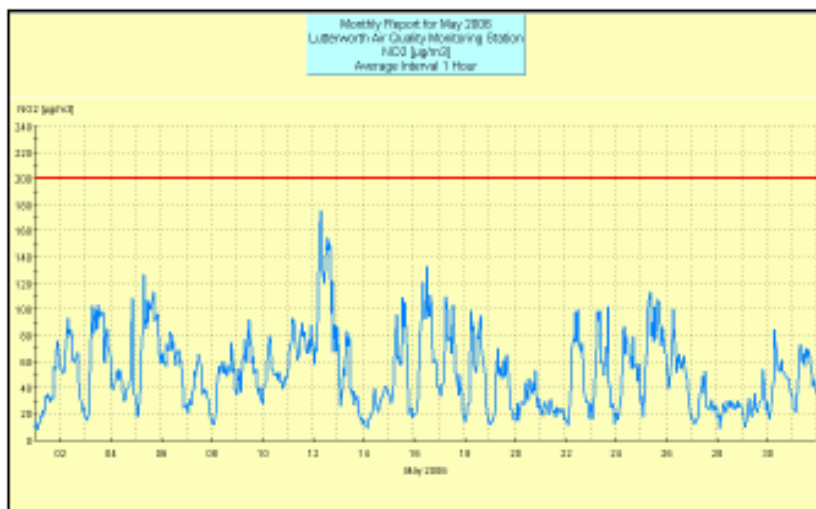
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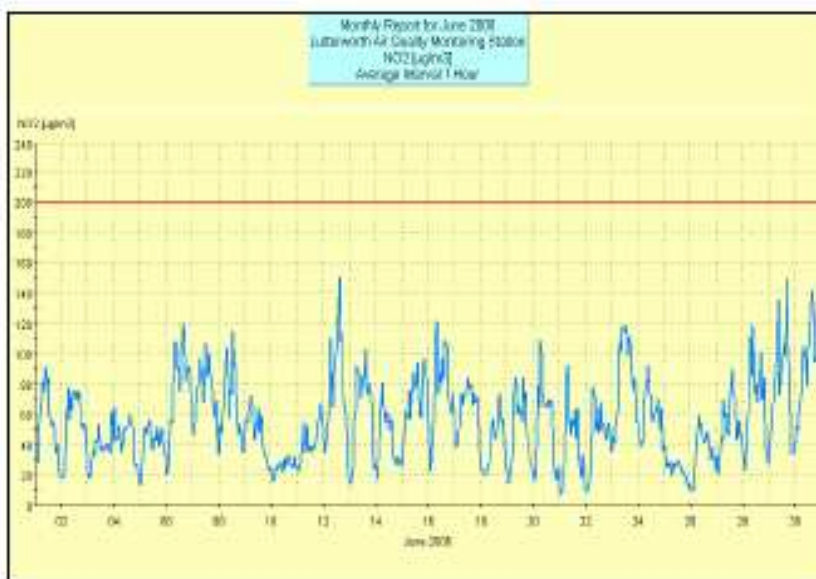
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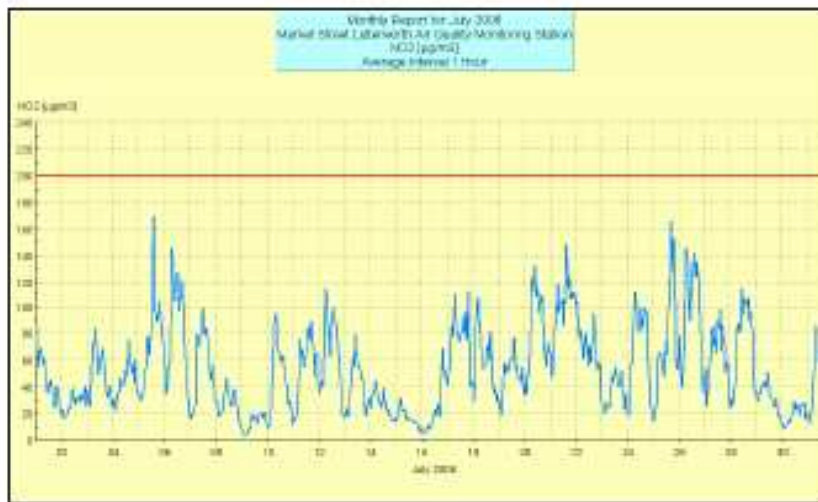
April



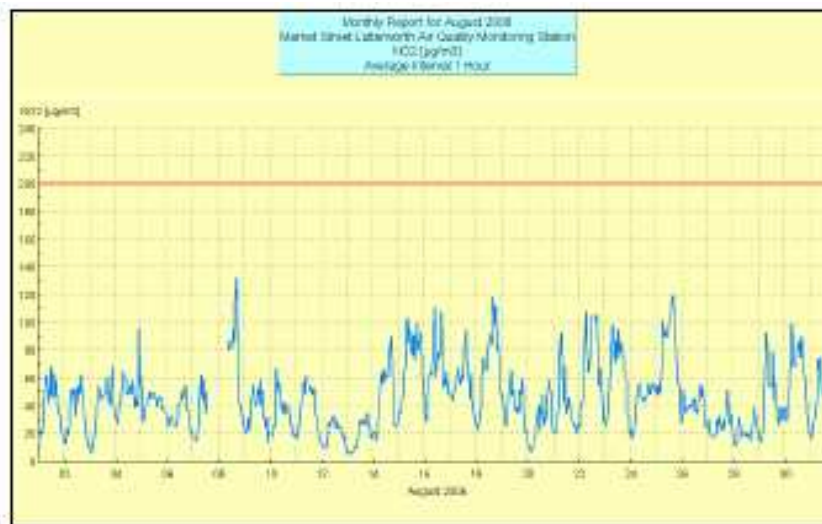
May



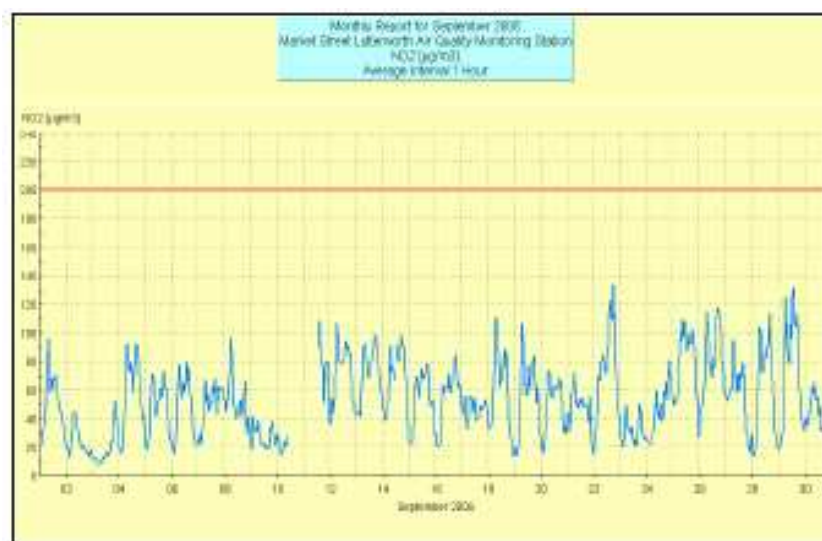
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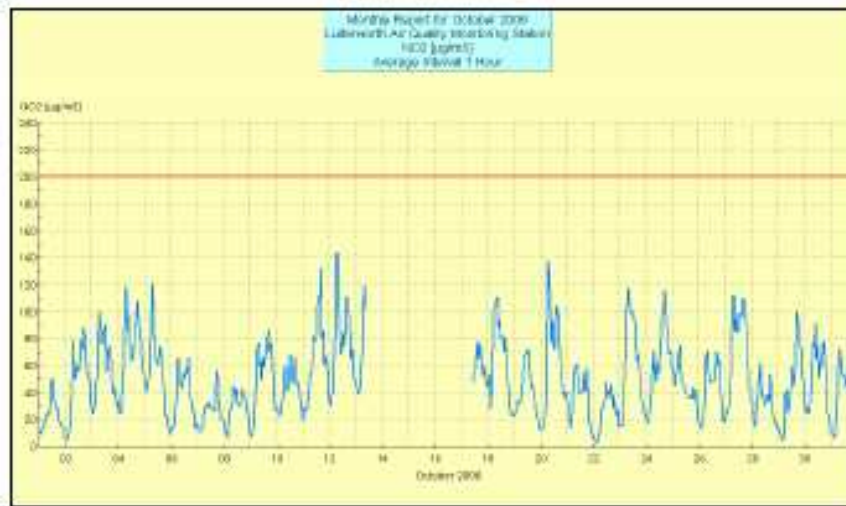
July



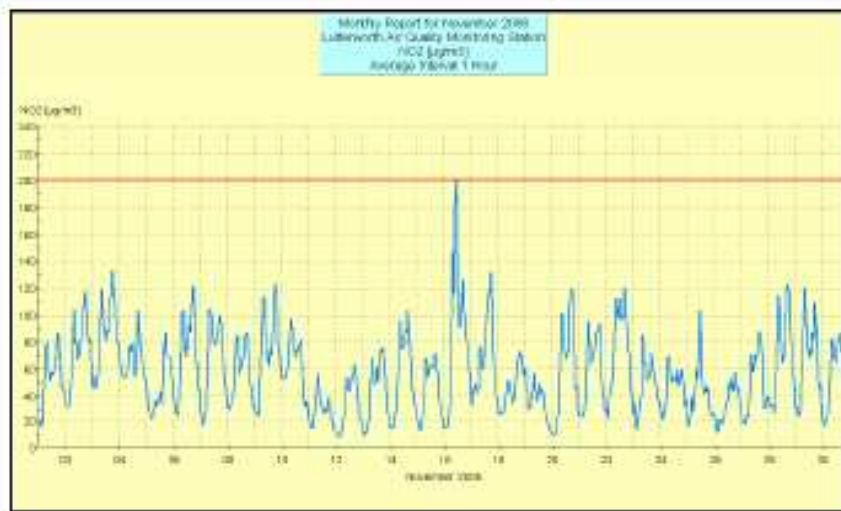
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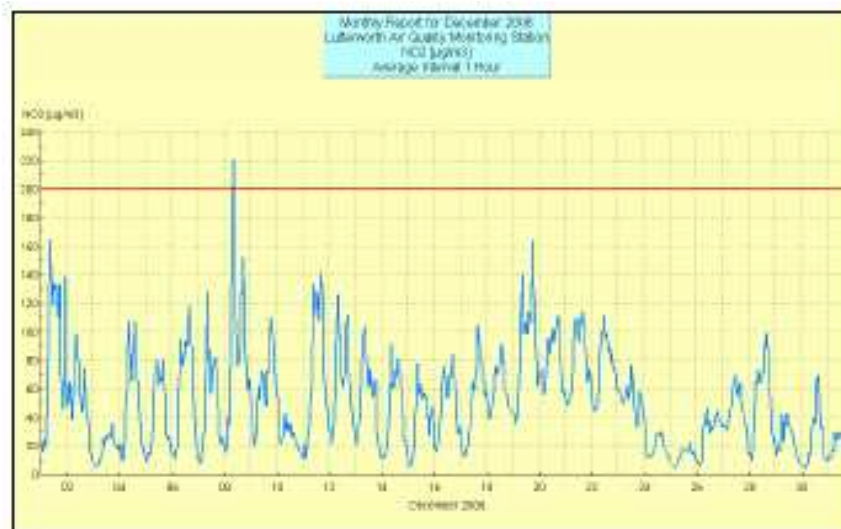
September



October

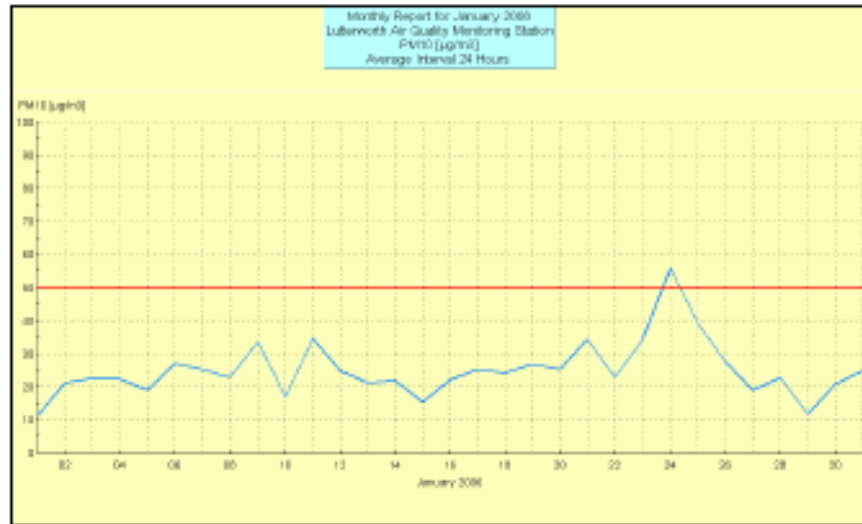


November

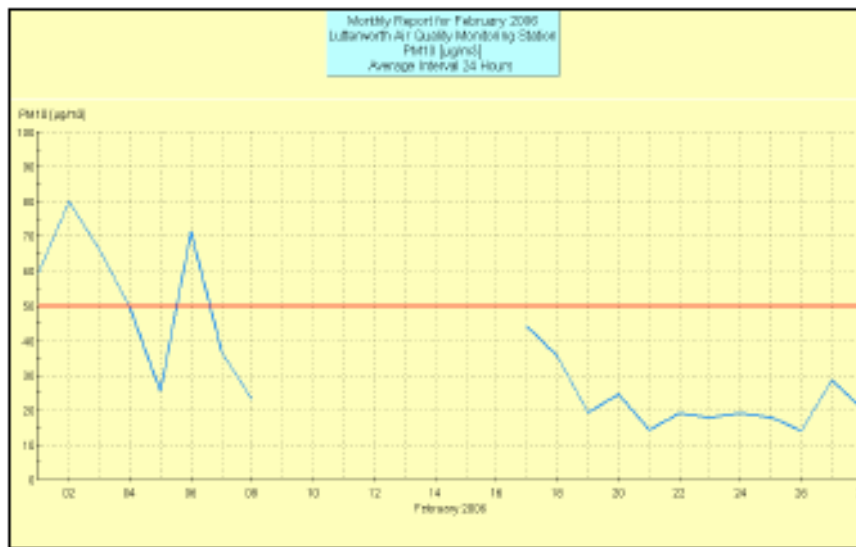


December

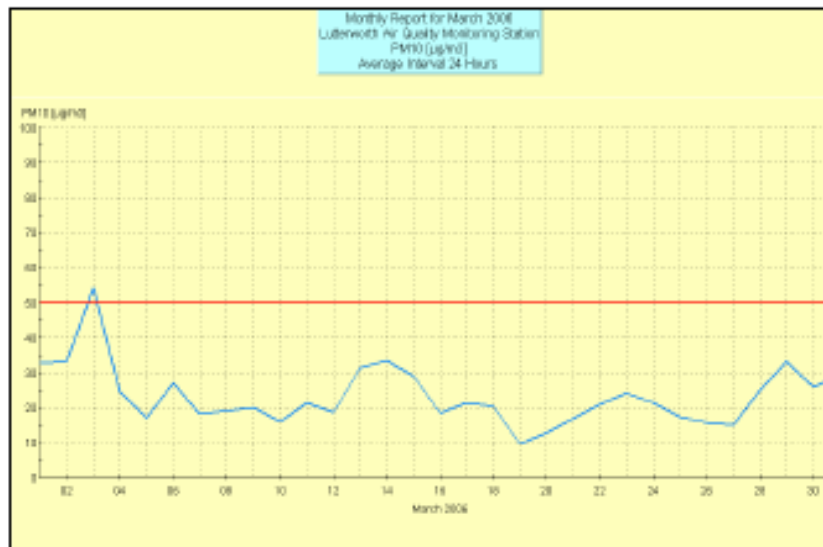
Particulates



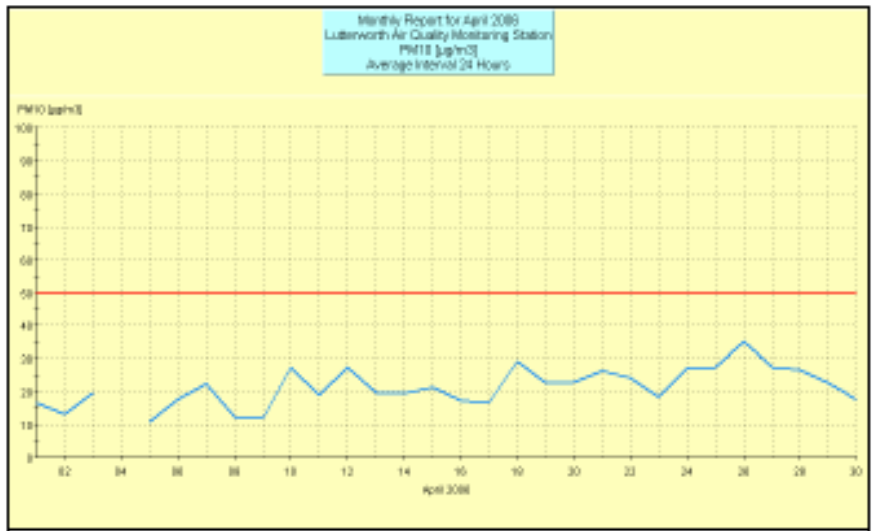
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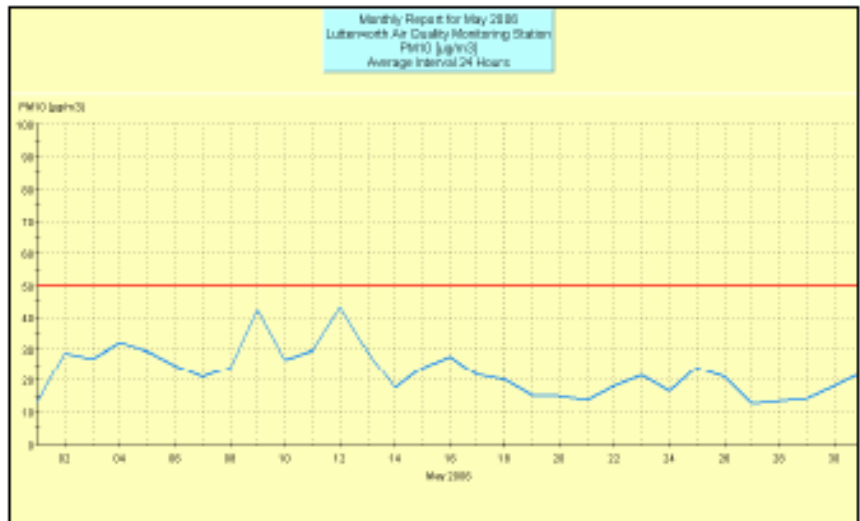
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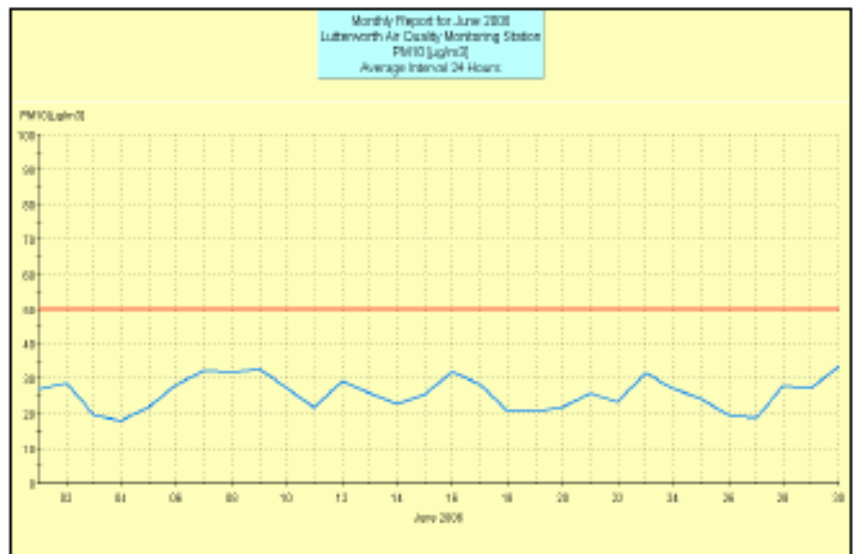
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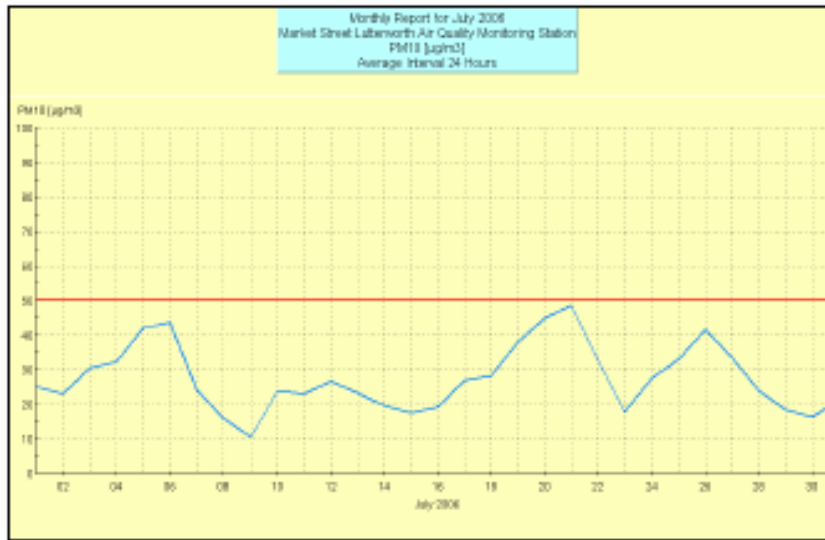
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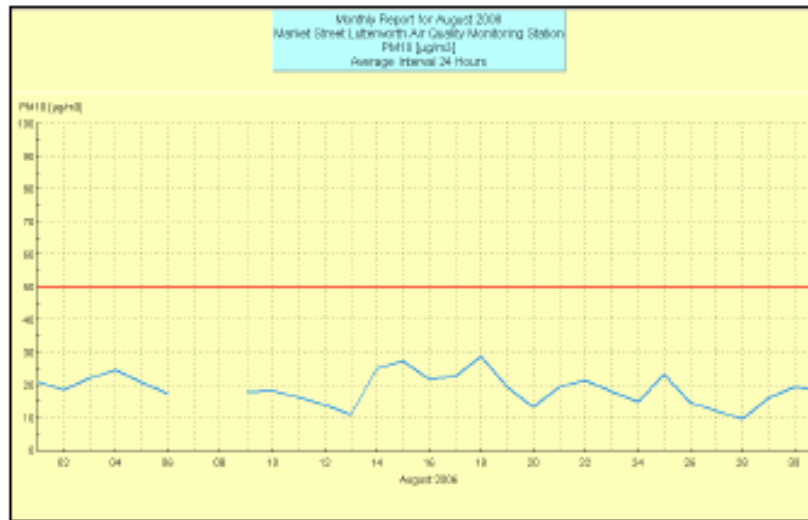
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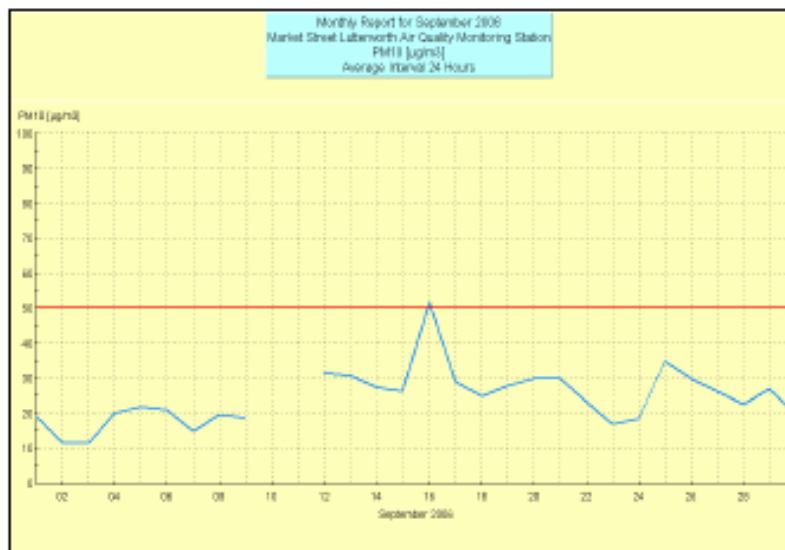
June



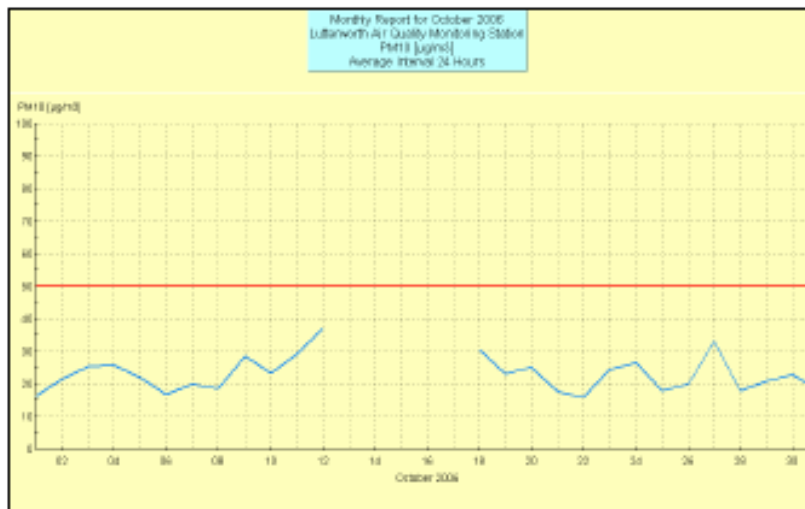
July



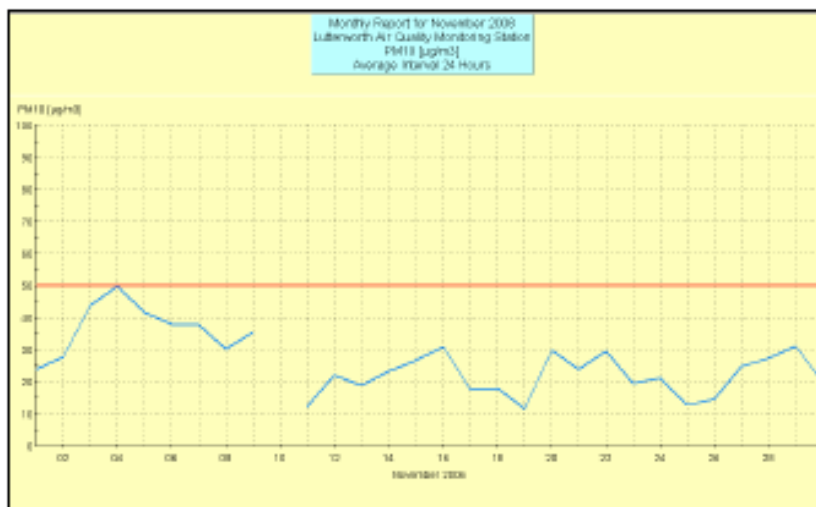
August



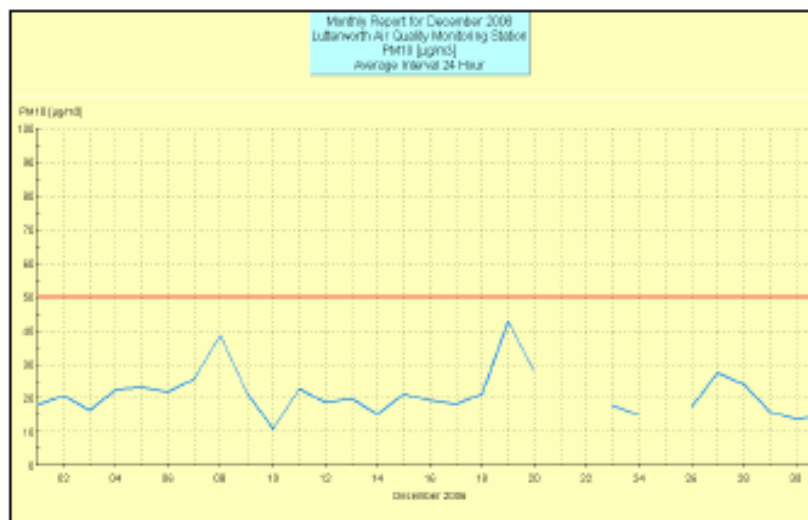
September



October



November



December

Appendix 2 – Action Plan Progress

Option description	Lead Authority	Original Time Frame	Progress to date	Comments
<p>1. Completion of Lutterworth Western Relief Road to divert traffic from the town centre</p>	<p>County Council</p>	<p>5 – 10 yrs</p>	<p>Harborough District Council appointed a consultant team to prepare an integrated Vision and Masterplan for Lutterworth Town Centre. The project has been managed by a partnership including Lutterworth Improvement Partnership; Lutterworth Chamber of Trade & Commerce; Lutterworth Town Council; Harborough District Council; and Leicestershire County Council. The Vision and Masterplan was published in August 2006 and sets out a framework for improvement in Lutterworth over the next 10 – 15 years. The strategic objectives of the document cover the economy of the area; activities and uses; the local environment and transport and access.</p>	<p>Due to the costs involved it is not anticipated that the Western Relief Road will be completed in the lifetime of the current Local Transport Plan. However a preliminary investigation will be carried out. A detailed traffic survey is due to be carried out summer 07 to consider the various options for by-passing traffic away from the town centre.</p>
<p>2. 7.5 tonne weight limit to divert lorries from A426 through the town centre.</p>	<p>County Council</p>	<p><2yrs</p>	<p>No out come to date.</p>	<p>Before a weight limit could be implemented in the Town Centre it would be necessary to identify an alternative route for HGV's. The existing road network would not be suitable and until an alternative is identified this action can not be considered feasible.</p>

<p>3. Lower emissions from district and it's contractor vehicle fleets</p>	<p>Harborough District</p>	<p>2 – 5 yrs</p>	<p>No out come to date</p>	<p>The District Council does not have its own fleet of vehicles however, two large contracts are due for renewal in 2007-08 and we are looking at the feasibility at incorporating the requirement of low emission vehicles as part of the new contract fleet.</p>
<p>4. Cleaner vehicles in town centre with Low Emission Zone</p>	<p>County Council</p>	<p>5 – 10 yrs</p>	<p>No out come to date</p>	<p>A Low Emission Zone would only allow access to the town centre by vehicles which meet the most recent emission standards. This would have severe implications for the goods vehicles and buses which currently provide for the essential needs of the town. Such a proposal would only become feasible in the long term when vehicles become less polluting.</p>
<p>5. Planning Controls to reduce traffic impact of new development on AQMA</p>	<p>Harborough District</p>	<p>0 -2 yrs</p>	<p>On going</p>	<p>Although green travel plans have been incorporated into to planning permission for some developments in Lutterworth, it does appear to be occurring on an ad hock basis. However within the Local Development Framework is will be necessary of any major development, residential or commercial, to carryout a Sustainability Appraisal as part of the planning application process. This will minimize the impact on any new major development will have on the air quality within the Air Quality Management Area.</p>

6. Road side emission testing of goods vehicles	VOSA	0 – 2 yrs	Pursuing with VOSA	
7. Work with bus companies to reduce bus emissions	County Council	0 – 2 yrs	Bus companies pass on good practice areas such as idling at bus stops as part of driver training, and the Quality Bus Partnerships offer the opportunity to keep operators aware of concerns in this area	On going awareness of air quality issues by bus operators and their drivers
8. Network management for road works, incidents and planned events	County Council	0 – 2 yrs		
9. School travel planning with investment in walking and cycle routes	County Council	0 – 2 yrs		
10. Smarter Choices and promotion building on working travel plans	County Council	0 – 2 yrs	<p>The Lutterworth Cycling Network Working Group as part of the Lutterworth Improvement Partnership has developed a Cycling Network Plan which shows existing cycle routes and identifies other possible layouts for routes in Lutterworth. The group will continue to work with the County Council, District Council and Sustrans to identify funding sources for the implementation of the plan.</p> <p>To encourage cycle use in the town, a cycle park has been installed at the Lutterworth One-</p>	Harborough District Council is taking part in “Bike to Work Week” in June.

			Stop-Shop.	
11. Better vehicle use of roadspace for less disruption to free flowing traffic	County Council	0 – 2 yrs		With the transfer of parking restrictions to the local authority, the increased number of traffic wardens in the district may result in fewer vehicles illegally parking, causing an obstruction and disrupting the free flow of traffic.
12. Land use planning for no unnecessary additional traffic through town centre.	Harborough District	0 – 2 yrs	On going	The Local Development Framework will require all major developments to under take a Sustainability Appraisal as part of the planning process to minimize the impact on land use development.