



# CHEL TENHAM

## BOROUGH COUNCIL

# **Air Quality Action Plan**

In fulfillment of Part IV of the  
Environment Act 1995  
Local Air Quality Management

**April 2014**

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# Executive Summary

Cheltenham Borough Council has produced this Air Quality Action Plan in accordance with its statutory duties under the Environment Act 1995 and following the designation of the Borough as an Air Quality Management Area (AQMA) in 2011.

The AQMA was declared because five separate locations in Cheltenham did not meet the government's health based limit for the air pollutant nitrogen dioxide. Nitrogen dioxide is a gas formed from fossil fuel combustion. It comes from some industrial processes, but mostly from road traffic exhaust emissions. Studies on the effects of nitrogen dioxide and particulates on human health have linked it with various respiratory illnesses, cardiovascular disease and the aggravation of existing lung conditions, such as asthma. Poor air quality impacts on health of the whole population and it is calculated to cause the premature death of 29,000 people per year in the UK.

This Action Plan lays out a number of actions that if implemented could have a positive impact on air quality within Cheltenham. Implementation of the proposed actions will require effective engagement with key partners both within and external to the council and identification of suitable resource. Such partners include Planning and Development Control, Gloucestershire Highways and Gloucestershire County Council.

This document aims to identify actions that will improve existing air quality whilst linking air quality considerations to wider policy to ensure that any potential air quality impacts of future traffic growth and development are minimised.

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# 1 Introduction

## 1.1 Purpose of Report

This report sets out a number of proposed measures to improve air quality within the Cheltenham Air Quality Management Area (AQMA). It forms part of the requirements of the Local Air Quality Management review and assessment process as set out in Part IV of the Environment Act (1995). The boundary of the AQMA is shown in Figure 1.1 and was declared due a number of locations across the town exceeding the annual mean nitrogen dioxide objective (see Section 1.3). This '**objective**' is a national measure of air quality and where this is not being met, the local authority must prepare and implement a remedial Action Plan to improve air quality in their area and work towards achieving the objective.

## 1.2 Background to Air Quality management

Poor air quality reduces life expectancy in the UK by an average of seven to eight months with estimated health costs of up to £20 billion per year. The UK Air Quality Strategy was developed to bring these figures down through the effective implementation of measures to improve air quality. It is also recognised that measures to improve air quality will often also have co-benefits such as reducing greenhouse gas emissions and noise pollution.

Part IV of the Environment Act 1995 requires local authorities to periodically review and assess air quality in their areas. The role of this process is to identify areas where air quality is poor and where objectives are not being met. Where this occurs, these locations must be designated as AQMA's and a subsequent Action Plan developed in order to reduce pollution emissions at these locations. As part of this process the council must calculate the likely sources of the pollution and the magnitude of reduction in emissions required to achieve an objective. This information is then used to inform the Air Quality Action Plan.

### 1.3 Air Quality Objectives

The air quality objectives applicable to local air quality management (LAQM) in England are set out in the Air Quality (England) Regulations 2000 and the Air Quality (England) (Amendment) Regulations 2002. Table 1.1 below shows the objectives for nitrogen dioxide in units of microgrammes per cubic metre  $\mu\text{g}/\text{m}^3$  with the number of exceedences in each year that are permitted.

**Table 1.1 Air Quality Objectives for Nitrogen Dioxide**

Pollutant	Air Quality Objective		Date to be achieved by
	Concentration	Measured as	
Nitrogen dioxide	200 $\mu\text{g}/\text{m}^3$ not to be exceeded more than 18 times a year	1-hour mean	31.12.2005
	40 $\mu\text{g}/\text{m}^3$	Annual mean	31.12.2005

The air quality objectives only apply where members of the public are likely to be regularly present for the averaging time of the objective (i.e. where people will be exposed to pollutants). For annual mean objectives, relevant exposure is limited to residential properties, schools and hospitals. The 1-hour objective applies at these locations, as well as at any outdoor location where a member of the public might reasonably be expected to stay for 1 hour or more, such as shopping streets, parks and sports grounds, as well as bus stations and railway stations that are not fully enclosed. Measurements across the UK have shown that the 1-hour nitrogen dioxide objective is unlikely to be exceeded unless the annual mean nitrogen dioxide concentration is greater than 60  $\mu\text{g}/\text{m}^3$ . In Cheltenham there are no locations that exceed 60 $\mu\text{g}/\text{m}^3$  as an annual mean, so the 1-hour nitrogen dioxide objective is not relevant. The objective that needs to be met in Cheltenham is the annual mean objective for nitrogen dioxide of 40 $\mu\text{g}/\text{m}^3$ .

## **1.4 Scope of Action Plan**

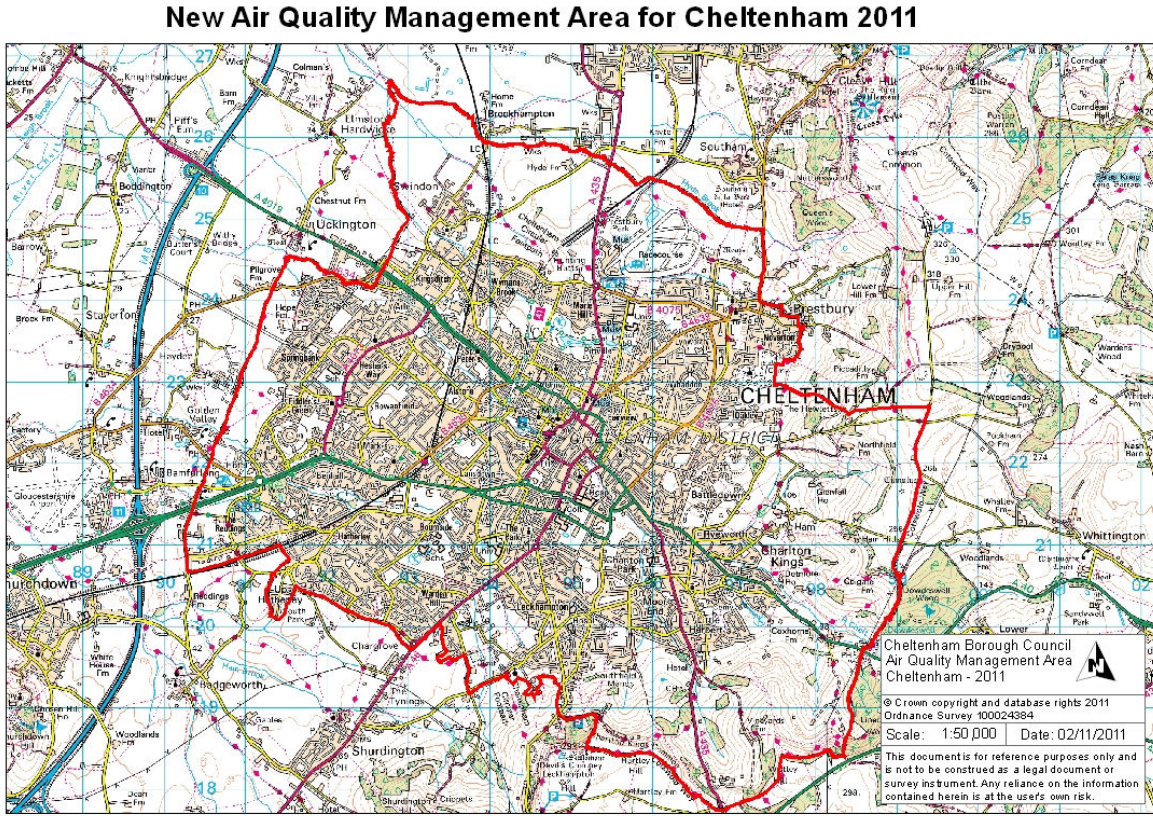
The main aim of the Action Plan is to deliver improved air quality across the Borough of Cheltenham and specifically in those areas that currently do not meet the air quality objective for nitrogen dioxide. The scope of the plan will therefore be;

- to confirm the extent of the problem and amount of air quality improvement required at each location;
- to refine knowledge of the sources of pollution so that the air quality action plan can be properly targeted;
- to take account, as far as possible, of any local policy developments that are likely to affect air quality in the future.
- to identify the most effective measures that could be implemented to reduce pollution levels at the key locations where air quality is not meeting national objective limits.
- to take into account and respond to any comments made by consultees in respect of this draft plan before agreeing on the final list of measures to be implemented. This has been carried out and this plan has now been amended and is presented as a final approved version.

# 2 AQMA Location

The Cheltenham AQMA comprises the entire Borough area due to the number of separate locations where exceedance of nitrogen dioxide was measured (7 locations in 2010, 5 locations in 2011 & 2012). It was therefore deemed appropriate to utilise the whole Borough boundary to avoid having to declare numerous separate AQMA's and also to prevent the possibility of simply shifting the air quality problem elsewhere with implementation of any localised Action Plan measures.

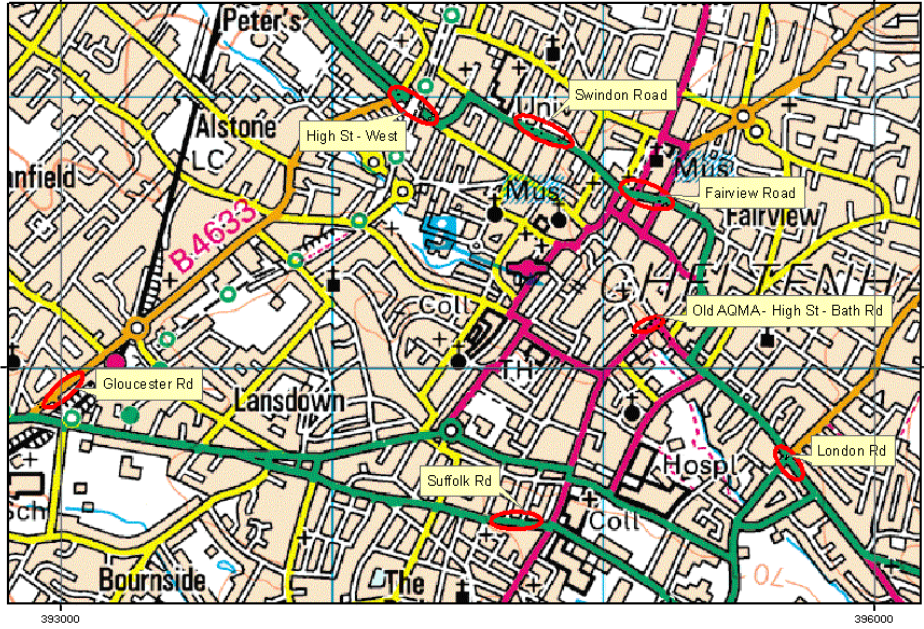
Figure 2.1 Map of current AQMA Boundary





**Figure 2.2 Areas where exceedance of the NO<sub>2</sub> annual mean occurred in 2010 and 2011**

**Areas of NO<sub>2</sub> exceedance in Cheltenham measured in 2010**



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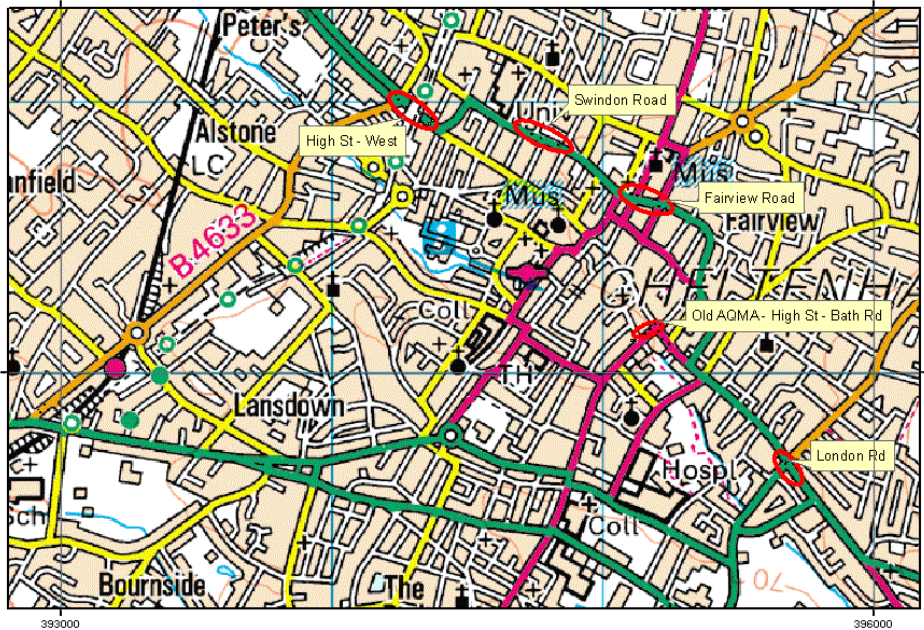
**CHEL TENHAM**  
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0 187.5 375 750 M

**Legend**

Contaminated Land Officer 2012

**Areas of NO<sub>2</sub> exceedance in Cheltenham measured in 2011**



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0 187.5 375 750 M

**Legend**

Contaminated Land Officer 2012

## **3 Air Quality Management in Cheltenham**

In Cheltenham, the council has been carrying out air quality monitoring for a number of years and producing air quality reports in accordance with its duties under Part IV of the Environment Act (1995). Annual reports are submitted to the Department of Environment, Food and Rural Affairs (DEFRA). These reports, together with annual monitoring data, are available to view on our website [www.cheltenham.gov.uk](http://www.cheltenham.gov.uk)

### **3.1 Roadside monitoring**

Cheltenham Borough Council carries out automatic monitoring of nitrogen dioxide at the junction of Swindon Road and St Georges Street where exceedance of nitrogen dioxide (annual mean) had been recorded nearby. The unit measures NO<sub>x</sub>, NO<sub>2</sub> and NO. During 2012 the unit recorded an annual mean nitrogen dioxide level of 37ug/m<sup>3</sup> with no exceedances of the hourly mean for nitrogen dioxide.

### **3.2 Diffusion tube monitoring**

Cheltenham Borough Council also undertakes monitoring for nitrogen dioxide using diffusion tubes at a number of locations across the town. Many of the monitoring locations have been consistently below the annual mean objective limit for nitrogen dioxide (40ug/m<sup>3</sup>). Following a review at the beginning of 2010, new monitoring locations were added where there are known residential dwellings next to busy roads. Some of these locations indicated exceedance of the nitrogen dioxide (annual mean) objective of 40ug/m<sup>3</sup> which resulted in declaration of the AQMA in 2011.

Monitoring during 2011 and 2012 confirmed nitrogen dioxide exceedance levels at 11 separate monitoring locations. These monitoring locations correspond to five distinct areas within Cheltenham. These areas are listed below and are described as;

Location 1: High Street - Bath Road

Location 2: Swindon Road – St Georges Street Junction

Location 3: Fairview Road – Winchcombe Street junction

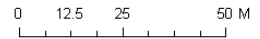
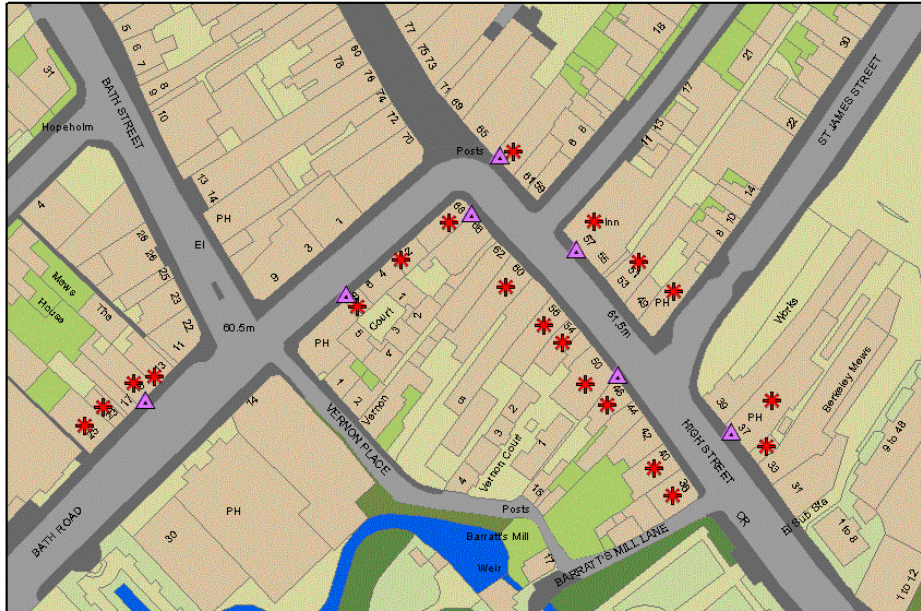
Location 4: London Road – Hales road junction

Location 5: High Street (western end) – junction with Gloucester Road

These areas are identified in the following plans;

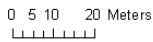
**Figure 3.1 Maps of five areas where exceedance of the nitrogen dioxide (annual mean) has been recorded**

**High Street - Bath Road air pollution area**



**Legend**

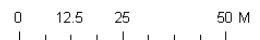
- NO2\_Monitoring Locations
- Residential Exposure



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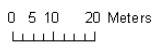
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**Swindon Road - St Georges Street air pollution area**



**Legend**

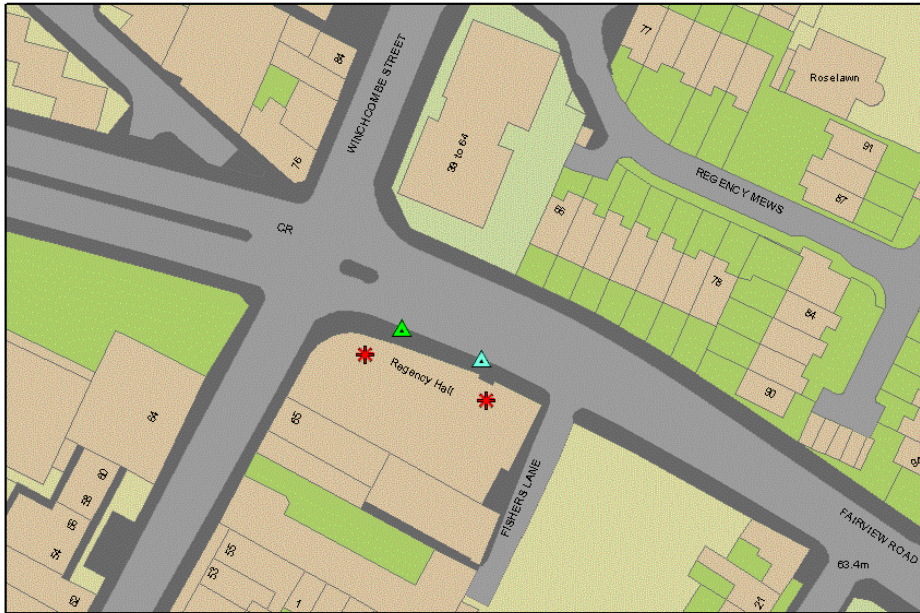
- NO2\_2012\_NewLocations
- NO2\_2011\_TubeLocations
- NO2\_2010\_TubeLocations
- Residential Exposure



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### Fairview Road - Winchcombe Street air pollution area



0 5 10 20 M

#### Legend

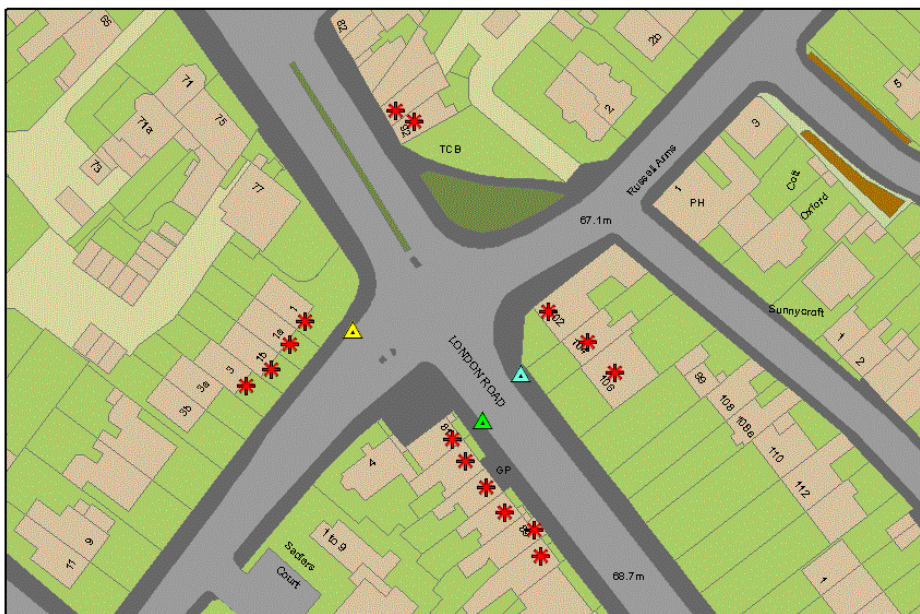
- ▲ NO2\_2011\_TubeLocations
- ▲ NO2\_2010\_TubeLocations
- ✱ Residential Exposure

0 3.75 7.5 15 Meters

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### London Road - Hales Road air pollution area



0 5 10 20 M

#### Legend

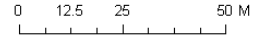
- ▲ NO2\_2012\_NewLocations
- ▲ NO2\_2011\_TubeLocations
- ▲ NO2\_2010\_TubeLocations
- ✱ Residential Exposure

0 3.75 7.5 15 Meters

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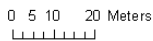
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### High Street - Gloucester Road air pollution area



#### Legend

- NO2\_2011\_TubeLocations
- NO2\_2010\_TubeLocations
- Residential Exposure



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## 3.3 Monitoring data

During 2011, Cheltenham Borough Council monitored 40 nitrogen dioxide diffusion tube locations across the Borough. Further monitoring tubes were added to the monitoring network at the beginning of 2011 to enable more detailed assessment of locations where elevated levels of nitrogen dioxide were identified during 2010. These were the subject of detailed assessment towards the end of 2011 and justified the decision to declare a new AQMA for Cheltenham to cover the Borough area.

### Automatic Monitoring Data

In 2011 Cheltenham Borough Council decided that the installation of a roadside monitoring box would be useful to help confirm elevated levels of nitrogen dioxide measured in the area from diffusion tubes. The location of the roadside monitoring box was selected on the basis of relevant exposure being present and proximity to nearby diffusion tube monitoring points, where elevated levels of nitrogen dioxide had been recorded. It was located at the junction of Swindon Road and St George's Street where traffic congestion is a problem.

Results obtained indicate mean annual nitrogen dioxide at the unit is below the national objective and measured 37ug/m<sup>3</sup> for 2012.

**Table 3.1 Table showing data from roadside air quality monitoring unit**

### Air Quality Statistics

Pollutant	NO <sub>2</sub>	NO	NO <sub>x</sub>
Number Very High #	0	-	-
Number High #	0	-	-
Number Moderate #	0	-	-
Number Low #	8765	-	-
Maximum 15-minute mean	185 µg m <sup>-3</sup>	435 µg m <sup>-3</sup>	806 µg m <sup>-3</sup>
Maximum hourly mean	141 µg m <sup>-3</sup>	321 µg m <sup>-3</sup>	621 µg m <sup>-3</sup>
Maximum running 8-hour mean	114 µg m <sup>-3</sup>	233 µg m <sup>-3</sup>	454 µg m <sup>-3</sup>
Maximum running 24-hour mean	90 µg m <sup>-3</sup>	150 µg m <sup>-3</sup>	304 µg m <sup>-3</sup>
Maximum daily mean	88 µg m <sup>-3</sup>	132 µg m <sup>-3</sup>	282 µg m <sup>-3</sup>
Average	37 µg m <sup>-3</sup>	26 µg m <sup>-3</sup>	77 µg m <sup>-3</sup>
Data capture	99.8 %	99.8 %	99.8 %

# Daily Air Quality Index (DAQI) as defined by COMEAP 1st January 2012  
 Mass units for the gases are at 20°C and 1013mb  
 NO<sub>x</sub> mass units are NO<sub>x</sub> as NO<sub>2</sub> µg m<sup>-3</sup>

### Air Quality Exceedences

Pollutant	Air Quality (England) Regulations 2000 & (Amendment) Regulations 2002	Max Conc	Number	Days	Allowed	Exceeded
Nitrogen Dioxide	Annual mean > 40 µg m <sup>-3</sup>	37 µg m <sup>-3</sup>	0	-	-	No
Nitrogen Dioxide	Hourly mean > 200 µg m <sup>-3</sup>	141 µg m <sup>-3</sup>	0	0	18 hours	No

## Diffusion Tube Monitoring Data

The results for monitoring during 2012 are identified in Table 4.2 below. In all cases, data are bias adjusted using the adjustment factor of 0.99 obtained from the triplicate co-location study at the roadside air quality monitoring station on St George's Street/Swindon Road junction.

The results indicate that the annual mean nitrogen dioxide objective is being exceeded at 11 locations although these correspond to five distinct areas where relevant exposure exists as illustrated in Fig 3.1.

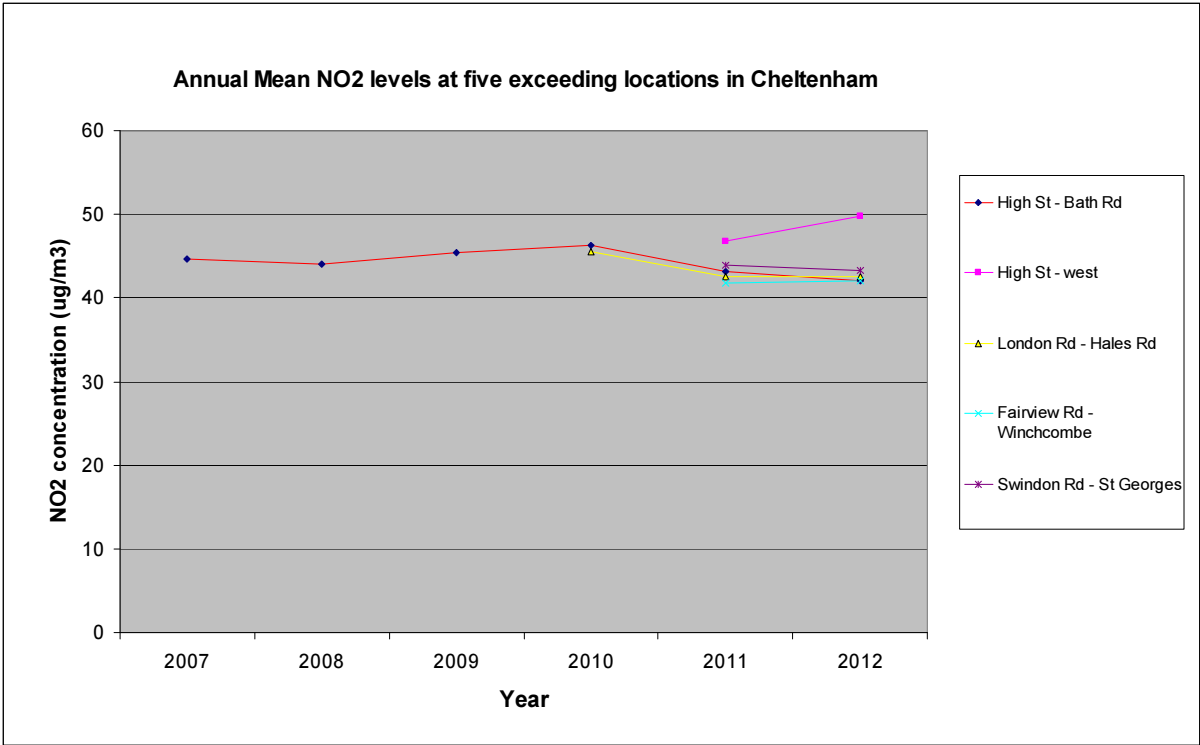
**Table 3.2** Results of Nitrogen Dioxide Diffusion Tubes in 2012

Site ID	Location	Site Type	Annual mean concentration (Bias Adjustment factor = 0.99) 2012 ( $\mu\text{g}/\text{m}^3$ )	Relevant exposure
1	Westal Green	Roadside	31.4	Yes
2	179 Bath Road	Roadside	30.8	Yes
3	51 Upper Norwood	Background	18.8	Yes
4	56 Church Road	Roadside	22.4	Yes
5	81 London Road	Roadside	<b>42.5</b>	Yes
6	104 London Road	Roadside	39.0	Yes
7	1 Bath Road	Roadside	39.4	Yes
8	17 Chelsea Close	Background	17.0	Yes
9	Prestbury Post Office	Roadside	35.5	Yes
10	91Tewkesbury Road	Roadside	31.0	Yes
11	124 Gloucester Road	Roadside	30.5	Yes
12	264 Gloucester Road	Roadside	37.1	Yes
13	338 Gloucester Road	Roadside	37.2	Yes
14	340 Gloucester Road	Roadside	39.6	Yes
15	Miserden Road	Roadside	27.7	Yes
16	P.E. Roundabout	Roadside	28.7	Yes
17	Telstar Road GCHQ	Kerbside	35.4	Yes
18	233 Hatherley Rd	Roadside	28.3	Yes
19	7 Suffolk Road	Roadside	31.6	Yes

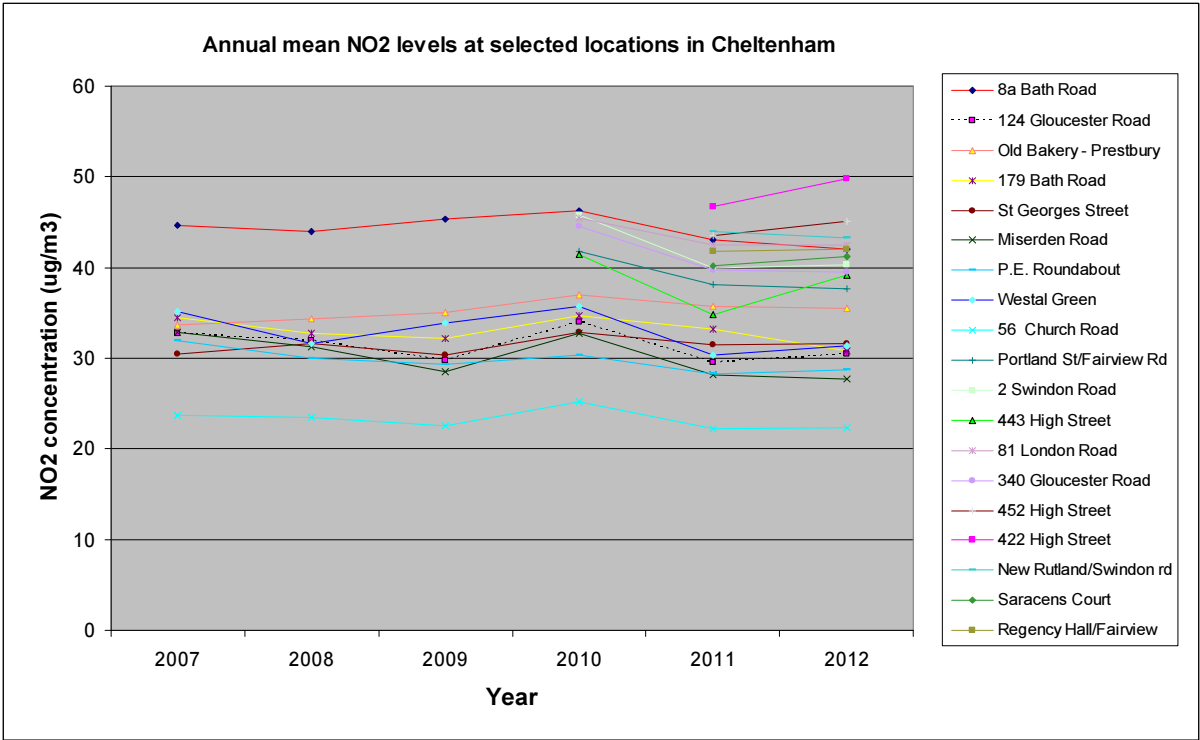
Site ID	Location	Site Type	Annual mean concentration (Bias Adjustment factor = 0.99) 2012 ( $\mu\text{g}/\text{m}^3$ )	Relevant exposure
20	St Georges Street	Kerbside	31.6	Yes
21	2 Gloucester Road	Roadside	35.9	Yes
22	Opposite White Hart Street	Roadside	<b>44.3</b>	Yes
23	452 High Street	Roadside	<b>45.1</b>	Yes
24	443 High Street	Roadside	39.1	Yes
25	422 High Street	Roadside	<b>49.8</b>	Yes
26	Church Hill Court	Roadside	30.4	Yes
27	New Rutland - Swindon Rd	Roadside	<b>43.3</b>	Yes
28	Saracens Court	Roadside	<b>41.3</b>	Yes
29	2 Swindon Road	Kerbside	<b>40.3</b>	Yes
30	North Place West	Urbancentre	27.8	No
31	5 St Margaret's Terrace	Roadside	35.2	Yes
32	North Place East	Roadside	33.0	No
33	Portland St/Fairview Rd	Roadside	37.7	Yes
34	Millenium Plaza - Fairview	Kerbside	33.5	Yes
35	Winchcombe St/Fairview	Roadside	37.7	Yes
36	Regency Hall - Fairview	Roadside	<b>42.0</b>	Yes
37	7 Berkeley Place	Roadside	31.3	Yes
38	1 Hewlett Road	Roadside	<b>40.3</b>	Yes
39	The Swan	Roadside	30.8	Yes
40	Pisa Pizza	Roadside	33.1	Yes
41	The Restoration	Roadside	<b>40.5</b>	Yes
42	YMCA Shop	Roadside	38.0	Yes
43	Cutting Room	Roadside	37.9	Yes
44	8a Bath Road	Roadside	<b>42.0</b>	Yes
45	15a Bath Road	Roadside	35.0	Yes
46	Co-location – St Georges Street	Roadside	34.5	Yes
47	Co-location – St Georges Street	Roadside	35.0	Yes
48	Co-location – St Georges Street	Roadside	34.7	Yes



**Figure 3.2 Levels of nitrogen dioxide at five locations that are in exceedance of the annual mean objective in Cheltenham**



**Figure 3.3 Levels of nitrogen dioxide at various locations in Cheltenham**



## 4 Local Sustainable Transport Fund

Since declaration of the AQMA in November 2011, Gloucestershire County Council has been successful in obtaining significant funding from Government to implement transport related measures to encourage sustainable transport and modal shift within the county. Modal shift is the movement away from using one particular form of transport to another. In the case of Gloucestershire and Cheltenham in particular, the overriding aim is to encourage more sustainable travel choice through movement away from single occupancy private vehicle use to public transport, cycling and walking. This is to be achieved through the implementation of a number of schemes that are identified under the local sustainable transport fund (LSTF) project plan.

Further details of the LSTF project plan can be obtained at

[www.gloucestershire.gov.uk/lstf](http://www.gloucestershire.gov.uk/lstf)

Many of the schemes planned for Cheltenham under the LSTF project are in the process of being implemented. Where a reduction in vehicle use occurs there is likely to be a corresponding positive impact on air quality. Some modelling has been carried out to assess the effect on traffic flow with implementation of the LSTF transport proposals for Cheltenham. This suggests that some of the locations that currently have poor air quality should show some reduction in traffic flow following implementation, which should equate to an improvement in air quality. Therefore this Action Plan has incorporated several of the LSTF schemes within the list of proposed Air Quality actions. For a more thorough run down of all the LSTF schemes, please visit [www.thinktravel.info](http://www.thinktravel.info)

## 5 Source Apportionment

In Cheltenham it is known that the majority of nitrogen dioxide pollution (95%) comes from vehicle emissions. In order to develop an appropriate Action Plan it is necessary to identify the main local traffic type contributing to air pollution to inform any future traffic management decisions. Table 5.1 contains data on traffic related sources apportioned to the following categories;

- Cars
- Light goods vehicles
- Heavy goods vehicles
- Buses
- Motorcycles (2WMMV)

The five locations identified in Table 5.1 are those locations where nitrogen dioxide levels were locally in exceedance at one or more monitoring locations in the area and reflect those areas identified in Fig. 2.2.

### The locations are;

Location 1: High Street - Bath Road

Location 2: Swindon Road – St Georges Street Junction

Location 3: Fairview Road – Winchcombe Street junction

Location 4: London Road – Hales road junction

Location 5: High Street (western end) – junction with Gloucester Road

**Table 5.1 Annual Mean Nitrogen Dioxide concentrations in exceedance areas and the contribution of each traffic source type to the total monitored value.**

Location	Annual Mean Concentration of NO <sub>2</sub> (ug/m <sup>3</sup> ) - 2011						
	Background <sup>#</sup>	Cars	LGV's	HGV's	Buses	2WMMV	TOTAL
1*	19.91	12.16	4.76	4.73	4.65	0.08	<b>46.3</b>
2	20.33	11.49	3.65	6.27	2.24	0.02	<b>44.0</b>
3	20.33	9.33	3.48	6.63	2.01	0.03	<b>41.8</b>
4*	16.36	11.47	4.49	6.60	6.50	0.08	<b>45.5</b>
5	19.25	8.81	3.08	6.26	6.03	0.07	<b>43.5</b>

\* using traffic count data & monitoring data from 2010

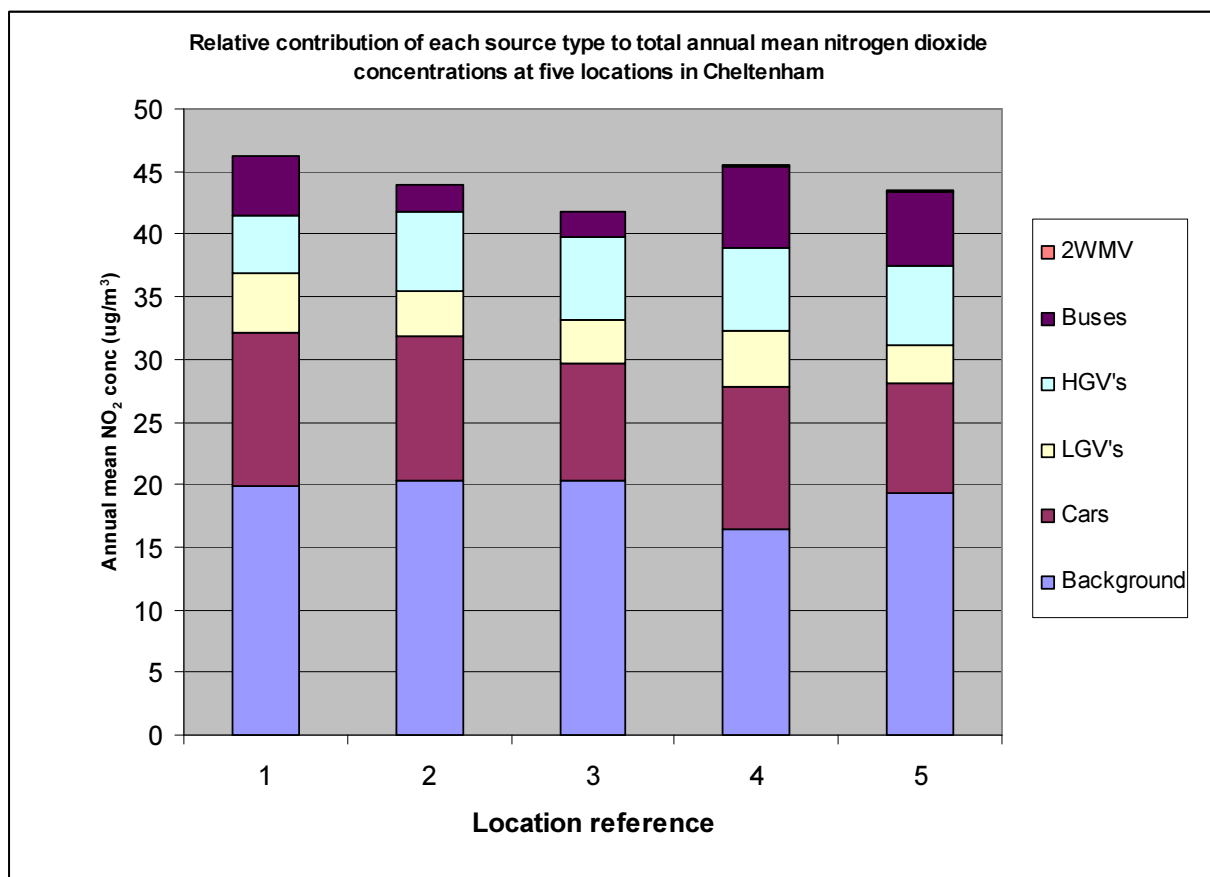
<sup>#</sup> Background levels are those calculated by DEFRA – and are mainly traffic derived sources of pollution.

Location	Percentage contribution of NO2 to total - 2011						
	Background <sup>#</sup>	Cars	LGV's	HGV's	Buses	2WMMV	TOTAL
1*	43.01	26.27	10.28	10.21	10.05	0.18	<b>100</b>
2	46.20	26.12	8.30	14.25	5.09	0.04	<b>100</b>
3	48.63	22.32	8.32	15.85	4.80	0.07	<b>100</b>
4*	35.97	25.21	9.87	14.50	14.28	0.17	<b>100</b>
5	44.25	20.25	7.09	14.40	13.85	0.16	<b>100</b>

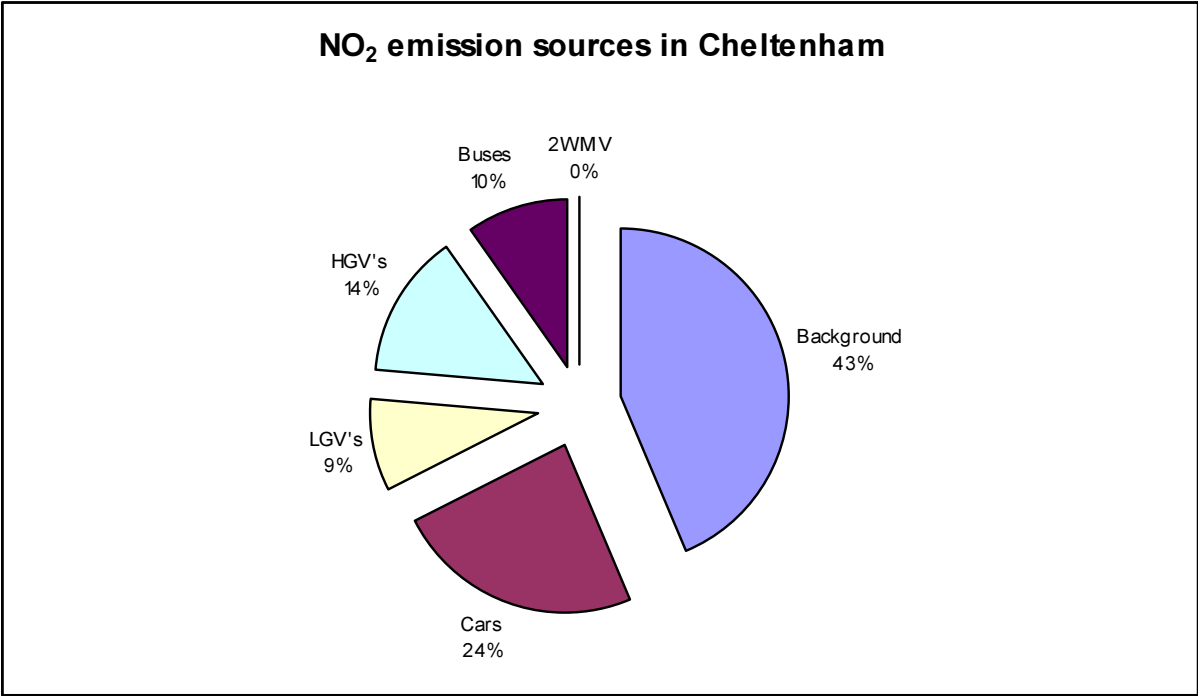
\* using traffic count data & monitoring data from 2010

<sup>#</sup> Background levels are those calculated by DEFRA – and is mainly a traffic derived source of pollution.

**Figure 5.1 Relative contribution of each traffic source to the monitored annual mean concentrations of nitrogen dioxide ( $\mu\text{g}/\text{m}^3$ ) at five exceeding locations in Cheltenham**



**Figure 5.2 Average percentage contribution to NO<sub>2</sub> pollution by vehicle class**



## 6 Air Quality Improvements Required

The degree of air quality improvement needed in order for the annual mean objective for nitrogen dioxide to be achieved is defined by the difference between the highest monitored concentration and the objective level (40 ug/m<sup>3</sup>) at each location where exceedance of the objective has occurred. Taking account of local background levels of pollution, it is clear that to meet the nitrogen dioxide objective levels in Cheltenham will require significant reductions in traffic generated NO<sub>2</sub>.

**Table 6.1** Required reduction in traffic NO<sub>2</sub> (%) at each location in Cheltenham exceeding the nitrogen dioxide annual mean objective

Location	Monitored annual mean concentration of NO <sub>2</sub> (ug/m <sup>3</sup> )	Required reduction in annual mean NO <sub>2</sub> concentration (ug/m <sup>3</sup> )	Percentage reduction in traffic generated NO <sub>2</sub> required (%)
1	<b>46.3</b>	6.3	24
2	<b>44.0</b>	4.0	17
3	<b>41.8</b>	1.8	8
4	<b>45.5</b>	5.5	19
5	<b>43.5</b>	3.5	14

The contribution to total nitrogen dioxide levels varies according to vehicle type and proportionately HGV's, Buses and LGV's emit more nitrogen dioxide than cars and motorcycles for any given distance travelled per vehicle. However as can be seen in Figure 5.2, the relative contribution of nitrogen dioxide from each vehicle type shows that cars are still the largest contributor to overall traffic generated NO<sub>2</sub> levels due to the high numbers of cars measured during traffic count surveys.

This source data immediately suggests a significant reduction in traffic volume would be required to meet the nitrogen dioxide objective limits. However there are other solutions which can assist to reduce the amount of NO<sub>2</sub> emitted by vehicles other than just reducing vehicle numbers. Traffic management measures that improve vehicle flow and reduce vehicle waiting times and congestion can also help to reduce emissions.

## 7 Proposed Measures

In Cheltenham, vehicle pollution concentrations are influenced by vehicle volume and vehicle flow patterns including acceleration, braking and queuing. Action Plan measures are likely to include traffic management measures to reduce these flow problems together with measures that help to reduce the overall volume of vehicles using the road network.

Taking into account the relative contribution to nitrogen dioxide levels of each vehicle type, targeting a specific vehicle type is unlikely to have the desired impact of reducing nitrogen dioxide levels below the objective level. It is instead considered that an overall traffic management approach would be more beneficial due to the relatively significant contribution of each vehicle type to traffic generated nitrogen dioxide levels (with the exception of motorcycles).

As can be seen in Table 6.1, the largest reduction in vehicle generated NO<sub>2</sub> is required at Location 1, the High Street and Bath Road area. The other areas currently not meeting the air quality objective also require significant reduction but the overall requirement is somewhat less.

In terms of vehicle reduction at Location 1, the 24% reduction in traffic generated NO<sub>2</sub> required to comply with the annual mean objective (40ug/m<sup>3</sup>) can broadly be equated to a reduction in vehicle numbers of approximately 24% across the board. However this is a very blunt way of looking at the problem and this reduction is very unlikely to be achieved in the short term. Options to improve vehicle flow patterns, to reduce the amount of accelerating, braking and queuing, can also help to reduce emissions and contribute to meeting the annual mean air quality objective.

## **THE PROPOSED MEASURES**

Cheltenham Borough Council in conjunction with the Gloucestershire County Council and the Local Sustainable Transport Fund (LSTF) team has produced a list of potential measures that should help to reduce air pollution within the Borough. The first 11 measures identified below are due to be delivered through the Cheltenham Transport Plan and associated smarter travel initiatives funded by the LSTF.

### **1. Highway improvements**

A range of highway amendments are planned, subject to traffic regulation orders, to improve traffic flow and improve cycle and pedestrian provision within Cheltenham. It is proposed to allow 2-way traffic at certain junctions in town to break the stranglehold of the ring-road and allow easier access to car parks at point of entry to the town. These changes will allow the removal of through traffic at Boots Corner although it will remain open for buses. There will be a period of air monitoring to assess the impact of this measure. Service vehicles will have restricted access out of peak hours.

### **2. Air Quality Information**

The proposal is to provide up to date information on local air quality and air quality forecasts, taking into account the proposed highways amendments identified above. There will also be links to sustainable travel options on the Council website. This will help to inform and educate visitors to the site and encourage more sustainable travel choices to be made.

### **3. Promotion of Park & Ride**

The promotion of the existing Park & Ride schemes, improved signage together with significant improvement and expansion of facilities, to include the new Elmbridge scheme on the outskirts of Gloucester, will assist in reducing car travel to and from Cheltenham.

### **4. Promotion of Personalised Travel Plans (PTP's)**

This proposal targets individuals directly by actively promoting and developing alternative travel options for them to allow a change in their transport behaviour. It aims to obtain a 10% shift away from car travel.

### **5. Bike-It officer**

The officer appointed will work in a number of schools across Cheltenham between 2013 until 2015 with the aim of encouraging parents and children to cycle and walk to school where possible. This will reduce the number of school run car trips and help to reduce congestion in Cheltenham during term-time.



## **6. Promotion of Greener Vehicles**

This proposal will encourage electric vehicle use through the installation of charging points in car parks or on-street. Cheltenham and Gloucestershire County councils will also investigate the potential for differential parking charges for electric and hybrid vehicles on street and in car parks.

## **7. HGV & LGV restrictions**

The aim of this proposal is to encourage deliveries during the quieter footfall periods of the day to reduce the pedestrian – HGV interface and reduce congestion during peak traffic hours.

## **8. Increase Car Sharing**

The existing car share website will be upgraded and re-launched to promote the benefits of car sharing such as reduced single occupancy journeys, reduced costs and lower emissions. Improved roadside signage and flyers will also be provided to encourage car-sharing.

## **9. School Travel Grants**

Schools will be able to apply for funding from LSTF for initiatives to encourage more sustainable transport choices by parents, pupils and teachers to reduce the traffic and parking issues during term associated with the 'school run'

## **10. Business Travel Grants**

Businesses in Cheltenham will be able to apply for funding from LSTF to fund initiatives to encourage employees and visitors to travel more sustainably

## **11. Wayfinding Initiative**

This proposal is to improve signage and routing for bus users and pedestrians across the town which will help to encourage the uptake of bus travel and walking.

## **12. Promote the development of Workplace Travel Plans**

Cheltenham Borough Council will develop its own workplace 'smarter' travel plan where resources allow and encourage larger businesses in Cheltenham to develop and implement similar plans. This will encourage more sustainable transport choices such as bus travel, car-sharing, cycling and walking.

### **13. Planning Policy for Air Quality**

An Air Quality Policy will be adopted as part of the emerging Cheltenham Local Plan, to ensure that air quality impacts of all significant developments are properly assessed and mitigation actions taken where necessary.

### **14. Traffic Light appraisal**

Following a traffic light switch off trial on Swindon Road, Cheltenham Borough Council will work with the County Council to investigate the potential for further traffic light trials with a view to removal of those considered to be non-essential. Evidence suggests that where traffic lights have been removed, traffic often flows better with less congestion thereby reducing air pollution.

### **15. Bus and Taxi Quality Partnership**

This proposal is to obtain an agreement with the main taxi and bus operators to encourage fuel efficient driving, no-idling when stationary and training in safe driving practices. This will assist in reducing vehicle emissions. The Council will also look at bus routing and location of bus stops in light of the proposed junction priority changes under the LSTF scheme.

### **16. Twenty is Plenty**

Cheltenham and Gloucestershire County Council will look at the potential for reducing urban traffic speed limit to 20mph in some areas to reduce congestion and improve traffic flow on busier roads, which may improve highway safety for cyclists and pedestrians as well as improve air quality.

### **17. Encourage a low emission bus fleet**

Cheltenham Council will continue to encourage the improvement of bus fleets to meet latest Euro emission standards which will assist in reducing emissions and improve air quality. The Council will also investigate the feasibility of using traffic regulation conditions to control bus emissions within Cheltenham AQMA through emission checks.

### **18. Promotion of green planting in urban areas**

Cheltenham Borough Council will seek to encourage green planting through planning control to help off-set potential pollution impacts where developments occur in areas of poorer air quality.

## **19. Vehicle Management Signage**

This proposal is for the installation of electronically operated signs to inform drivers of the nearest available car parking spaces and alert drivers of possible congestion. This may encourage more sustainable transport choices and reduce traffic queues which will improve air quality.

## **20. Cycle safety improvements**

The Council will encourage as far as possible the improvement of road layouts and associated infrastructure to improve the safety of cyclists in Cheltenham and reduce the potential conflicts between cyclists and other road users. This will help to encourage the uptake of cycling and improve cycle safety at key junctions.

# References

1. Local Air Quality Management – Technical Guidance LAQM.TG(09) – DEFRA (2009)
2. Updated Screening Assessment (2012) - Cheltenham Borough Council
3. Progress Report (2011) - Cheltenham Borough Council