



**COTSWOLD**  
DISTRICT COUNCIL

# 2014 Air Quality Progress Report for Cotswold District Council

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

May 2014

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## Executive Summary

This Progress Report for 2014 is the next stage of round 5 Review and Assessment for reporting on air quality required of local authorities. It considers Technical Guidance (LAQM.TG (09)) issued by DEFRA and the Devolved Administrations.

Cotswold District Council continued diffusion tube monitoring for nitrogen dioxide across the district in 2013. The sites are representative of relevant exposure and relate to emissions from traffic. The sites include single unique sites and the others provide additional data at Thames Street Lechlade and within the Air Quality Management Area (AQMA), at the Air Balloon Roundabout junction Birdlip.

Continuous automatic monitoring for nitrogen dioxide has continued within the AQMA's at Birdlip and Thames Street Lechlade.

The council has now declared an AQMA for a short length of Thames Street in Lechlade and will be undertaking work on an Action plan.

No new areas have been identified as exceeding the national objectives.

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# Introduction

## Description of Local Authority Area

### 1.1 Description of Local Authority Area

Cotswold District Council is predominantly a rural area, geographically the largest of the Gloucestershire local authorities and crossed by three main traffic routes:

- A419/A417, which is a strategic trunk road crossing from northwest to southeast;
- A429 southwest to northeast; and
- A40 which crosses the district west to east.

These roads mainly pass through countryside, bypassing most of the main towns, apart from the A429 that passes through the outskirts of Stow-on-the-Wold and Moreton-in-Marsh. Large portions of the District are classified as an area of outstanding natural beauty.

There are no industrial areas within the district or close by that make a significant impact on air quality. The industries within the district that emit any of the prescribed pollutants are not located close to relevant public exposure. The scale on which they operate does not produce emissions that contribute significantly to the air quality.

## Purpose of Progress Report

This report fulfils the requirements of the Local Air Quality Management (LAQM) process as set out in Part IV of the Environment Act (1995), the Air Quality Strategy for England, Scotland, Wales and Northern Ireland 2007 and the relevant Policy and Technical Guidance documents. The LAQM process places an obligation on all local authorities to regularly review and assess air quality in their areas, and to determine whether or not the air quality objectives are likely to be achieved. Where exceedences are considered likely, the local authority must then declare an Air

Quality Management Area (AQMA) and prepare an Air Quality Action Plan (AQAP) setting out the measures it intends to put in place in pursuit of the objectives.

Progress Reports are required in the intervening years between the three-yearly Updating and Screening Assessment reports. Their purpose is to maintain continuity in the LAQM process.

They are not intended to be as detailed as Updating and Screening Assessment Reports, or to require as much effort. However, if the Progress Report identifies the risk of exceedence of an Air Quality Objective, the Local Authority (LA) should undertake a Detailed Assessment immediately, and not wait until the next round of Review and Assessment.

## **Air Quality Objectives**

The air quality objectives applicable to LAQM **in England** are set out in the Air Quality (England) Regulations 2000 (SI 928), The Air Quality (England) (Amendment) Regulations 2002 (SI 3043), and are shown in Table 1.1. This table shows the objectives in units of micrograms per cubic metre  $\mu\text{g}/\text{m}^3$  (milligrams per cubic metre,  $\text{mg}/\text{m}^3$  for carbon monoxide) with the number of exceedences in each year that are permitted (where applicable).

**Table 1.1 Air Quality Objectives included in Regulations for the purpose of LAQM in England**

Pollutant	Air Quality Objective		Date to be achieved by
	Concentration	Measured as	
Benzene	16.25 µg/m <sup>3</sup>	Running annual mean	31.12.2003
	5.00 µg/m <sup>3</sup>	Annual mean	31.12.2010
1,3-Butadiene	2.25 µg/m <sup>3</sup>	Running annual mean	31.12.2003
Carbon monoxide	10 mg/m <sup>3</sup>	Running 8-hour mean	31.12.2003
Lead	0.50 µg/m <sup>3</sup>	Annual mean	31.12.2004
	0.25 µg/m <sup>3</sup>	Annual mean	31.12.2008
Nitrogen dioxide	200 µg/m <sup>3</sup> not to be exceeded more than 18 times a year	1-hour mean	31.12.2005
	40 µg/m <sup>3</sup>	Annual mean	31.12.2005
Particulate Matter (PM <sub>10</sub> ) (gravimetric)	50 µg/m <sup>3</sup> , not to be exceeded more than 35 times a year	24-hour mean	31.12.2004
	40 µg/m <sup>3</sup>	Annual mean	31.12.2004
Sulphur dioxide	350 µg/m <sup>3</sup> , not to be exceeded more than 24 times a year	1-hour mean	31.12.2004
	125 µg/m <sup>3</sup> , not to be exceeded more than 3 times a year	24-hour mean	31.12.2004
	266 µg/m <sup>3</sup> , not to be exceeded more than 35 times a year	15-minute mean	31.12.2005

## Summary of Previous Review and Assessments

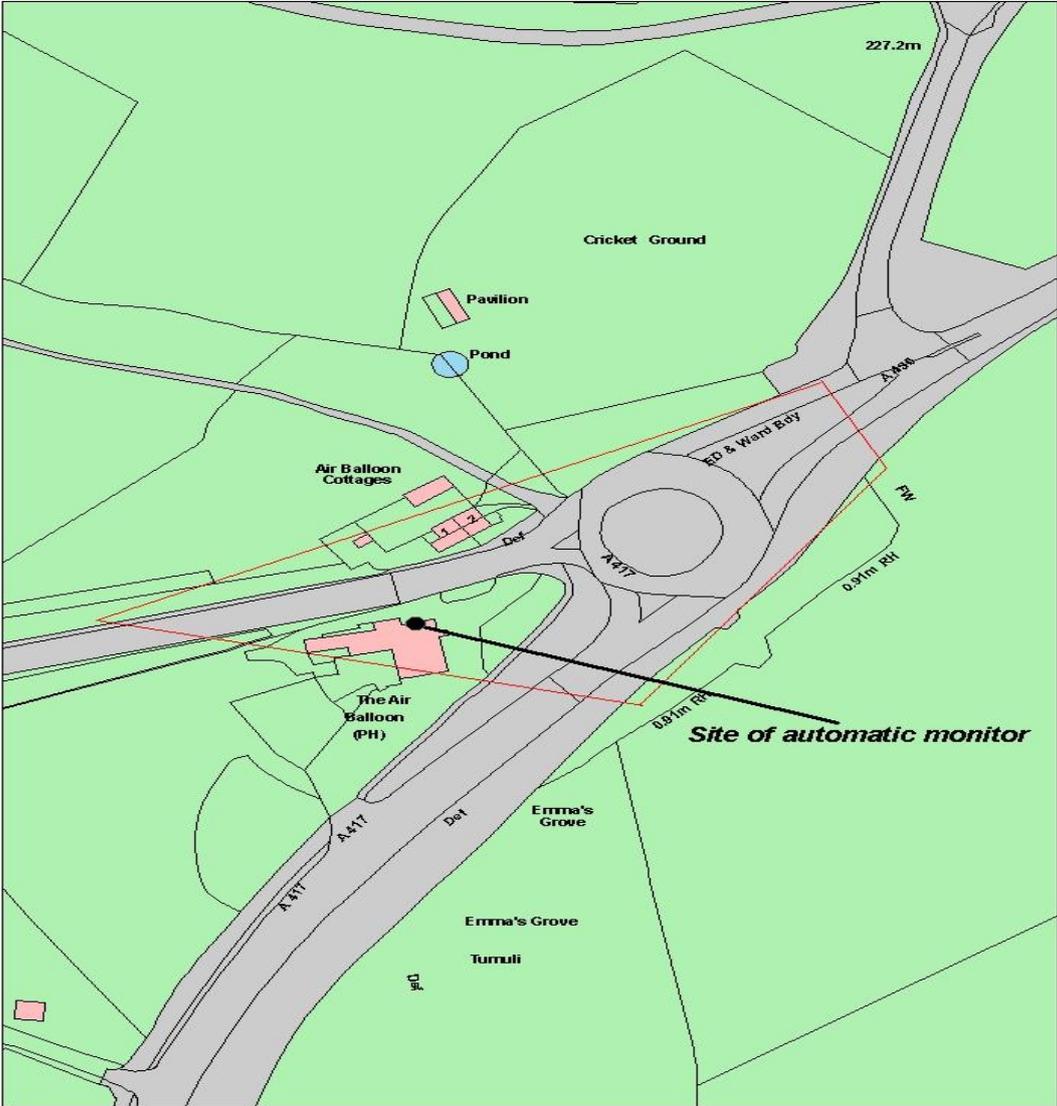
Report Submitted	Outcome
Updating and Screening 2006	Diffusion tube monitoring carried out for NO <sub>2</sub> and Benzene. No new issues identified. Monitoring continued for NO <sub>2</sub> at the Air Balloon roundabout junction of the A417 at Birdlip in relation to potential exceedence identified.
Detailed Assessment 2007 for nitrogen dioxide (NO <sub>2</sub> ) at A417 junction	Automatic monitoring undertaken for NO <sub>2</sub> and dispersion modelling undertaken at Birdlip confirmed need to declare AQMA.
Progress Report 2007	No new issues. Monitoring for NO <sub>2</sub> continued with no changes.
Declaration of Local Air Quality Management Area April 2008	Declared in respect of nitrogen dioxide exceedence of annual mean related to traffic emissions. ( See figure 1) Order amended 2010 to include 1 hourly objective.
<b>Round 4</b> Updating and Screening 2009	Monitoring of NO <sub>2</sub> continued across the district. Continuous monitoring was reported on from within the Air Quality Management area at Birdlip; A Further Assessment was submitted 2010 for this site.
Progress Report 2010	Identified a possible exceedence at Thames Street Lechlade. Continuous monitoring planned for this site. Diffusion tube monitoring continued across the district and continuous monitoring within the AQMA. No new areas of concern were identified.
Progress Report 2011	Diffusion tube monitoring was reported on with no new areas identified. Continuous monitoring began in Thames Street Lechlade to be reported on in 2012; continuous monitoring continued within the existing AQMA.
Action Plan for AQMA at Air Balloon Roundabout 2012	Action Plan was published. The issue is relates to traffic on this major trunk route; controls are outside the control of the district council. The plan concludes that support and encouragement through a working party will be given to measures that may help to control traffic and encourage alternative transport.

## Cotswold District Council

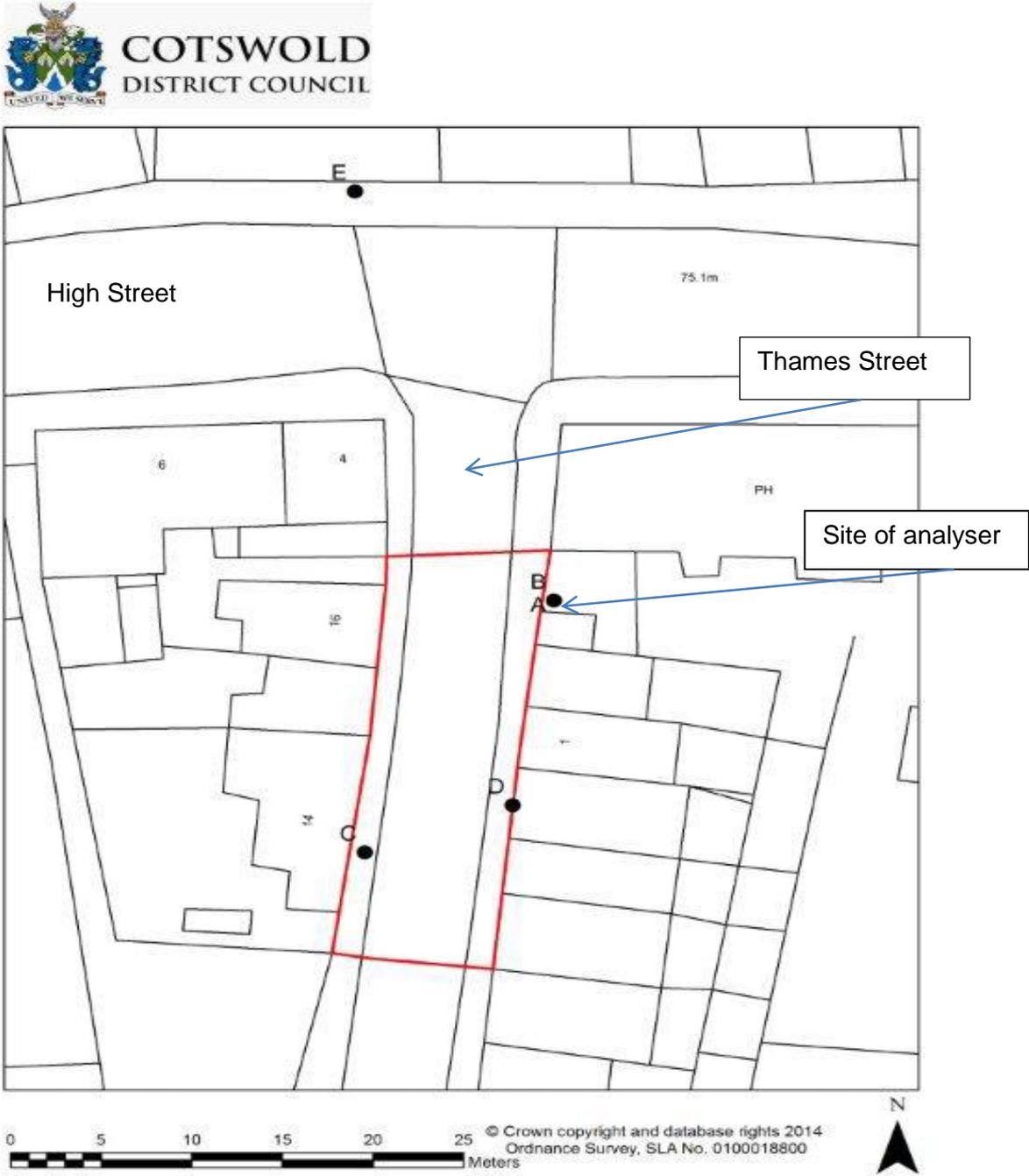
Report Submitted	Outcome
<b>Round 5</b> Updating and Screening 2012	Diffusion tube monitoring continued for NO <sub>2</sub> . Additional tube introduced in Thames Street. Two analysers maintained one within the LAQMA at Birdlip and one in Thames Street Lechlade. No new issues identified.
Detailed Assessment for Lechlade	Automatic monitoring undertaken of NO <sub>2</sub> – short term data and results from analyser were inconclusive analyser results: 38µg/m <sup>3</sup> . Monitoring is to continue to provide consistent long term data.
Progress Report 2013	No changes to previous years monitoring. Data confirmed the need to declare an Air Quality Management Area for Thames Street Lechlade in respect of nitrogen dioxide.

Figure 1.1 Maps of AQMA Boundaries

Automatic Monitoring Site at the Air Balloon Junction within the AQMA (CM1)



Air Quality Management Area Thames Street Lechlade



## 2 New Monitoring Data

### Summary of Monitoring Undertaken

#### Automatic Monitoring Sites

Cotswold District Council has maintained continuous monitoring within the AQMA's at the Air Balloon roundabout Birdlip and at Thames Street Lechlade.

#### QA/QC

Both analysers were installed and commissioned by the supplier. Routine calibrations are undertaken in keeping with QA/QC controls; calibration checks are undertaken least every 2 weeks. These checks are carried by out Cotswold District Council officers in accordance with the supplier's procedures. Calibration checks include replacing the filter and running checks using supplied gases at known concentrations. The supplier has serviced the analysers at six-month intervals.

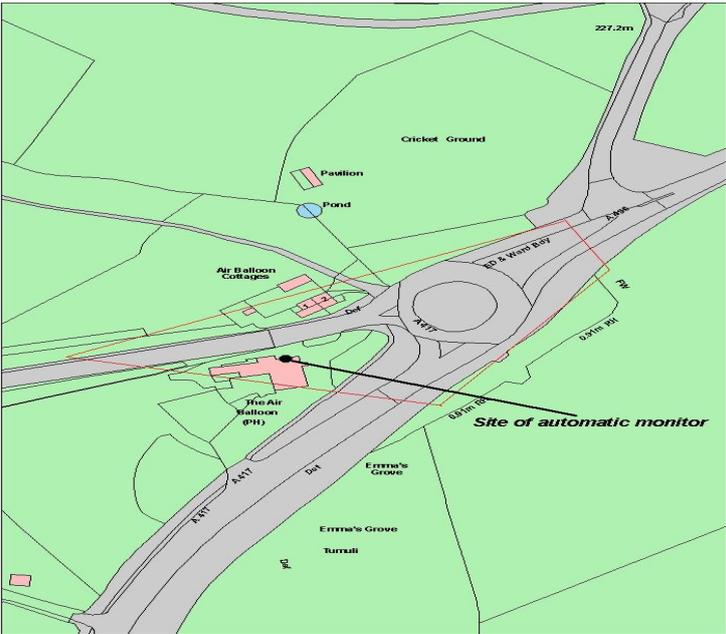
#### Data validation and ratification

The raw data from both analysers is collected by Enviro-technology services and forwarded to the council monthly. This has been validated and ratified in house. The raw data has been scanned for consistency and anomalies, data capture assessed, high and negative readings considered. The data is corrected using readings from the regular calibration information and transposed into consistent units, i.e.  $\mu\text{gm}^3$  from this an annual mean is calculated.

Data at both sites show patterns of peaks and troughs over 24 hours with low levels recorded during night-time hours and building up at peak times as traffic movements increase.

Figure 2.1 Maps of Automatic Monitoring Sites

Automatic Monitoring Site at the Air Balloon Junction within the AQMA (CM1)



Automatic Monitoring Site at Thames Street Lechlade (CM2)

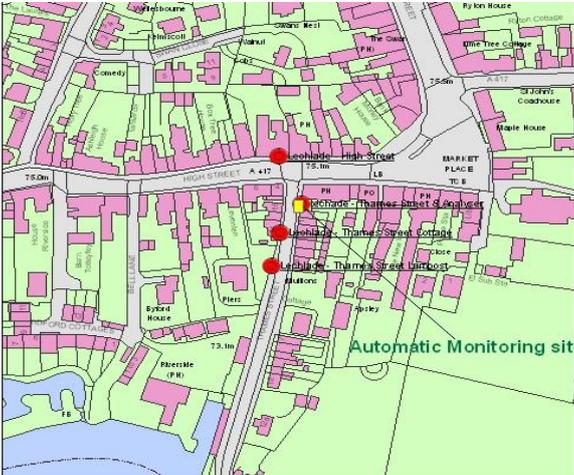


Table 2.1 Details of Automatic Monitoring Sites

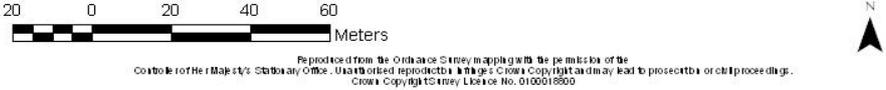
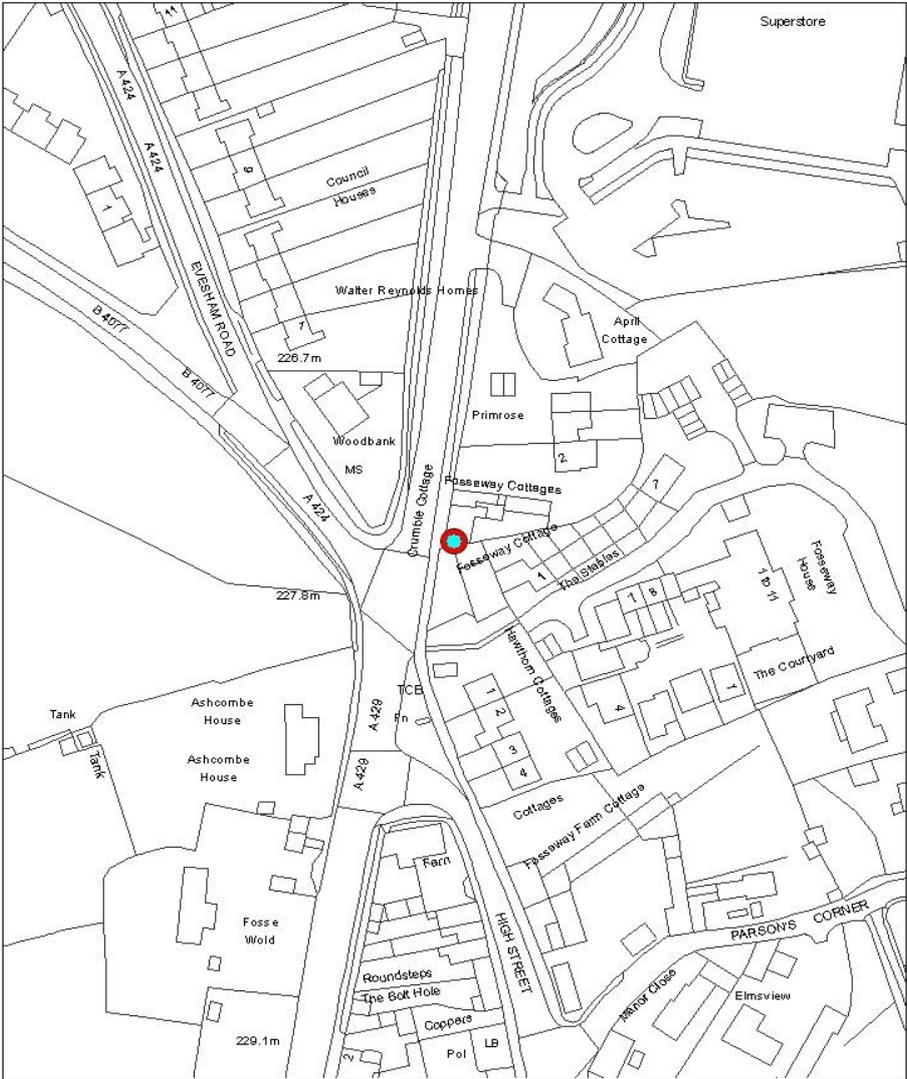
Site ID	Site Name	Site Type	X OS Grid Reference	Y OS Grid Reference	Inlet Height (m)	Pollutants Monitored	In AQMA?	Monitoring Technique	Relevant Exposure? (Y/N with distance (m) from monitoring site to relevant exposure)	Distance to Kerb of Nearest Road (m) (N/A if not applicable)	Does this Location Represent Worst-Case Exposure?
CM2	Lechlade - Thames St	Kerbside	421378	199506	1.5	NO <sub>2</sub>	N	Chemiluminescence	y(<1m)	0.5m	Y
CM1	Air Balloon Roundabout A417 Junction	Roadside	393439	216024	2.75	NO <sub>2</sub>	Y	Chemiluminescence	Y(<1m)	8.3m	N

Non-Automatic Monitoring Sites

Cotswold District Council currently has sixteen diffusion tube sites for nitrogen dioxide. All sites relate to emissions from traffic and are positioned where there is relevant public exposure, in accordance with guidance in TG (09). Details of the sites are given below, see table 3

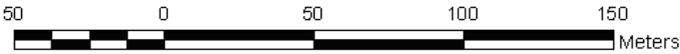
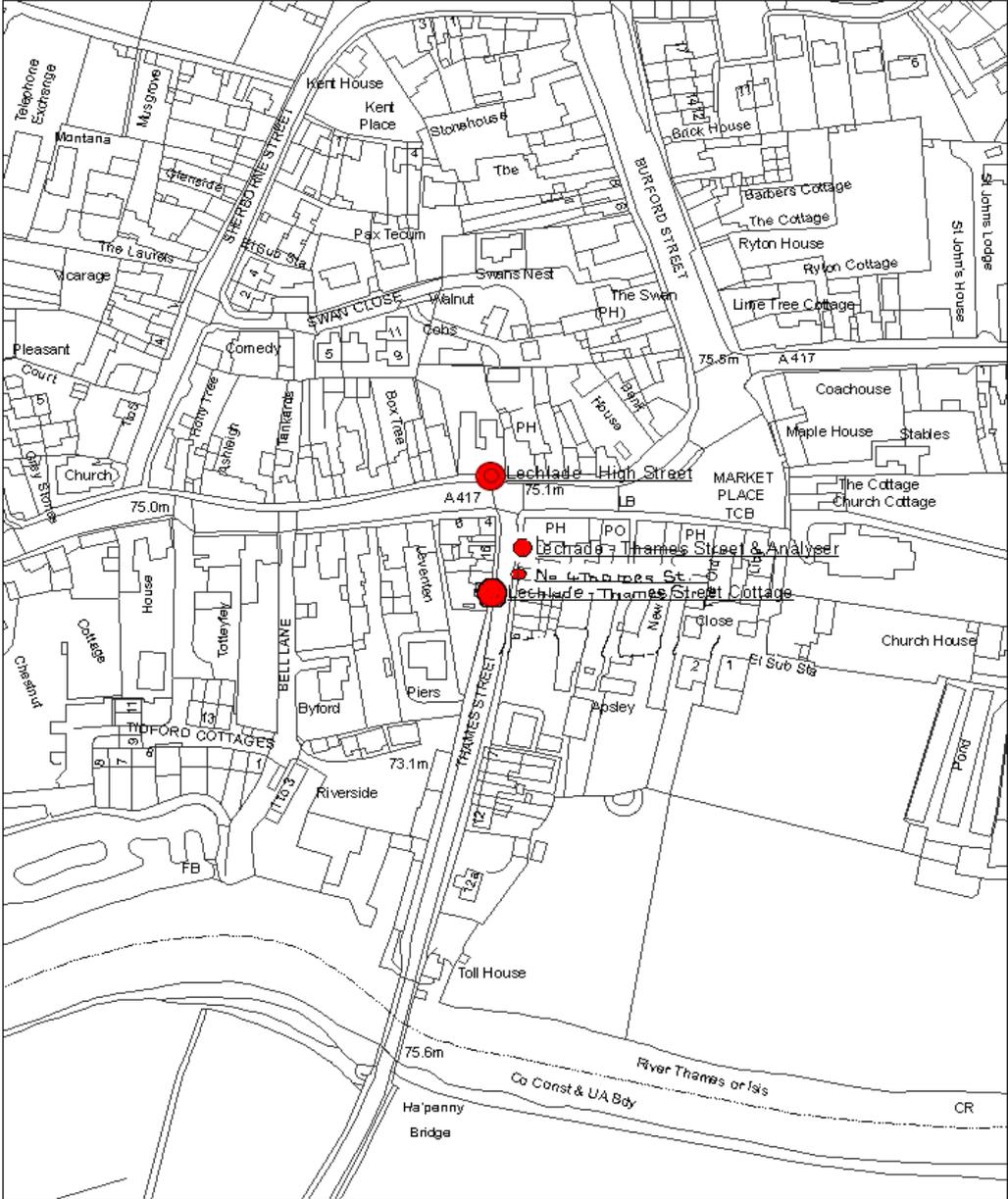
Figure 2.2 Maps of Non-Automatic Monitoring Sites

Site T1 Stow in the Wold

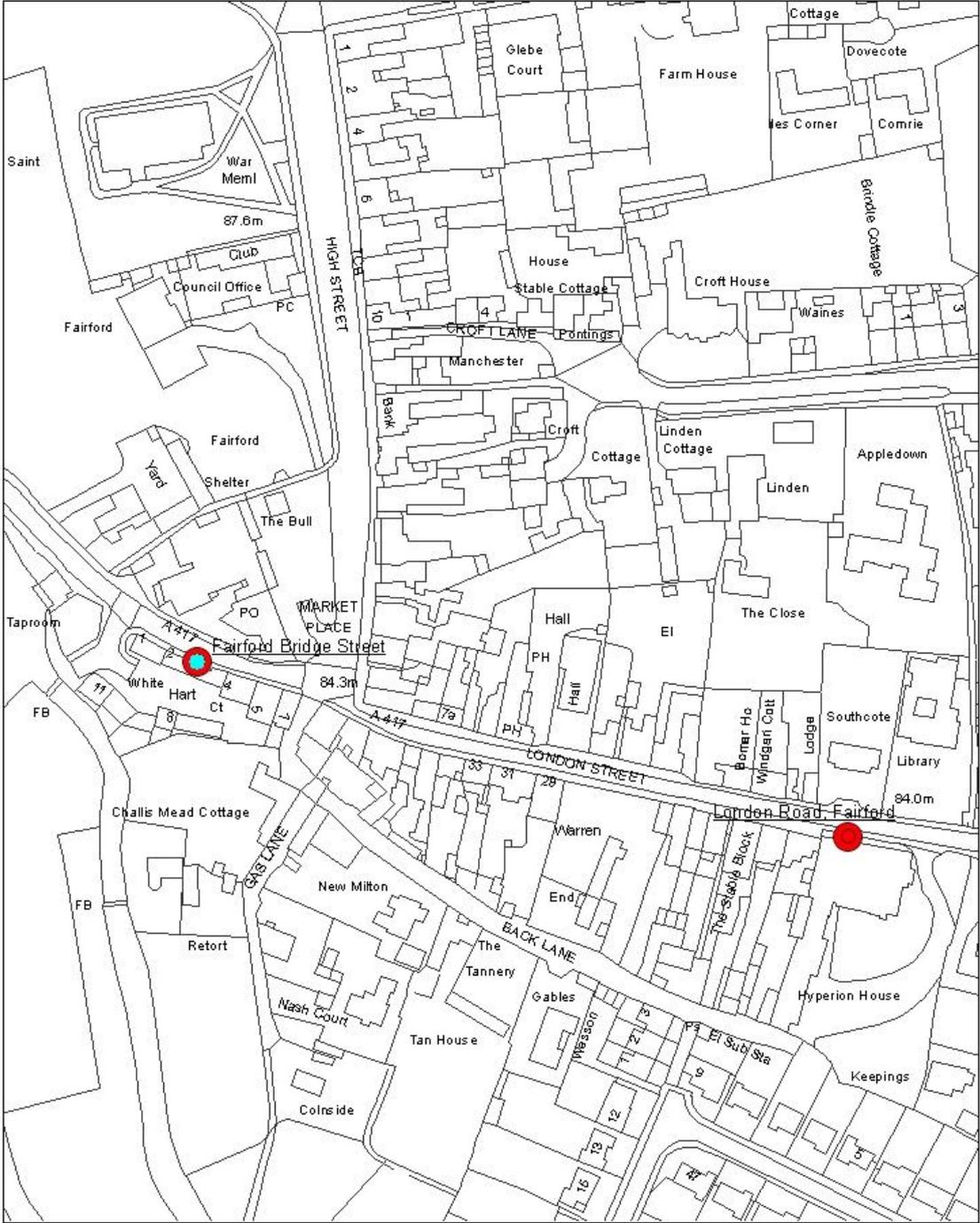


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Site T2, T3, T4, T5, & analyser Thames Street, High Street Lechlade



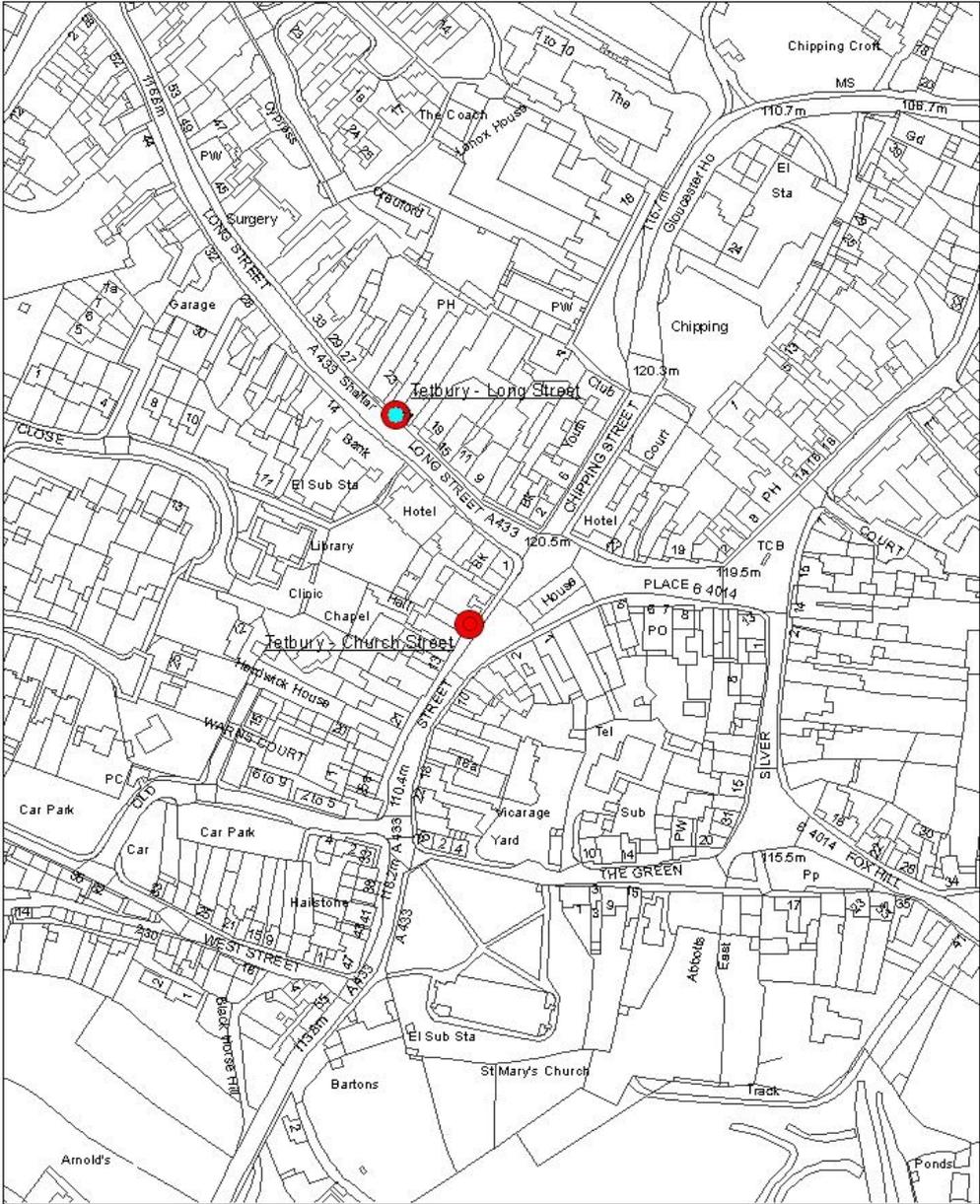
Site T6, London Road, T7 Bridge Street Fairford



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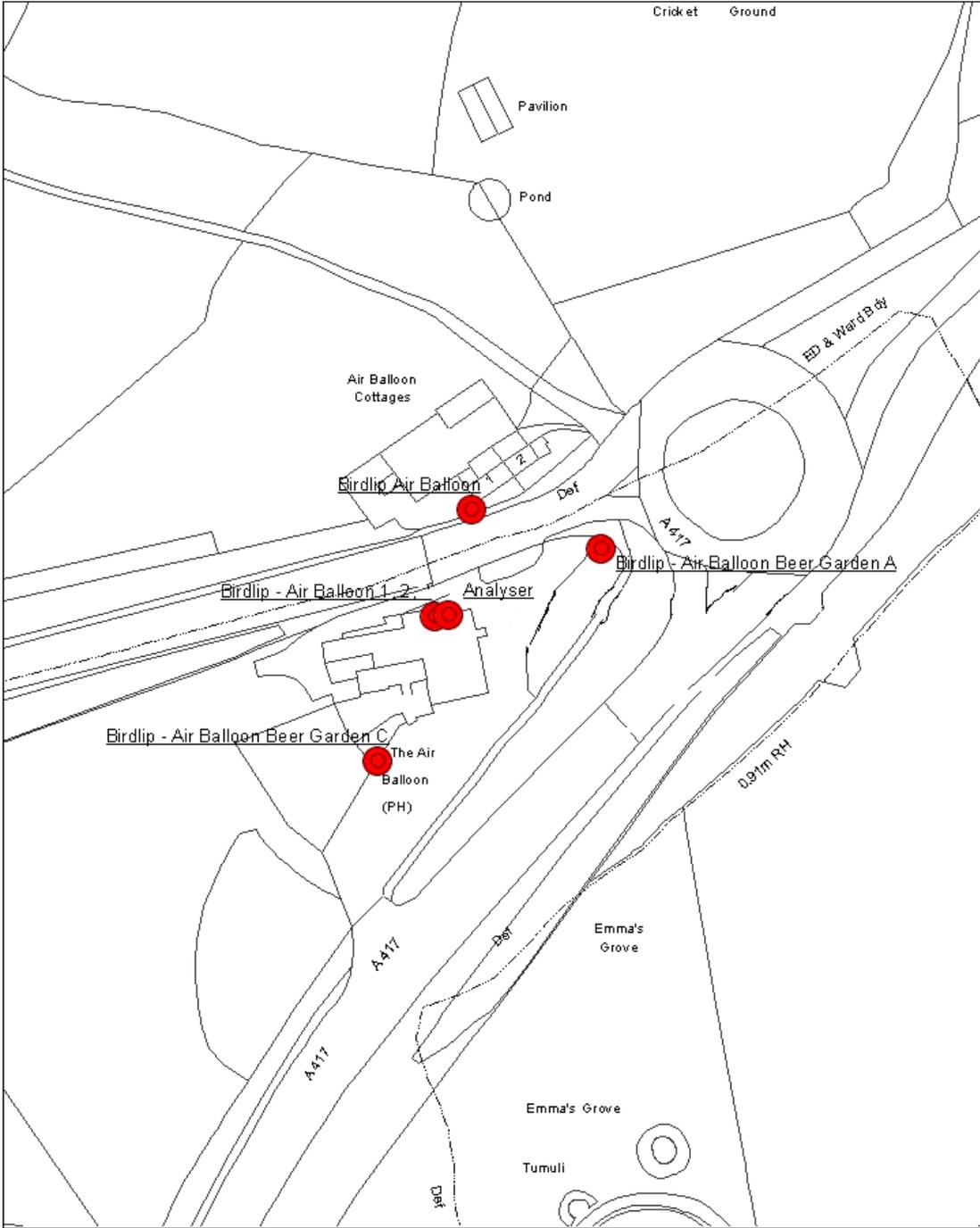


Site T9 Church Street T10 Long Street Tetbury



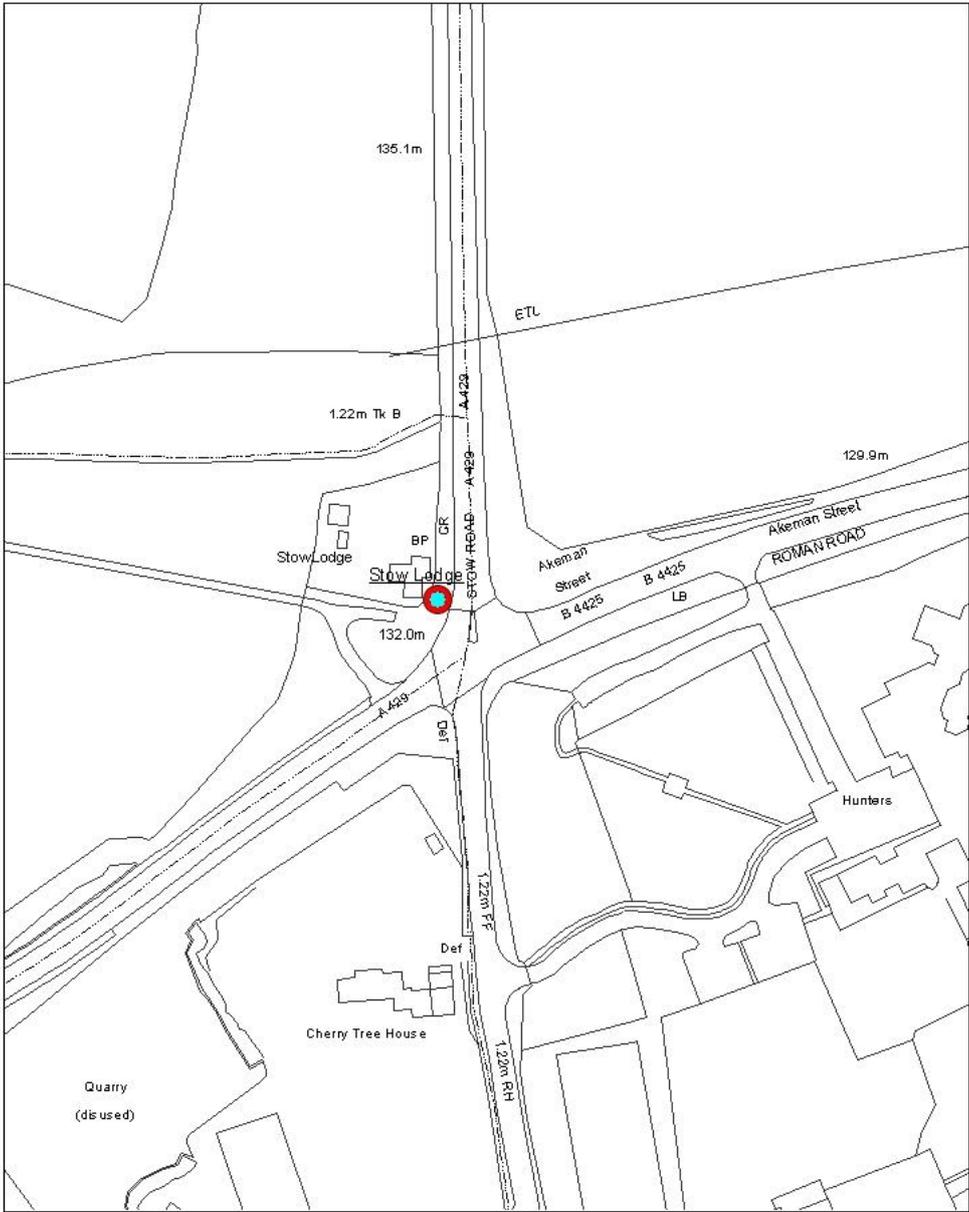
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Sites at Air Balloon Roundabout T11 T12 T13 T14 T15



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Site T16 Stow Lodge



50 0 50 100 Meters

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Table 2.2 Details of Non- Automatic Monitoring Sites

Site Name	Site Type	X OS Grid Ref	Y OS Grid Ref	Pollutants Monitored	In AQMA?	Is monitoring collocated with a Continuous analyser (Y/N)	Relevant Exposure? (Y/N with distance (m) to relevant exposure)	Distance to kerb of nearest road (N/A if not applicable)	Does this location represent worst-case exposure?
Stow-in-the Wold - Fosseway Cottage	Roadside	419079	226054	NO <sub>2</sub>	N	N	y (1m)	3m	N
Lechlade -Thames St	Kerbside	421378	199506	NO <sub>2</sub>	Y	Y	y(<1m)	0.5m	Y
Lechlade No 2 Thames St	Kerbside	421359	199404	NO <sub>2</sub>	Y	N	Y(1m)	<1m	Y
Lechlade - Thames St cottage 4	Kerbside	421364	199477	NO <sub>2</sub>	Y	N	y(<1m)	1.5m	Y
Lechlade – High St	Kerbside	421367	199532	NO <sub>2</sub>	N	N	y (<1m)	<1m	Y
Fairford - London Rd	Kerbside	415378	200949	NO <sub>2</sub>	N	N	y (1m)	1m	Y
Fairford Bridge St	Kerbside	415167	201004	NO <sub>2</sub>	N	N	y (1m)	1m	Y
Cirencester -Castle St	Kerbside	402222	202010	NO <sub>2</sub>	N	N	y(1m)	1m	Y
Cirencester – London Rd (Wagon/Horses)	Kerbside	402735	201962	NO <sub>2</sub>	N	N	y (<1m)	<1m	Y
Tetbury - Long St	Kerbside	389007	193197	NO <sub>2</sub>	N	N	y(1m)	1m	Y
Tetbury - Church St	Kerbside	389034	193110	NO <sub>2</sub>	N	N	y(1m)	1m	Y
Birdlip Air Balloon	Kerbside	393446	216118	NO <sub>2</sub>	Y	N	y(1m)	1m	Y
Birdlip - Air Balloon 1	Kerbside	393459	216124	NO <sub>2</sub>	Y	Y	y(1m)	4m	Y
Birdlip - Air Balloon 2	Kerbside	393459	216124	NO <sub>2</sub>	Y	Y	y(1m)	4m	Y
Birdlip - Air Balloon, beer garden B	Kerbside	393459	216091	NO <sub>2</sub>	Y	N	Y(<1M)	1m	Y
Birdlip - Air Balloon, C Car park	Kerbside	393424	216059	NO <sub>2</sub>	Y	N	Y(<1M)	22m	Y
Stow Lodge	Kerbside	403943	202961	NO <sub>2</sub>	N	N	y(5m)	0.5m	Y

## 2.1 Comparison of Monitoring Results with Air Quality Objectives

No new pollutants and been identified as requiring monitoring to be undertaken. Monitoring for nitrogen dioxide levels has continued using diffusion tubes and continuous monitors. No new sites were identified; all are representative of relevant exposure and relate to vehicle exhaust emissions.

Exceedances of the annual mean are confined to the existing AQMA's

### Nitrogen Dioxide (NO<sub>2</sub>)

#### Automatic Monitoring Data

Air Balloon the annual mean is at 41 µg/m<sup>3</sup>; a fall of 25% on the highest level over the last five years levels. This is not significant; the site of the analyser is not worst case scenario. This fall is not reflected in diffusion data at the site that does represent worst case that has remained consistence.

At Lechlade the recorded mean is 36 µg/m<sup>3</sup>, a slight fall on last year's data, and below the national objective at 40µg/m<sup>3</sup> as an annual mean; however diffusion tube results remain consistent with previous years and over the national objective; for now the AQMQ will remain in place.

The data from the continuous analysers show episodes above the 1-hour objective. There are no breaches of this objective, which remains at no more than 18 exceedances of the 15 minute objective.

**Table 2.3 Results of Automatic Monitoring for NO<sub>2</sub>: Comparison with Annual Mean Objective**

Site ID	Site Type	Within AQMA?	Valid Data Capture for Monitoring Period % <sup>a</sup>	Valid Data Capture 2013 % <sup>b</sup>	Annual Mean Concentration (µg/m <sup>3</sup> )				
					2009* <sup>c</sup>	2010* <sup>c</sup>	2011* <sup>c</sup>	2012* <sup>c</sup>	2013 <sup>c</sup>
CM1	Roadside	Y	100	93	<b>42.5</b>	<b>45.2</b>	<b>48.1</b>	<b>36</b>	<b>41</b>
CM2	Roadside	Y	100	98	N/A	N/A	38	<b>42</b>	36

In bold, exceedence of the NO<sub>2</sub> annual mean AQS objective of 40µg/m<sup>3</sup>

<sup>a</sup> i.e. data capture for the monitoring period, in cases where monitoring was only carried out for part of the year

<sup>b</sup> i.e. data capture for the full calendar year (e.g. if monitoring was carried out for six months the maximum data capture for the full calendar year would be 50%)

<sup>c</sup> Means should be “annualised” [as in Box 3.2 of TG\(09\) \(http://laqm.defra.gov.uk/technical-guidance/index.html?d=page=38\)](http://laqm.defra.gov.uk/technical-guidance/index.html?d=page=38), if valid data capture is less than 75%

\* Annual mean concentrations for previous years are optional

**Figure 2.3 Trends in Annual Mean NO<sub>2</sub> Concentrations Measured at Automatic Monitoring Sites**

No significant trend is noted.

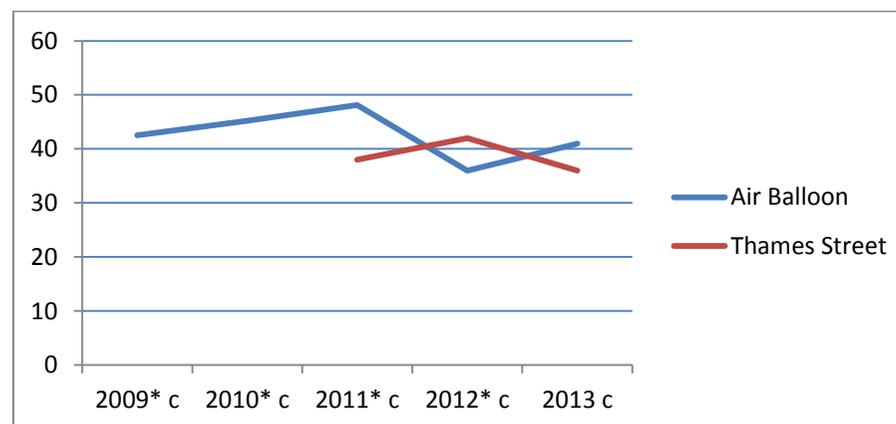


Table 2.4 Results of Automatic Monitoring for NO<sub>2</sub>: Comparison with 1-hour Mean Objective

Site ID	Site Type	Within AQMA?	Valid Data Capture for Monitoring Period % <sup>a</sup>	Valid Data Capture 2013 % <sup>b</sup>	Number of Hourly Means > 200µg/m <sup>3</sup>				
					2009* <sup>c</sup>	2010* <sup>c</sup>	2011* <sup>c</sup>	2012* <sup>c</sup>	2013 <sup>c</sup>
CM1	Roadside	Y	100	93	n/a	n/a	<b>17</b>	3	11
CM2	Roadside	Y	100	98	n/a	n/a	1	14	6

In bold, exceedence of the NO<sub>2</sub> hourly mean AQS objective (200µg/m<sup>3</sup> – not to be exceeded more than 18 times per year)

<sup>a</sup> i.e. data capture for the monitoring period, in cases where monitoring was only carried out for part of the year

<sup>b</sup> i.e. data capture for the full calendar year (e.g. if monitoring was carried out for six months the maximum data capture for the full calendar year would be 50%)

<sup>c</sup> If the data capture for full calendar year is less than 90%, include the 99.8<sup>th</sup> percentile of hourly means in brackets

\* Number of exceedences for previous years is optional

## Diffusion Tube Monitoring Data

Table 2.5 Results of NO<sub>2</sub> Diffusion Tubes 2013

Site ID	Location	Site Type	Within AQMA?	Triplicate or Collocated Tube	Data Capture 2011 (Number of Months or %)	Data with less than 9 months has been annualised (Y/N)	Annual mean concentration (Bias Adjustment factor = 0.95) 2013 (µg/m <sup>3</sup> )
T1	Stow-in-the-Wold Fosseway Cottage	Roadside	N		100	N/A	30.71
T2	Lechlade – Thames Street	Kerbside	Y		100	N/A	37.97
T3	Lechlade- 2 Thames Street	Kerbside	Y		100	N/A	<b>42.96</b>
T4	Lechlade – Thames Street cottage	Kerbside	Y		100	N/A	39.89
T5	Lechlade - High St	Kerbside	N		100	N/A	32.65
T6	Fairford – London Rd	Kerbside	N		100	N/A	28.11
T7	Fairford - Bridge St	Kerbside	N		100	N/A	33.97
T8	Cirencester - London Rd (Wagon/Horses)	Kerbside	N		100	N/A	33.28
T9	Tetbury – Church St	Kerbside	N		100	N/A	32.04
T10	Tetbury - Long Street	Kerbside	N		100	N/A	26.67
T11	Birdlip - Air Balloon	Kerbside	Y		100	N/A	<b><u>61.93</u></b>
T12	Birdlip - Air Balloon 2	Kerbside	Y	duplicate	100	N/A	<b>42.18</b>
T13	Birdlip - Air Balloon 3	Kerbside	Y	duplicate	100	N/A	<b>41.60</b>
T14	Birdlip - Air Balloon, beer garden A	Kerbside	Y		100	N/A	<b>42.93</b>
T15	Birdlip - Air Balloon, beer garden C	Kerbside	Y		100	N/A	27.44
T16	Stow Lodge	Kerbside	N		100	N/A	33.74

In bold, exceedence of the NO<sub>2</sub> annual mean AQS objective of 40µg/m<sup>3</sup>

Underlined, annual mean > 60µg/m<sup>3</sup>, indicating a potential exceedence of the NO<sub>2</sub> hourly mean AQS objective

<sup>a</sup> Means should be “annualised” as in Box 3.2 of TG(09) (<http://laqm.defra.gov.uk/technical-guidance/index.html?d=page=38>), if full calendar year data capture is less than 75%

<sup>b</sup> If an exceedence is measured at a monitoring site not representative of public exposure, NO<sub>2</sub> concentration at the nearest relevant exposure should be estimated based on the “NO<sub>2</sub> fall-off with distance” calculator (<http://laqm.defra.gov.uk/tools-monitoring-data/no2-falloff.html>), and results should be discussed in a specific section. The procedure is also explained in Box 2.3 of Technical Guidance LAQM.TG(09) (<http://laqm.defra.gov.uk/technical-guidance/index.html?d=page>

Table 2.6 Results of NO<sub>2</sub> Diffusion Tubes (2009 to 2013)

Site id	Site	Site Type	Within AQMA?	Valid Data Capture for Monitoring Period %	Valid Data Capture 2012 % <sup>b</sup>	Annual Mean Concentration				
						2009* <sup>c</sup> (Bias Adjustment Factor = 0.85)	2010* <sup>c</sup> (Bias Adjustment Factor = 0.77)	2011* <sup>c</sup> (Bias Adjustment Factor = 0.83)	2012* <sup>c</sup> (Bias Adjustment Factor = 0.94)	2013* <sup>c</sup> (Bias Adjustment Factor = 0.95)
T1	Stow-in-the -Wold Fosseway Cottage	Roadside	N		100	34.68	37.61	36.2	36.8	30.71
T2	Lechlade - Thames Street	Kerbside	Y		100	42.52	42.85	38.7	<b>41.4</b>	38.92
T3	Lechlade –Cottage no 4	Kerbside	Y		100	na	na	<b>41.7</b>	<b>43.4</b>	<b>42.96</b>
T4	Lechlade -Cottage No 2 Thames St	Kerbside	Y		100	na	na	na	39.23	39.89
T5	Lechlade High St	Kerbside	N	100	100	42.77	35.56	34.6	35.9	32.65
T6	Fairford - London Rd	Kerbside	N		100	33.8	27.11	32.3	33.2	28.11
T7	Fairford - Bridge St	Kerbside	N		100	41.38	34.12	35.5	39.2	33.97
T8	Cirencester - London Rd (Waggon/Horses)	Kerbside	N		100	36.75	35.4	33.9	35.7	33.28
T9	Tetbury - Church St	Kerbside	N		100	34.98	35.46	35.7	36.8	32.04
T10	Tetbury - Long Street	Kerbside	N		100	33.81	28.78	28.6	29.3	26.67
T11	Birdlip - Air Balloon	Kerbside	Y		100	71.02	57.62	69.4	<b>68.3</b>	<b>61.93</b>

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T12	Birdlip - Air Balloon 2	Kerbside	Y		100	43.92	43.02	43.5	<b>46.1</b>	<b>42.18</b>
T13	Birdlip - Air Balloon 3	Kerbside	Y		100	43.92	42.7	45.3	<b>47.2</b>	<b>41.60</b>
T14	Birdlip - Air Balloon, beer garden A	Kerbside	Y		100	45.76	31.45	28.3	<b>44.6</b>	<b>42.93</b>
T15	Birdlip - Air Balloon, beer car park C	Kerbside	Y		100	31.58	30.5	29.7	27.1	27.44
T16	Stow Lodge	Kerbside	N		100	35.85	32.15	35.3	35.3	33.74

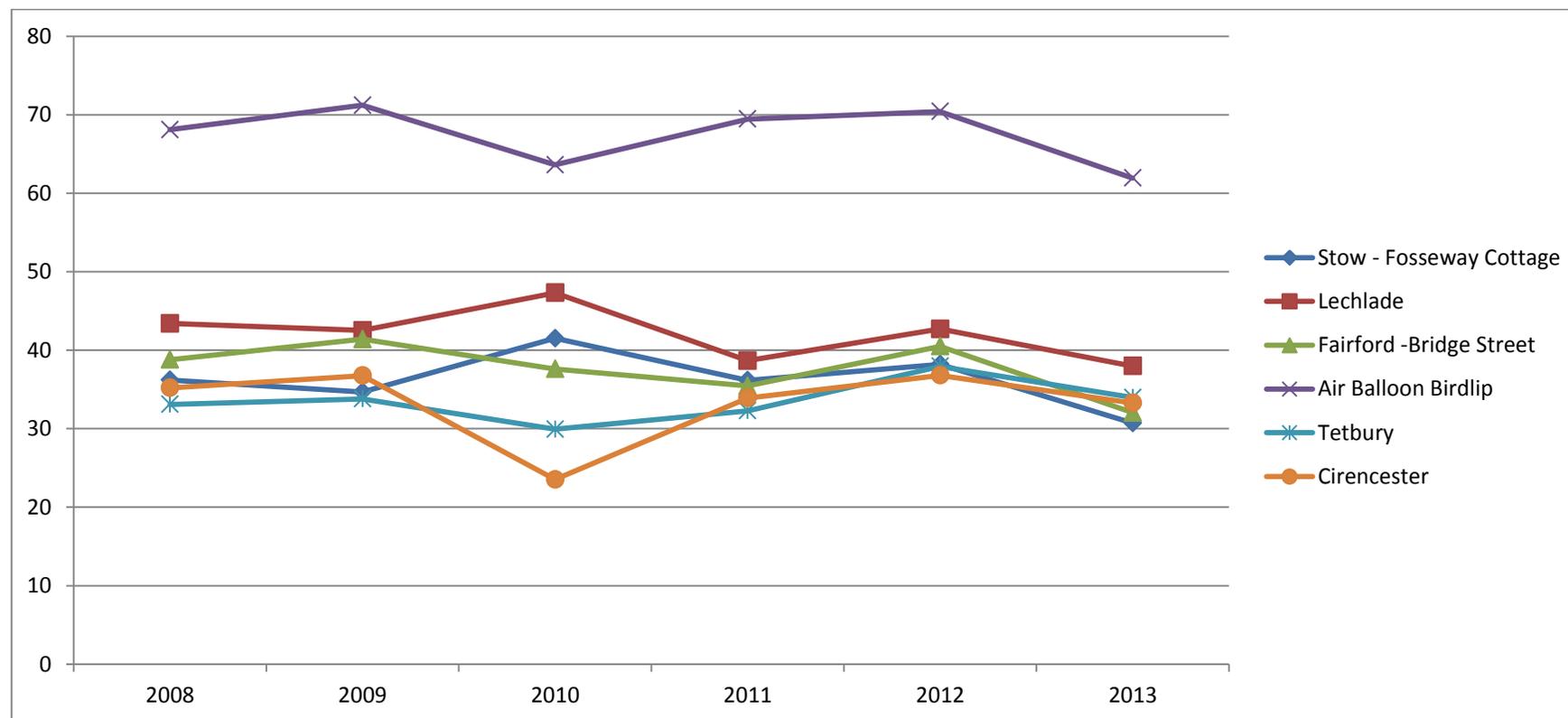
In bold, exceedence of the NO<sub>2</sub> annual mean AQS objective of 40µg/m<sup>3</sup>

Underlined, annual mean > 60µg/m<sup>3</sup>, indicating a potential exceedence of the NO<sub>2</sub> hourly mean AQS objective

<sup>a</sup> Means should be “annualised” as in Box 3.2 of TG(09) (<http://laqm.defra.gov.uk/technical-guidance/index.html?d=page=38>), if full calendar year data capture is less than 75%

<sup>b</sup> If an exceedence is measured at a monitoring site not representative of public exposure, NO<sub>2</sub> concentration at the nearest relevant exposure should be estimated based on the “NO<sub>2</sub> fall-off with distance” calculator (<http://laqm.defra.gov.uk/tools-monitoring-data/no2-falloff.html>), and results should be discussed in a specific section. The procedure is also explained in Box 2.3 of Technical Guidance LAQM.TG(09) (<http://laqm.defra.gov.uk/technical-guidance/index.html?d=page=30>).

**Figure 2.4 Trends in Annual Mean Nitrogen Dioxide Concentrations Measured at Diffusion Tube Long Term Monitoring Sites**



The trends over six year's monitoring data at long term sites are shown in this graph. All values have remained fairly consistent with the exception of 2010. The latest data for 2013 shows a slight fall in values across all sites.

### 3 Summary of Compliance with AQS Objectives

Cotswold District Council has examined the results from monitoring in the district.

Concentrations within the AQMA's still exceed the annual objective for nitrogen dioxide at the Air Balloon Roundabout Birdlip and Thames Street Lechlade the AQMA should remain at both locations.[3](#).

Concentrations outside of the AQMA are all below the objectives at relevant locations, therefore there is no need to proceed to a Detailed Assessment.

Cotswold District Council confirms that there are no new or newly identified local developments which may have an impact on air quality within the Local Authority area.

Cotswold District Council confirms that all the following have been considered:

- **Road traffic sources**
- **Other transport sources**
- **Industrial sources**
- **Commercial and domestic sources**
- **New developments with fugitive or uncontrolled sources.**

## **4 Local / Regional Air Quality Strategy**

The Gloucestershire Air Quality Strategy remains in place and to date unchanged.

Gloucestershire councils continue to work together and share best practice.

## **5 Air Quality Planning Policies**

To address air quality matters the district currently has made use of the SPG on Planning and Air Quality produced by the Bristol, Gloucestershire and Somerset (BG&S) Environment Protection Committee.

## **6 Local Transport Plans and Strategies**

Gloucestershire County Council LTP3 recognises the need to work with district authorities over air quality issues related to traffic, particularly where there exists an LAQMAs. In the Cotswold's district the area of the AQMA at Air Balloon Roundabout is highlighted as it is a strategic trunk route and an area of high traffic congestion and the plan commits to assisting with the Action Plan for this area.

The plan seeks to encourage green travel including supporting an increase in railway traffic and other measures that will help reduce traffic congestion. Policies are also included to ensure that for any new developments the transport network is developed sufficiently to cope with the increased number of trips that new occupiers will take.

## 7 Climate Change Strategies

Cotswold District Council identified Lower Carbon Emissions as a council priority as this is included in the council's Corporate Strategy. The delivery of this priority is primarily supported by addressing the council's own emissions and domestic emissions.

The council has committed to a 25% reduction in carbon dioxide from its own operations by 2015. The actions required to achieve this reduction are outlined in the Climate Change and Carbon Management Plan and combine a mixture of technical, behavioural and procedural solutions. Alongside this the council signed up to the national 10:10 campaign for reducing carbon emissions by 10% during 2010.

The climate change strategy is to be revisited and updated in 2014.

### Green Deal Together

- The council is working with 'Green Deal Together', a 'Community Interest Company' working to provide a local Green Deal service.
- The aim of Green Deal Together is to provide residents with expert, independent advice, a great value Green Deal plan and excellent customer service delivered by trusted local installers.
- For further details please see the [Green Deal Together](#) website.
- [www.greendealtogether.org.uk/](http://www.greendealtogether.org.uk/)

## 8 Implementation of Action Plans

### **Air Balloon Roundabout Birdlip AQMA**

The Action plan for this AQMA was published in 2011. The trunk route that is the source of the pollution is outside of any measures that the district council can implement as it is a strategic trunk route maintained and run through the Highways Agency. The action plan centres around supporting green travel measures and the consideration of any new proposals there may be for improvements to the road.

A local air quality monitoring group met June 2012 to consider a proposal for changes to the lay out of the roundabout and traffic movements. The proposal was likely to have had very little impact on air quality. It was later rejected on the grounds of cost and no local support for the scheme as it was too disruptive. The Highways Agency continues to consider ways of improving traffic flow and reducing congestion in this area, Cotswold District Council will continue to keep abreast of the situation.

Current local initiatives are around lobbying central government for improvements to the road; in particular for upgrading a section of the trunk route near to the Air Balloon roundabout. This is for a stretch of road that is known as the “missing link” and is the only stretch that is not dual carriageway. This causes major congestion at peak times. Whilst not directly in the LAQMA any improvement to the free flow of the traffic may help the pollution levels. However, it remains that the area of most concern; where there is relevant exposure, is at the top of the duelled steep incline heavily used by a high volume of hgv's.

Work continues on the duelling of the railway line northwards from Kemble; this would provide a useful alternative for commuters.

As can be seen from table the level of NO<sub>2</sub> has remained fairly constant.

## **Conclusions and Proposed Actions**

### **8.1 Conclusions from New Monitoring Data**

There have been no significant trends or changes identified in this year's monitoring. The levels remain high within the AQMA at Birdlip. Since the last progress report 2013 the council has declared an air quality management area for a narrow length of Thames Street Lechlade.

Monitoring will continue in all of the sites, with continuous monitoring at Birdlip and Lechlade.

Further work will be undertaken for Lechlade towards producing an Action Plan for Thames Street Lechlade.

### **8.2 Conclusions relating to New Local Developments**

There are no new local developments that will require consideration in the next Updating and Screening Assessment at this time.

## **Proposed Actions**

Cotswold District Council will continue to maintain all the existing sites for diffusion tube monitoring. Where possible the two continuous monitors will be maintained. There will be no change to the Air Balloon Roundabout AQMA . The council will work towards producing an action plan for Thames Street Lechlade.

A Progress Report will be submitted for 2015.

# Appendix

## Appendix A: QA:QC Data

### Diffusion Tube Bias Adjustment Factors

Cotswold District Council used Gradko International Ltd to supply and analyse diffusion tubes. Bias adjustment factor of 0.95 was used for this data set from the national bias adjustment factors; version 03/14 overall factor from 24 studies.

### Discussion of Choice of Factor to Use

The National bias adjustment figure was used as it was felt to give greater confidence than a local factor and is consistent with previous reports.

### QA/QC of Diffusion Tube Monitoring

Gradko participates in the Workplace Analysis Scheme for Proficiency (WASP ) scheme and demonstrated good precision over all

Details can be found at this link:

[http://laqm.defra.gov.uk/documents/Tube\\_Precision\\_2014\\_version\\_03\\_14-Final.pdf](http://laqm.defra.gov.uk/documents/Tube_Precision_2014_version_03_14-Final.pdf)

**Quarterly summary of laboratories' performance in the WASP scheme over the preceding 12 months, (defra)**

The following table lists those UK laboratories undertaking LAQM activities that have participated in recent HSL WASP NO<sub>2</sub> PT rounds and the percentage (%) of results submitted which were subsequently determined to be **satisfactory** based upon a z-score of  $\geq \pm 2$  as defined in the report

WASP Round	WASP R117	WASP R118	WASP R119	WASP R120	WASP R121	WASP R122	WASP R123	WASP R124
<b>Round conducted in period</b>	April - June 2012	July - September 2012	October - December 2012	January - March 2013	April - June 2013	July - September 2013	October - December 2013	January - March 2014
<b>Gradko International</b>	100%	100%	100%	100%	100%	100%	100%	100%

Further details can be found at this link: <http://laqm.defra.gov.uk/diffusion-tubes/qa-qc-framework.html>

## Appendix B

Table 2.7 Table of diffusion tube results for 2013 in µgm

Location	Jan	Feb	March	April	May	June	July	Aug	Sept	Oct	Nov	Dec	Annual mean
													Bias adjusted (0.95)
Stow - Fosse Cottage	34.93	29.90	26.72	30.86	27.29	32.99	34.44	43.51	48.15	38.21	1.30	39.69	30.71
Lechlade Thames St 1	41.86	40.62	39.89	43.08	29.17	40.90	40.86	41.09	37.06	40.62	44.03	40.47	37.97
Lechlade Thames St Cott No4	46.34	39.29	48.39	37.51	38.61	48.24	47.47	41.81	46.97	49.94	54.05	44.02	42.96
Lechlade 2 Thames St	40.21	37.02	31.75	37.35	36.59	39.28	41.33	43.73	48.91	45.20	58.98	43.49	39.89
Lechlade High St	43.03	36.15	34.57	38.00	27.78	22.23	23.15	34.02	34.59	36.63	43.21	39.12	32.65
Fairford London Road	40.22	29.85	16.18	26.03	23.70	30.06	36.74	27.41	23.18	30.23	35.25	36.26	28.11
Fairford Bridge St	41.58	33.93	30.30	33.65	31.29	36.16	37.66	34.58	36.55	39.45	38.21		33.97
Cirencester London Rd	38.67	43.22	34.21	32.23	33.42	33.09	33.75	28.30	34.90	33.97	36.68	37.99	33.28
Tetbury Church St	36.94	32.21	26.74	29.88	33.94	32.57	30.14	30.48	43.19	35.42	34.94	38.30	32.04
Tetbury Long St	30.32	29.01	19.04	24.84	24.84	21.50	25.92	25.96	30.80	29.13	40.10	35.45	26.67
Birdlip Cottages	66.57	56.94	46.31	65.24	59.11	39.51	67.51	73.68	60.02	73.68	93.43	80.24	61.93
Birdlip Air balloon 2	43.74	43.17	40.63	47.79	42.22	47.25	49.07	44.35	45.64	51.25	40.38	37.32	42.18
Birdlip Air balloon 3	33.92	39.18	42.05	43.17	43.69	45.36	54.40	45.84	40.25	54.91	43.09	39.64	41.60
Birdlip air balloon A (Beer garden)	46.94	56.03	39.36	31.34	47.93	47.13	45.82	42.38	42.92	52.40	46.10	43.86	42.93
Birdlip air balloon C (car park)	28.46	29.63	28.44	24.93	25.29	26.90	27.32	26.49	28.20	36.28	36.67	28.01	27.44
Stow lodge	37.10	37.80	32.41	34.60	29.51	36.15	35.70	36.28	34.03	39.01	38.05		33.74

