



# 2013 Air Quality Progress Report for **Lewes District Council**

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

**1<sup>st</sup> September 2013**



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## Executive Summary

The aim of the Progress Report is to identify where there have been improvements in levels of particular air pollutants and where national air quality objectives are likely to be exceeded. This is achieved through collating monitoring data from continuous monitoring stations and the diffusion tube network. The report also looks at new development within the district, the level and type of industry present, and relevant policy changes all of which may have an impact upon air quality.

There has been a great deal of progress relating to the actions outlined in the AQAP, the full progress report can be found in chapter 9 of this report. Despite this progress the most recent monitoring data shows the annual mean AQO for nitrogen dioxide continues to be exceeded at a number of locations within the existing AQMA and as such the Lewes town AQMA should be maintained.

Further progress has also been made in Newhaven, a second location in the district that has been identified as having possible exceedences of the annual mean for nitrogen dioxide. Historically a number of tube locations have exceeded the annual mean for nitrogen dioxide but previous modelling work has demonstrated that the AQO for nitrogen dioxide is not being breached at relevant locations. More recent monitoring has continued to show exceedences and a Detailed Assessment submitted to DEFRA in February 2013 has now been accepted and based on these findings we are now required to declare an AQMA in Newhaven.

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# **1 Introduction**

## **1.1 Description of Local Authority Area**

The Lewes District is essentially split into two areas, in the north a predominantly rural area centred on Lewes, to the south a coastal strip where several towns merge into one urban area. This southern strip includes Telscombe Cliffs in the west, Peacehaven, Newhaven, and Seaford in the east.

The District has a population in the region of 91,000. The total area is 29,000 hectares. Lewes is the main town and the principal administrative and commercial centre within the District; it is also the County Town of East Sussex. A map of the District can be found in Appendix 4.

Major roads in the district include the A27 which runs east to west and bypasses Lewes. Lewes is a nodal point for several regional and local roads, including the A27, A26 and A275. Whilst the coastal strip of towns is served predominantly by the A26 and the A259.

Those living and working in the district enjoy an environment of exceptionally high quality. There are many ancient woodlands, chalk grasslands, heathlands and water meadows. This is reflected in the large number of Sites of Special Scientific Interest, National Nature Reserves and other forms of designation. Following the Secretary of States decision on 31 March 2009 just over half of Lewes district is now included in the South Downs National Park including the town of Lewes.

This high quality environment is a real economic and cultural asset, tourism is a major local industry worth over £60 million a year. Agriculture remains a major user of land within the district. Other businesses include brickworks, waste disposal facilities, scrap yards, a working port and several relatively large industrial estates in Lewes, Newhaven, Seaford, Peacehaven and in a variety of rural locations.

## **1.2 Purpose of Progress Report**

This report fulfils the requirements of the Local Air Quality Management 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 Local Air Quality Management 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.

### **1.3 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 microgrammes per cubic metre  $\mu\text{g}/\text{m}^3$  (milligrammes per cubic metre,  $\text{mg}/\text{m}^3$  for carbon monoxide) with the number of exceedences in each year that are permitted (where applicable).



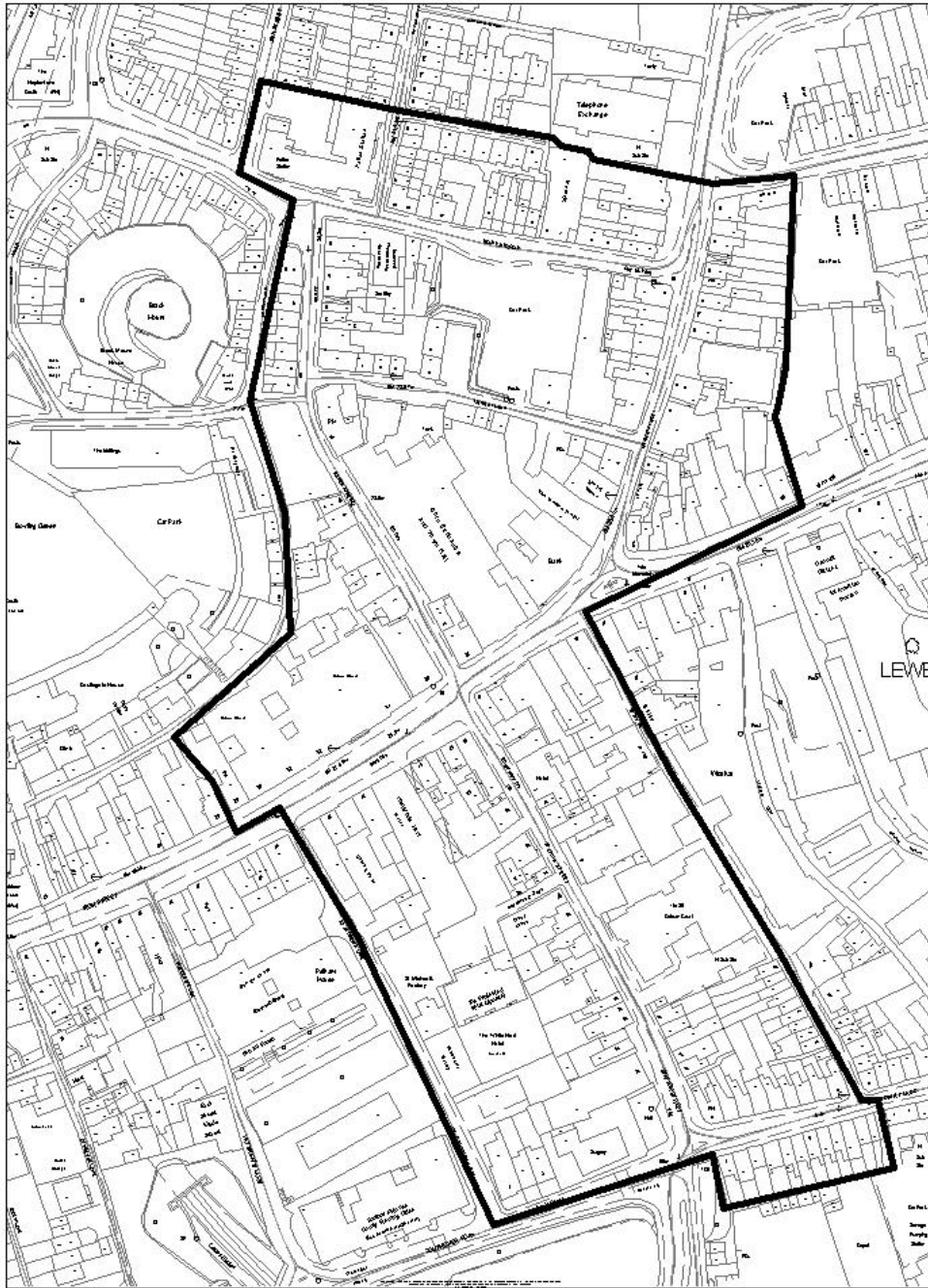
**Table 1.1 Air Quality Objectives included in Regulations for the purpose of LAQM in England**

Pollutant	Air Quality Objective		Date to be achieved by
	Concentration	Measured as	
<b>1,3-Butadiene</b>	2.25 µg/m <sup>3</sup>	Running annual mean	31.12.2003
<b>Carbon monoxide</b>	10 mg/m <sup>3</sup>	Running 8-hour mean	31.12.2003
<b>Lead</b>	0.50 µg/m <sup>3</sup>	Annual mean	31.12.2004
	0.25 µg/m <sup>3</sup>	Annual mean	31.12.2008
<b>Nitrogen dioxide</b>	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
<b>Particulate Matter (PM<sub>10</sub>) (gravimetric)</b>	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
<b>Sulphur dioxide</b>	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

## 1.4 Summary of Previous Review and Assessments

- First review and assessment round was completed in **July 2000**, concluded national air quality objectives were unlikely to be exceeded.
- Second round of Review and Assessment completed in **September 2004**, identified a need for a detailed assessment of air quality.
- Detailed Assessment (DA) undertaken in **April 2005**, predicted exceedance for the annual mean of nitrogen dioxide in Fisher Street, Lewes.
- AQMA declared for Lewes town centre in **June 2005**. See Appendix E.
- Third round of Review and Assessment Updating and Screening Assessment was completed in **August 2006**. Identified potential exceedances of the annual mean air quality objective for nitrogen dioxide in Market Street, Lewes, a road already within the existing AQMA area. An exceedance of the nitrogen dioxide annual mean objective was also indicated at Southway in Newhaven.
- Third round of Review and Assessment Progress Report and Detailed Assessment was completed in **November 2008**. The findings of the Progress Report were accepted, however the DA was not accepted by DEFRA due to concerns relating to the modeling methodology. See Appendix A for feedback.
- Updating and Screening Assessment was completed in **June 2009**. The findings of the report were broadly accepted. See Appendix B for feedback.
- Further modeling carried out for the Newhaven area found no likely exceedance of the AQO for NO<sub>2</sub> when measured as an annual mean. The report was submitted to DEFRA in **March 2010** and was approved in **April 2010**. See Appendix C for feedback.
- Progress report submitted **May 2010**. Showed a number of tube locations adjacent to the Newhaven gyratory exceeding 40 µg/m<sup>3</sup>. DEFRA requested detailed assessment **October 2010**. Lewes District Council agreed to carry out using 2010 continuous monitoring data and newly acquired modeling software.
- Further Detailed Assessment submitted for Newhaven **February 2013**. Findings recommend declaration of AQMA in Newhaven, the report is accepted by DEFRA.
- Updating and Screening Assessment submitted **April 2013** and approved in **July 2013** recommending Lewes AQMA is maintained.

Figure 1.1 Map(s) of AQMA Boundaries



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**Air Quality Management  
Area  
Lewes Town Centre (No.1) Order 2005.**

## **2 New Monitoring Data**

### **2.1 Summary of Monitoring Undertaken**

#### **2.1.1 Automatic Monitoring Sites**

Lewes District Council has historically undertaken continuous monitoring of air quality pollutants at two roadside locations, Telscombe Cliffs and West Street, Lewes (within the AQMA).

In February 2010 the Telscombe Cliffs site was decommissioned and mothballed until a new site became available. In March 2011 a new site was acquired at Denton Primary School, Newhaven. This site has now been relocated in July 2013, the data and details of this new site will be detailed in future LAQM reports. The principle aim of this site is to monitor the emissions from the Newhaven ERF. It monitors the same species as before, PM10 (particulates with an aerodynamic diameter of 10 microns or less), NO<sub>x</sub>, and ozone with the addition of a new FDMS PM2.5 (particulates with an aerodynamic diameter of 2.5 microns or less). The data from this site is reported in section 2.2 of this document.

In February 2011 the power supply for the West Street site was terminated. A new roadside site was identified within the AQMA and the site was re-commissioned in early June 2011. The data from this site is reported in section 2.2 of this document.

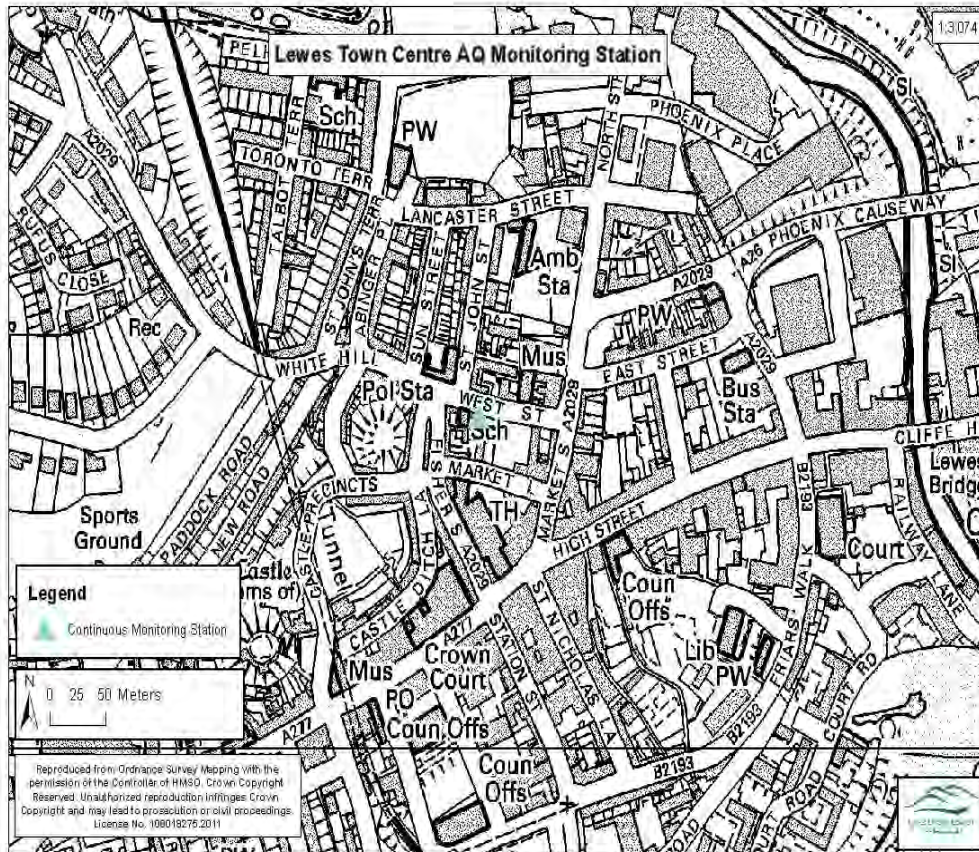
In October 2012 the Sussex Air mobile monitoring station was installed adjacent to the A26, Newhaven. This installation monitored the roadside emissions of PM10 and NO<sub>x</sub>. This data is reported in section 2.2 of this document.

At both of the fixed monitoring stations nitrogen dioxide is measured using a chemiluminescence analyser, a Horiba APNA Ambient NO<sub>x</sub> Monitor, whilst PM10 is measured using a RP TEOM (Series 1400a). The PM 2.5 (Denton School only) is measured using a Thermo Scientific TEOM 1400ab 8500 FDMS.

The calibrations and filter change data is sent to Environment Research Group based at Kings College, London (ERG) every two weeks. ERG collect the data from the stations on a daily basis, verifying the data against other monitoring stations in the south-east and ratifying it using the calibration information supplied. Local Site Operations (LSO) duties are carried out by trained officers from the Environment Team within Lewes District Council's Planning and Environmental Health department.

Historically PM10 data has been adjusted using a correction factor of 1.3. In line with latest guidance this data will now be adjusted using the VCM provided by Kings College London.

**Figure 2.1 Map(s) of Automatic Monitoring Sites**



**Table 2.1 Details of Automatic Monitoring Sites**

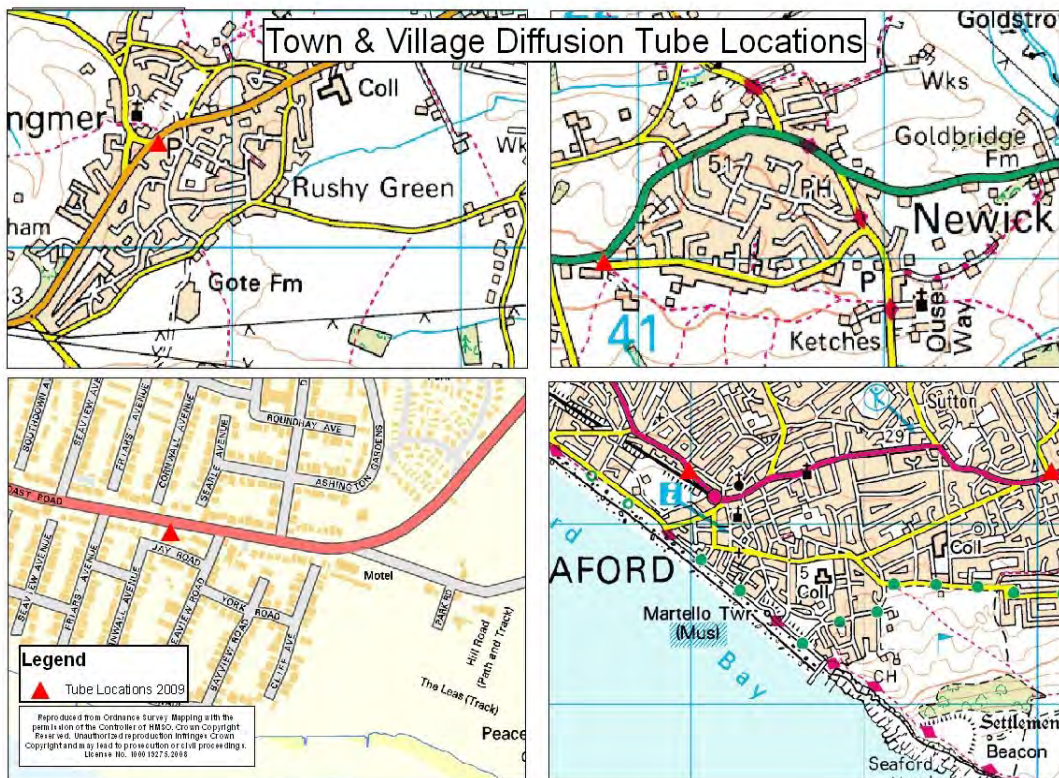
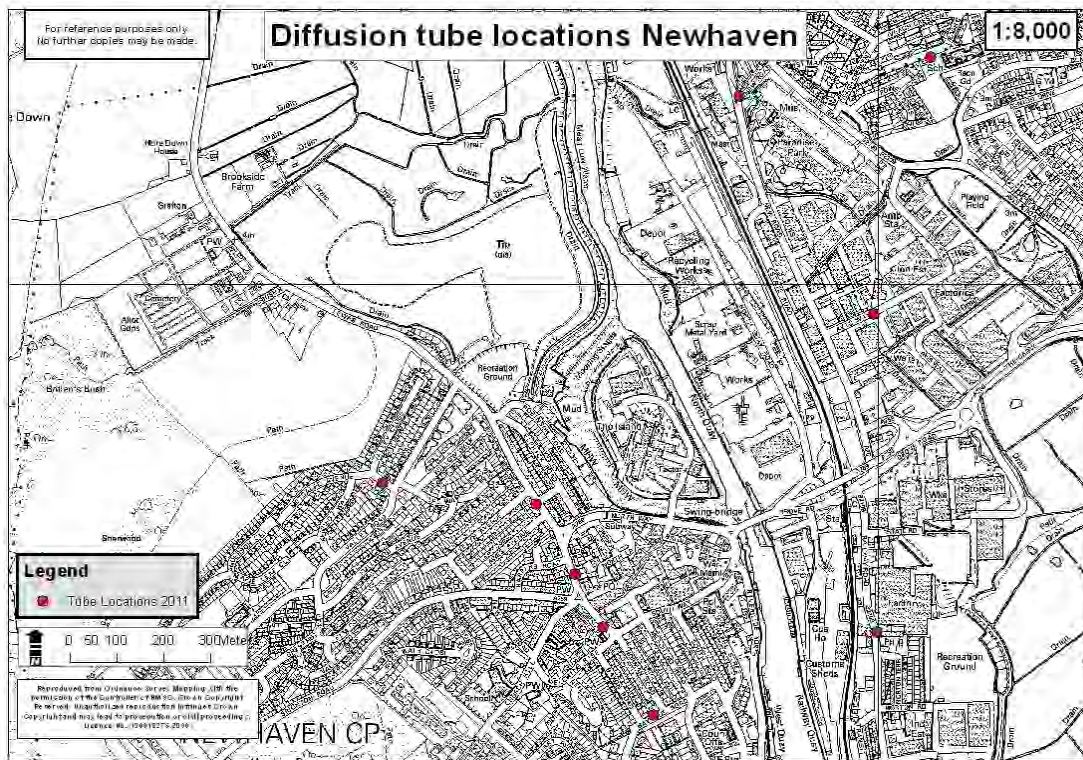
Site Name	Site Type	OS Grid Ref	Inlet height (m)	Pollutants Monitored	In AQMA?	Monitoring technique	Relevant Exposure? (Y/N with distance (m) to relevant exposure)	Distance to kerb of nearest road (N/A if not applicable)	Worst-case Location ?
LS2 – Lewes Town West Street (Decommissioned Feb 2011)	Roadside	X 541510 Y 110264	2m	NO2 Pm10	Y	TEOM	Y (10m)	2m	Y
LS5 – Lewes Town West Street (commissioned May 2011)	Roadside	X 541543 Y 110245	2m	NO2 Pm10	Y	TEOM	Y(2m)	2m	Y
Sussex Mobile Lab	Roadside	X 544741 Y 102264	1.8m	NO2 PM10	N	TEOM	N	6m	N
LS4 – Denton School, Newhaven	Urban background	X 545109 Y 102482	3m	NO Pm10 /2.5 Ozone	N	Pm 2.5 by FDMS	Y(10m)	20m	N

### **2.1.2 Non-Automatic Monitoring Sites**

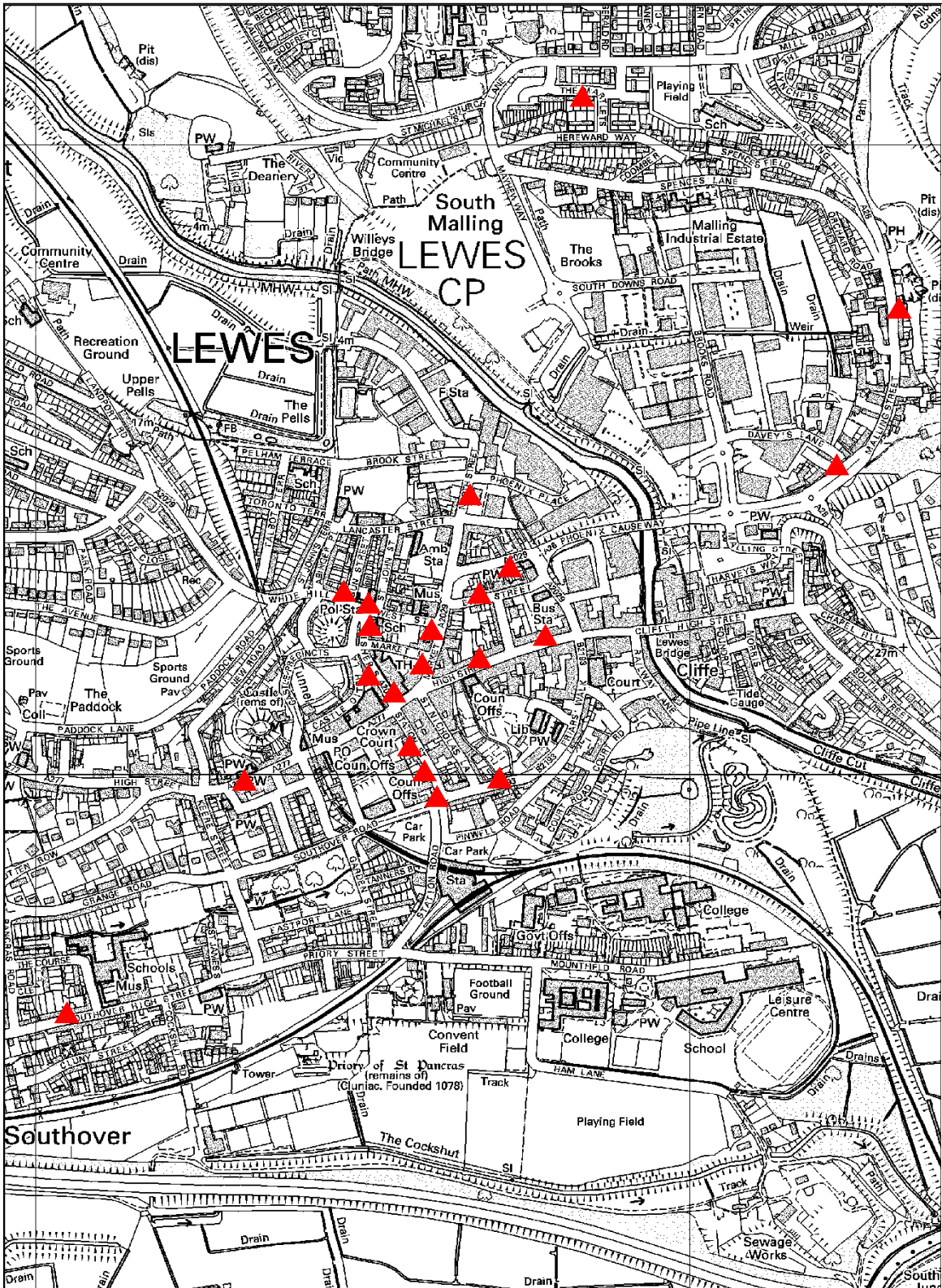
The Council also monitors NO<sub>2</sub> using diffusion tubes across the district. The monitoring is undertaken using diffusion tubes supplied and analysed by Gradko. Details relating to the quality control and assurance of this monitoring can be found in Appendix A.

Historically a tube has been co-located at the continuous monitoring site LS2 (now LS5) and is <0.50m from the inlet to the Horiba APNA Ambient NO<sub>x</sub> Monitor. Currently a tube is also co-located at LS4 <0.50m from the inlet to the Horiba APNA Ambient NO<sub>x</sub> monitor. The bias adjustment factor of 0.94 has been used as calculated from the 2012 collocation study as supplied by the DEFRA helpdesk. All monitoring data have been ratified following the methods described in LAQM.TG(09).

**Figure 2.2a Maps of Non-Automatic Monitoring Sites**







LAQM Progress Report 2013

**Table 2.2 Details of Non- Automatic Monitoring Sites**

Tube Number	Location	In AQMA?	Type and m to kerb	Site Height	X	Y	Pollutant	Relevant Y/N with distance(m) to relevant exposure	Worst case Location?
1	Fisher Street - West	AQMA - Lewes	K (1)	3	541 528	110 141	NO <sub>2</sub>	N	Y
	Fisher Street - East	AQMA - Lewes	K (1)	3.5	541 540	110 806	NO <sub>2</sub>	N	Y
2	18 Fisher Street	AQMA - Lewes	K (1)	2.5	541 504	110 234	NO <sub>2</sub>	Y(1m)	Y
3	Station Street	AQMA - Lewes	K (1)	2	541 603	110 001	NO <sub>2</sub>	Y(1m)	Y
4	Station St/Lansdown Place	AQMA - Lewes	R (2)	3	541 540	110 130	NO <sub>2</sub>	N	Y
	Westgate, High Street	AQMA - Lewes	K (1)	1.8	541 285	109 969	NO <sub>2</sub>	Y(5m)	Y
5	West Street AQMS (New)	AQMA - Lewes	R (2)	1.8	541 543	110 245	NO <sub>2</sub>	Y(2m)	Y
6	Mount Pleasant	AQMA - Lewes	R (2)	3	541 478	110 277	NO <sub>2</sub>	Y(10m)	Y
	West St/Market St	AQMA - Lewes	K (1)	2.5	541 611	110 243	NO <sub>2</sub>	Y(5m)	Y
7	Market Street	AQMA - Lewes	K (0.5)	2.5	541 598	110 174	NO <sub>2</sub>	Y(5m)	Y
8	204 High Street	Lewes	R (2)	3	541 667	110 176	NO <sub>2</sub>	Y(3m)	Y
	North Street	Lewes	K (1)	3	541 643	110 376	NO <sub>2</sub>	Y(5m)	
9	School Hill	Lewes	K(1)	2.5	541 770	116 210	NO <sub>2</sub>	N	Y
	Little East Street	Lewes	R(2)	1.8	541 726	110 335	NO <sub>2</sub>	Y (1m)	Y
10	East Street	Lewes	K (1)	3	541 669	110 282	NO <sub>2</sub>	Y (0m)	Y
	Lansdown Place	Lewes	R (1.5)	3	541 780	110 030	NO <sub>2</sub>	Y(2m)	
11	Southover High St.	Lewes	K (1)	3	541 055	110 617	NO <sub>2</sub>	Y (1m)	Y
	Cuilfail Tunnel/A26	Lewes	R (5)	3	542 233	110 493	NO <sub>2</sub>	Y (1m)	
12	159 Malling St	Lewes	K (1)	3.5	542 316	110 726	NO <sub>2</sub>	Y(5m)	Y
	Malling Close	Lewes	BG	3	542 254	110 806	NO <sub>2</sub>	Y(10m)	
13	Clare Rd	Lewes	BG	3	541 842	110 654	NO <sub>2</sub>	Y(10m)	
	9 Southway	Newhaven	K (1)	2.5	544 338	101 388	NO <sub>2</sub>	Y(5m)	Y
14	16 Southway	Newhaven	K(1)	2.5	544 414	101 271	NO <sub>2</sub>	Y(5m)	Y

Tube Number	Location	In AQMA?	Type and m to kerb	Site Height	X	Y	Pollutant	Relevant Y/N with distance (m) to relevant exposure	Worst case Location?
24	8 Bay view Rd	Newhaven	BG	2.5	544 416	101 356	NO <sub>2</sub>	Y(3m)	
25	1 Valley Close	Newhaven	BG	2.5	544 522	101 087	NO <sub>2</sub>	Y(10m)	
26	Avis Way	Newhaven	K (1)	3	544 981	101 934	NO <sub>2</sub>	N	
27	Heighton Cr	Newhaven	BG	1.8	544 908	102 704	NO <sub>2</sub>	Y(10m)	
28	Railway Road, Newhaven	Newhaven	K (1)	3	545 072	101 251	NO <sub>2</sub>	Y(5m)	
29	Lewes Road	Newhaven	K (2)	3	544 273	101 532	NO <sub>2</sub>	Y(5m)	Y
30	A259 South Cst Rd	Peacehaven	R (1.5)	2.5	542 175	100 673	NO <sub>2</sub>	Y(10m)	Y
31	A272 Allington Rd	Newick	R (3)	1.8	540 868	120 995	NO <sub>2</sub>	N	
32	High St	Ditchling	K (0.5)	3	532 605	115 201	NO <sub>2</sub>	Y(5m)	Y
33	A259 Chyngton Gdns	Seaford	R (1.5)	3	550 077	992 91	NO <sub>2</sub>	Y(10m)	Y
	New Road	Newhaven	R (1)	1.8	544 703	102 400	NO <sub>2</sub>	Y(10m)	Y
35	Denton AQMS	Newhaven	BG	3	545 109	102 482	NO <sub>2</sub>	Y(20M)	

## **2.2 Comparison of Monitoring Results with Air Quality Objective**

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

Lewes District Council operates a number of diffusive sampling sites. In addition, automatic (chemiluminescent) monitors are permanently located at 2 locations, including within the AQMA, giving hourly readings of nitrogen dioxide concentration. All data have been ratified and extrapolated to cover a full calendar year where necessary, as indicated in the technical guidance TG(09). As table 2.3 illustrates the annual mean for NO<sub>2</sub> has not been exceeded at the West Street, Lewes site. Similarly the Denton School Newhaven site has also not exceeded the annual mean AQO. In addition the 1 hour mean value of 200ug/m<sup>3</sup> has also not been exceeded at either location.

The LS5 station located within the Lewes AQMA showed annual mean concentrations of 20 µg/m<sup>3</sup>, which is a year on year decrease of 0.5µg/m<sup>3</sup>. These findings are discussed in more detail in section 8.1.

The LS4 station located at Denton School, Newhaven showed a negligible year on year change with an annual mean concentration of 12.9 µg/m<sup>3</sup> and again at no time did the concentration of the 1 hour mean exceed 200ug/m<sup>3</sup>.

**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 2012 % <sup>b</sup>	Annual Mean Concentration (µg/m <sup>3</sup> )				
					2008* <sup>c</sup>	2009* <sup>c</sup>	2010* <sup>c</sup>	2011* <sup>c</sup>	2012 <sup>c</sup>
LS4	Background	N	NA	100%	NA	<b>NA</b>	NA	12.8 (Annualised 11.76)	12.9
LS5	Roadside	Y	NA	92%	NA	NA	NA	18.3 (Annualised 20.50)	20.0

*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>), if valid data capture is less than 75%*

*\* Annual mean concentrations for previous years are optional*

**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 2012 % <sup>b</sup>	Number of Hourly Means > 200µg/m <sup>3</sup>				
					2008* <sup>c</sup>	2009* <sup>c</sup>	2010* <sup>c</sup>	2011* <sup>c</sup>	2012 <sup>c</sup>
LS4	Background	N	NA	100%	NA	<b>NA</b>	NA	0	0
LS5	Roadside	Y	NA	92%	NA	NA	NA	0	0

*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*

**Table 2.5 Results of NO<sub>2</sub> Diffusion Tubes 2012**

<b>Location</b>	<b>Site Type</b>	<b>Within AQMA?</b>	<b>Triplicate or Co-located Tube</b>	<b>Full Calendar Year Data Capture 2012 (Number of Months or %) <sup>a</sup></b>	<b>2012 Annual Mean Concentration (µg/m<sup>3</sup>) - Bias Adjustment factor = XX <sup>b</sup></b>
LDC 12 Valley Close - Newhaven	Roadside	Y	N	75	14.7
LDC 10 - 9 Southway - Newhaven	Roadside	Y	N	75	34.5
LDC - 16 Southway - Newhaven	Roadside	Y	N	75	39.1
LDC 11 - Lewes Rd - Newhaven	Roadside	Y	N	58	29.3
LDC 7 - Willow Estate, Avis Way - Newhaven	Roadside	Y	N	75	21.0
LDC 8 - 8 Bay View Rd - Newhaven	Roadside	Y	N	75	17.1
LDC 5 - 11 Malling St - Lewes	Roadside	Y	N	75	13.7
LDC 6 - 17 Clare Road - Lewes	Roadside	N	N	75	15.1
LDC 25 - Westgate Chapel	Roadside	N	N	75	32.2
LDC 26 - Mount Pleasant	Roadside	N	N	66	24.2
LDC 27 - West St Police Station	Roadside	Y	N	75	28.3
LDC - 18 Fisher Street	Roadside	Y	N	75	28.3

Location	Site Type	Within AQMA?	Triplicate or Co-located Tube	Full Calendar Year Data Capture 2012 (Number of Months or %) <sup>a</sup>	2012 Annual Mean Concentration ( $\mu\text{g}/\text{m}^3$ ) - Bias Adjustment factor = XX <sup>b</sup>
LDC 36 - Fisher St West	Roadside	N	N	75	<b>46.7</b>
LDC 1- Fisher Rd East	Roadside	N	N	75	<b>43.8</b>
LDC 29 - Market St	Roadside	Y	N	75	39.5
LDC 28 - West St/Market St	Roadside	Y	N	75	25.9
LDC 31 - North St	Roadside	Y	N	75	25.7
LDC 33 - Cuilfail Tunnel/Thomas St	Roadside	Y	N	75	31.5
LDC 4 - 159 Malling St - Lewes	Background	N	N	75	30.1
LDC - 6 East Street (NEW from Mar 07)	Roadside	N	N	75	25.4
LDC 30 - Little East St	Roadside	N	N	66	25.4
LDC - School Hill (NEW from Mar 07)	Roadside	N	N	75	<b>40.4</b>
LDC 34 - 204 High St	Roadside	N	N	75	<b>49.9</b>
LDC 35 - Walmer Lane/Lansdowne Terrace	Roadside	N	N	75	20.9
LDC 23 - Station St/Lansdown Terrace	Roadside	N	N	75	28.1



Location	Site Type	Within AQMA?	Triplicate or Co-located Tube	Full Calendar Year Data Capture 2012 (Number of Months or %) <sup>a</sup>	2012 Annual Mean Concentration ( $\mu\text{g}/\text{m}^3$ ) - Bias Adjustment factor = XX <sup>b</sup>
LDC 14 - Station Rd - Lewes	Roadside	<i>N</i>	<i>N</i>	66	32.6
LDC 37 - 27 Station St (inside)	Roadside	<i>N</i>	<i>N</i>	58	22.2
Newhaven - AQ monitoring Station	Roadside	<i>N</i>	<i>N</i>	66	12.3
New Road (Newhaven)	Roadside	<i>N</i>	<i>N</i>	50	28.4
ESCC 9 - South Coast Rd (Cornwall Ave)- Peacehaven	Roadside	<i>N</i>	<i>N</i>	75	22.7
ESCC 20 - A259 Seaford (nr Chynyton Gardens)	Roadside	<i>N</i>	<i>N</i>	75	35.1
ESCC 21 - A259 Seaford (nr St Crispans)	Roadside	<i>N</i>	<i>N</i>	75	26.6
ESCC 23 - Railway Rd - Newhaven	Roadside	<i>N</i>	<i>N</i>	75	25.2
ESCC 24 - 35 Heighton Crescent - Denton	Background	<i>N</i>	<i>N</i>	83	16.6
ESSCC 2 - Ringmer Village Hall	Roadside	<i>N</i>	<i>N</i>	66	24.8
ESCC 17 - A272 Allington Rd - Newick	Roadside	<i>N</i>	<i>N</i>	66	23.0

Location	Site Type	Within AQMA?	Triplicate or Co-located Tube	Full Calendar Year Data Capture 2012 (Number of Months or %) <sup>a</sup>	2012 Annual Mean Concentration ( $\mu\text{g}/\text{m}^3$ ) - Bias Adjustment factor = <b>XX</b> <sup>b</sup>
ESCC 18 - High St - Ditchling	Roadside	<i>N</i>	<i>N</i>	75	29.7
ESCC 22 - Southover High St - Lewes	Roadside	<i>N</i>	<i>N</i>	75	32.1

In bold, exceedence of the NO<sub>2</sub> annual mean AQS objective of 40 $\mu\text{g}/\text{m}^3$

Underlined, annual mean > 60 $\mu\text{g}/\text{m}^3$ , 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](http://laqm.defra.gov.uk/tools-monitoring-data/no2-falloff.html)" 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>).

**Table 2.6 Results of NO<sub>2</sub> Diffusion Tubes (2008 to 2012)**

Location	Site Type	Within AQMA?	Annual mean concentration (adjusted for bias) µg/m <sup>3</sup>				
			2008* (Bias Adjustment Factor = 0.72)	2009* (Bias Adjustment Factor = 0.85)	2010* (Bias Adjustment Factor = 0.85)	2011 (Bias Adjustment Factor = 0.83)	2012 (Bias Adjustment Factor = 0.94)
LDC 12 Valley Close - Newhaven	Background	N	15.5	15.6	17.3	13.0	14.7 (13.1%)
LDC 10 - 9 Southway - Newhaven	Roadside	N	34.3	42.2	44.9	40.9	34.5 (-15.6%)
LDC - 16 Southway - Newhaven	Roadside	N	41.2	47.6	51.2	43.4	39.1 (-9.9%)
LDC 11 - Lewes Rd - Newhaven	Roadside	N	30.1	35.1	36.5	30.6	29.3 (-4.2%)
LDC 7 - Willow Estate, Avis Way - Newhaven	Roadside	N	21.9	25.4	26.7	23.1	21.0 (-9.1%)
LDC 8 - 8 Bay View Rd - Newhaven	Background	N	17.6	22.8	24.1	17.1	17.1
LDC 5 - 11 Malling St - Lewes	Background	N	15.9	17.7	18.7	15.5	13.7 (-11.6%)
LDC 6 - 17 Clare Road - Lewes	Background	N	15.2	18.0	18.0	15.4	15.1 (-1.9%)
LDC 25 - Westgate Chapel	Roadside	N	35.4	39.9	41.7	33.4	32.2 (-3.6%)
LDC 26 - Mount Pleasant	Roadside	Y	22.7	29.1	28.0	26.6	24.2 (-9.0%)
LDC 27 - West St Police Station	Roadside	Y	27.6	36.1	33.6	24.6	28.3 (15.0%)

Location	Site Type	Within AQMA?	Annual mean concentration (adjusted for bias) $\mu\text{g}/\text{m}^3$				
			2008* (Bias Adjustment Factor = 0.72)	2009* (Bias Adjustment Factor = 0.85)	2010* (Bias Adjustment Factor = 0.85)	2011 (Bias Adjustment Factor = 0.83)	2012 (Bias Adjustment Factor = 0.94)
LDC - 18 Fisher Street	Roadside	Y	25	32.7	32.8	27.4	28.3 (3.3%)
LDC 36 - Fisher St West	Roadside	Y	44.3	53.6	53.5	43.8	46.7 (6.6%)
LDC 1- Fisher Rd East	Roadside	Y	43.9	56.1	57.9	48.3	43.8 (-9.3%)
LDC 29 - Market St	Roadside	Y	37.4	51.9	47.2	42.8	39.5 (-7.7%)
LDC 28 - West St/Market St	Roadside	Y	25.3	29.5	29.4	24.2	25.9 (7.0%)
LDC 31 - North St	Roadside	N	21.8	27.3	26.6	21.6	25.7 (19.0%)
LDC 33 - Cuilfail Tunnel/Thomas St	Roadside	N	28.2	33.3	32.0	32.9	31.5 (-4.3%)
LDC 4 - 159 Malling St - Lewes	Roadside	N	29.9	35.5	37.8	33.2	30.1 (-9.3%)
LDC - 6 East Street (NEW from Mar 07)	Roadside	Y	28.1	31.5	33.8	26.0	25.4 (-2.3%)
LDC 30 - Little East St	Roadside	Y	23.9	30.2	27.0	24.3	25.4 (4.5%)
LDC - School Hill (NEW from Mar 07)	Roadside	N	38.6	45.2	43.8	40.5	40.4 (- 0.2%)
LDC 34 - 204 High St	Roadside	N	44.3	59.9	55.3	54.2	49.9 (-7.9%)
LDC 35 - Walmer Lane/Lansdowne Terrace	Roadside	Y	21.4	27.9	29.4	20.5	20.9 (2.0%)

Location	Site Type	Within AQMA?	Annual mean concentration (adjusted for bias) $\mu\text{g}/\text{m}^3$				
			2008* (Bias Adjustment Factor = 0.72)	2009* (Bias Adjustment Factor = 0.85)	2010* (Bias Adjustment Factor = 0.85)	2011 (Bias Adjustment Factor = 0.83)	2012 (Bias Adjustment Factor = 0.94)
LDC 23 - Station St/Lansdown Terrace	Roadside	Y	27.5	32.4	33.1	27.2	28.1 (3.3%)
LDC 14 - Station Rd - Lewes	Roadside	Y	35.4	40.2	39.8	36.5	32.6 (-10.7%)
LDC 37 - 27 Station St (inside)	Roadside	Y	21.5	26.7	29.4	22.3	22.2 (-0.4%)
Newhaven - AQ monitoring Station	Background	N	NA	NA	NA	12.1	12.3 (1.7%)
New Road (Newhaven)	Roadside	N	NA	NA	NA	22.4	28.4 (26.8%)
ESCC 9 - South Coast Rd (Cornwall Ave)-Peacehaven	Roadside	N	25.1	29.8	27.0	20.2	22.7 (12.4%)
ESCC 20 - A259 Seaford (nr Chynyton Gardens)	Roadside	N	33.5	47.3	39.5	34.3	35.1 (2.3%)
ESCC 21 - A259 Seaford (nr St Crispans)	Roadside	N	25.1	32.2	33.7	21.9	26.6 (21.5%)
ESCC 23 - Railway Rd - Newhaven	Roadside	N	22.4	32.3	32.0	22.8	25.2 (10.5%)
ESCC 24 - 35 Heighton Crescent - Denton	Background	N	15	22.2	18.0	15.9	16.6 (4.4%)

Location	Site Type	Within AQMA?	Annual mean concentration (adjusted for bias) $\mu\text{g}/\text{m}^3$				
			2008* (Bias Adjustment Factor = 0.72)	2009* (Bias Adjustment Factor = 0.85)	2010* (Bias Adjustment Factor = 0.85)	2011 (Bias Adjustment Factor = 0.83)	2012 (Bias Adjustment Factor = 0.94)
ESSCC 2 - Ringmer Village Hall	Roadside	<i>N</i>	<b>22.6</b>	<b>30.2</b>	<b>29.4</b>	<b>24.3</b>	24.8 (2.1%)
ESSCC 17 - A272 Allington Rd - Newick	Roadside	<i>N</i>	<b>20.2</b>	<b>27.7</b>	<b>25.7</b>	<b>19.1</b>	23.0 (20.4%)
ESSCC 18 - High St - Ditchling	Roadside	<i>N</i>	<b>18.9</b>	<b>38.9</b>	<b>36.7</b>	<b>29.0</b>	29.7 (2.4%)
ESSCC 22 - Southover High St - Lewes	Roadside	<i>N</i>	<b>29.5</b>	<b>43.0</b>	<b>38.9</b>	<b>32.3</b>	32.1 (-0.6%)
<b>Average % +/- for all sites</b>							<b>1.6%</b>

In bold, exceedence of the NO<sub>2</sub> annual mean AQS objective of 40 $\mu\text{g}/\text{m}^3$

Underlined, annual mean > 60 $\mu\text{g}/\text{m}^3$ , 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\(09\) \(http://laqm.defra.gov.uk/technical-guidance/index.html?d=page=38\)](http://laqm.defra.gov.uk/technical-guidance/index.html?d=page=38), if full calendar year data capture is less than 75%

### **2.2.2 Particulate Matter (PM<sub>10</sub>)**

During 2012 Lewes District Council have monitored for PM<sub>10</sub> at two continuous monitoring locations, R & P Teom monitors were permanently located in Lewes town centre (LS5), within the AQMA, and also at Denton School, Newhaven giving hourly readings of PM<sub>10</sub> concentration. All data have been ratified, and extrapolated to cover a full calendar year where necessary, as indicated in the TG(09).

LS5 is a roadside location within the AQMA, however the closest residential receptors to LS5 are within 1 metre. This site achieved a 89% data capture rate for the 12 month monitoring period. The annual mean for PM<sub>10</sub> for this period is 21.4µg/m<sup>3</sup>. During the same period there were 6 exceedences of the 24-Hour Mean (50 µg/m<sup>3</sup>) air quality objective.

The LS4 Denton School site is a background location, primarily located to monitor any potential emissions from the newly commissioned incinerator. This site achieved a 88% data capture rate for the 12 month monitoring period. The annual mean for PM<sub>10</sub> for this period is 17.0 µg/m<sup>3</sup>. During the same period there were 3 exceedences of the 24-Hour Mean (50 µg/m<sup>3</sup>) air quality objective.

**Table 2.7 Results of Automatic Monitoring for PM<sub>10</sub>: Comparison with Annual Mean Objective**

Site ID	Site Type	Within AQMA?	Valid Data Capture for Monitoring Period % <sup>a</sup>	Valid Data Capture 2012 % <sup>b</sup>	Confirm Gravimetric Equivalent (Y or N/A)	Annual Mean Concentration (µg/m <sup>3</sup> )				
						2008* <sup>c</sup>	2009* <sup>c</sup>	2010* <sup>c</sup>	2011* <sup>c</sup>	2012 <sup>c</sup>
LS4	Background	N	NA	88%	Y	NA	NA	NA	17.2 <i>(Annualised 15.23)</i>	17.0
LS5	Roadside	Y	NA	89%	Y	NA	NA	NA	19.7 <i>(Annualised 17.14)</i>	21.4

In bold, exceedence of the PM<sub>10</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



**Table 2.8 Results of Automatic Monitoring for PM<sub>10</sub>: Comparison with 24-hour Mean Objective**

Site ID	Site Type	Within AQMA?	Valid Data Capture for Monitoring Period % <sup>a</sup>	Valid Data Capture 2012 % <sup>b</sup>	Confirm Gravimetric Equivalent (Y or N/A)	Number of Daily Means > 50µg/m <sup>3</sup>				
						2008* <sup>c</sup>	2009* <sup>c</sup>	2010* <sup>c</sup>	2011* <sup>c</sup>	2012 <sup>c</sup>
LS4	Background	N	NA	88%	Y	NA	NA	NA	1 (26) 90 <sup>th</sup> percentile	3 (27) 90.4 <sup>th</sup> percentile
LS5	Roadside	Y	NA	89%	Y	NA	NA	NA	1 (27) 90 <sup>th</sup> percentile	6 (32) 90.4 <sup>th</sup> percentile

In bold, exceedence of the PM<sub>10</sub> daily mean AQS objective (50µg/m<sup>3</sup> – not to be exceeded more than 35 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 data capture for full calendar year is less than 90%, include the 90.4<sup>th</sup> percentile of 24-hour means in brackets

\* Number of exceedences for previous years is optional

### **2.2.3 Sulphur Dioxide (SO<sub>2</sub>)**

We do not currently monitor for sulphur dioxide. There have been no significant changes to potential sources of this pollutant since the last updating and screening assessment carried out in 2006 that concluded that no further action was required

### **2.2.4 Benzene**

We do not currently monitor for benzene. There have been no significant changes to potential sources of this pollutant since the last updating and screening assessment carried out in 2006 that concluded that no further action was required.

### **2.2.5 Other Pollutants Monitored**

Lewes District Council monitor for ozone and have an automatic (chemiluminescent) analyser permanently located at the Denton School Newhaven LS4 site. The pollutant ozone is a trans boundary pollutant and is not a listed objective of the Air Quality Regulations for the purpose of Local Air Quality Management and as such the results of this monitoring will not be included in this report. Since March 2011 we have also monitored for PM<sub>2.5</sub> at the Denton School, Newhaven (LS4). This data is not presented in this report but like the ozone readings is available at [www.sussex-air.net](http://www.sussex-air.net).

## 2.2.6 Summary of Compliance with AQS Objectives

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

Concentrations within and adjacent to the Lewes town AQMA still exceed the annual mean objective for nitrogen dioxide the AQMA should remain.

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

## **3 New Local Developments**

### **3.1 Road Traffic Sources**

### **3.2 Other Transport Sources**

### **3.3 Industrial Sources**

**North Quay, Newhaven - Energy Recovery Facility (ERF)** – The commissioning of this facility commenced in June 2011 and finally became fully operational in October 2011. A full air quality impact assessment was carried out and submitted in support of the original planning application LW/05/2292 in 2005.

The air quality impact assessment was carried out using Atmospheric Dispersion Modelling System (ADMS) and considered the emissions from the ERF chimney stacks over a receptor grid of 21km<sup>2</sup>. The results of this assessment predicted a worst case modelled incremental annual average NO<sub>2</sub> of 2.5µg/m<sup>3</sup>. When added to the background NO<sub>2</sub> and monitored levels of NO<sub>2</sub> in the Newhaven and wider area the predicted concentrations fell below the AQO for NO<sub>2</sub> when measured as an annual mean.

The emissions arising from the increased HDV traffic servicing the facility were modelled using the Design Manual for Roads and Bridges (DMRB) screening tool, this predicted a very small incremental concentration of 0.8µg/m<sup>3</sup> at a worst case residential receptor adjacent to the A26.

There continues to be a great deal of interest relating to the emissions from the ERF. In response to this Lewes District Council secured S106 monies to site a continuous monitoring station in the Newhaven area in order to monitor NO<sub>2</sub>, PM<sub>10</sub> and PM<sub>2.5</sub>. The data collected from this continuous monitoring station is included in this report and thus far the levels monitored have not exceeded any of the relevant Air Quality Objectives.

### **3.4 Commercial and Domestic Sources**

Lewes District Council currently knows of one biomass boiler that meets the criteria for assessment. HMP Lewes installed a new boiler in 2008 with a rated output of 230kw and is a Binder wood pellet burning installation. The operator of the plant did not provide the necessary data in time for an assessment to be carried out for inclusion in the 2009 USA. The screening assessment for the plant was submitted in December 2010 and concluded that no detailed assessment would be required.

### **3.5 New Developments with Fugitive or Uncontrolled Source**

Lewes 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.

Lewes 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 Planning Applications

**Roche Site, Bell Lane, Lewes** – Mixed residential and commercial development consisting of 40 residential units and commercial space. Transport assessment submitted as part of the application with ESCC securing s106 monies for sustainable accessibility improvements.

**Sainsbury's Supermarket, The Drove, Newhaven** – store extension S106 Agreement proposed to secure the provision of a travel plan, an upgrade to the bus lay-by, car park signage, cycle storage improvements and a financial contribution for off-site highway improvements and accessibility, and real-time information signs on the A259.

**Eastside, Newhaven** - Mixed residential and commercial development consisting of 188 residential properties, supermarket and petrol station.

**North Street Quarter, Lewes** – Pre application discussions with developer and consultants has highlighted the need for a full air quality impact assessment to understand the potential impact of this large residential development on traffic movement in Lewes.

## 5 Air Quality Planning Policies

Though not yet adopted the Air Quality and emissions mitigation guidance for Sussex is currently out for consultation. The guidance has been developed in response to the changes in the national planning policy through the National Planning Policy Framework. The guidance has been developed by members of the Sussex Air Quality Partnership. The purpose of the guidance is to:

- Provide a Sussex-wide approach for assessing potential air quality impacts from development and transport related emissions and provide an consistent approach to mitigating those impacts.
- Provide technical advice to local planning authorities on how to deal with planning applications that could have an impact on air quality.

Following the consultation it is hoped that the guidance will be used by Lewes District Council when considering new developments.

## 6 Local Transport Plans and Strategies

East Sussex County Council were successful in securing £3.7m of Local Sustainable Transport Funding (LSTF) in 2012 from the Department for Transport, to deliver a programme of practical and attractive sustainable travel solutions for people living and working in Lewes, Newhaven and Eastbourne. The funding award has allowed ESCC to bring forward measures identified in ESCC LTP3 Implementation Plan earlier than programmed.

The projects include improvements to walking & cycling routes within and connecting the three towns and improvements to interchange for pedestrians, cyclists and public transport users at Lewes Station. Real Time Passenger Information will be rolled out on a phased approach on Brighton & Hove Bus routes 28/29 which serve Brighton, Lewes/Ringmer, Uckfield and Tunbridge Wells. It will also be delivered on additional bus routes in the Lewes, Newhaven and Eastbourne areas, including the coastal route between Brighton and Eastbourne. This will be complemented by improvements to bus stop infrastructure and the walking routes to these.

A cycle engagement project called 'Bike It' is being delivered by Sustrans and involves officers working intensively across schools and workplaces to promote cycling. A new social enterprise has been established to operate a 'Wheels 2 Work Scheme'. This provides the loan of motorcycles, mopeds or cycles to help improve access to work, training and education. This is supported by motorcycle dealership, repair and maintenance workshop and MOT testing station to help the social enterprise to become financially sustainable in the future.

The programme is being enhanced and will embed sustainable travel over the longer term by supporting and investing in existing and new sustainable travel initiatives delivered by the local district council and local community groups.

In addition to the LSTF transport infrastructure works for walking, cycling and public transport a number of schemes are coming forward through the Local Transport



Integrated Capital Programme that support the AQMA's in these towns. This includes the Newhaven Interchange scheme which will improve interchange for public transport and rail users at Newhaven town station. This has been identified for potential construction during 2014/15.

#### White Hill/Fisher Street:

The scheme was completed in April 2013 – ESCC and LDC are now undertaking an 18 month monitoring exercise to assess the impacts of the scheme on traffic flow and pollution levels in surrounding streets.

#### Newhaven Ring Road:

A consultant has been appointed to work alongside ESCC to undertake the development of options for the Ring Road to accommodate future growth in Newhaven alongside the air quality issue.

#### Newhaven Port Access Road:

Last month ESCC appointed a design consultant to support with the next stage of the scheme. The intention will be to develop the scheme design such that the risks and costs of the project are better known and understood with a view to commencing the procurement process for the main works contract later next year.

## **7 Implementation of Action Plans**

Lewes District Council declared an AQMA in relation to a likely breach of the nitrogen dioxide (annual mean) objective as specified in the Air Quality (England) Regulations 2000 for Lewes town centre in June 2005. Following this declaration a further assessment was made of the sources of this pollutant in order to produce an effective air quality action plan. The drafting of this action plan took 18 months but the final AQAP was not formally adopted by committee until June 2009. This progress report is the third update on the 28 measures that were included in the final AQAP. It is important to note that this is a working document and as the measures are delivered or following further investigation are deemed not viable and removed, the AQAP will reflect this.

Each measure has also been colour coded Green (delivered), Amber (in progress) or Red (no significant progress to date).

**Table 9.1 Action Plan Progress**

ID	MEASURE (Actions)	Lead (Partners)	Air Quality Impact within AQMA	Wider Impacts	Cost	Timescale	Rank (score)	Status of Measure
<i>Traffic Management And Road Schemes</i>								
<b>M1</b>	<b>White Hill / Fisher Street / West street scheme (LTP)</b> Change of priority at Commercial Square to improve flow in Fisher Street; review traffic signals at Station Street; greater priority to pedestrians. Two phases: (a) Experimental change in junction priority (b) Formalise priority working including other works in the area	ESCC	HIGH (3) 4-6.5 ug/m3 or 9-12% red in NO <sub>2</sub> (Fisher Street) Some air quality benefits will be achieved from the experimental scheme	+ Congestion (Fisher St & Station St), safety, walking	(a) LTP [£30K] (3)  (b) LTP [£250K]	(a) Evaluation of safety and environment report to be produced Summer 2010.  (b) Med 2011 and 2012	<b>A(9)</b>	Priority change and highway improvements completed in March 2013, increased traffic count and AQ monitoring undertaken for trial 18 month period underway.
<b>M2</b>	<b>Beddingham Crossing (LTP)</b> Rebuilding the Southerham and Beddingham roundabouts on the A27 outside Lewes and a new railway bridge to avoid queuing at Beddingham rail crossing.	HA	Low (1) Potential reduction in through traffic	Reduced congestion & emissions on A27 (potential increase in traffic through town likely during construction phase)	0	Major engineering works completed Oct 2008	-	Completed by Highways Agency summer 2009
<b>M3</b>	<b>Lewes Town Centre 20mph zone</b> Provision of 20mph area in addition to the existing 20mph Zone. Will include majority of the AQMA.	ESCC	Low (1) Potential deterrent for through traffic; reduction in start-stop emissions	Safety, walking, cycling, congestion,	LTP [£25K] (3)	No timescale at present	<b>B(7)</b>	Implemented 2012

ID	MEASURE (Actions)	Lead (Partners)	Air Quality Impact within AQMA	Wider Impacts	Cost	Timescale	Rank (score)	Status of Measure
M4	<b>Phoenix roundabout and Eastgate bus priority (LTP)</b> Introduce a roundabout at the Phoenix Causeway and two-way traffic for Eastgate Street; create a bus priority lane and introduce pedestrian and cycle friendly features.	ESCC	Reduction in traffic & recirculation	Any reduction could be offset by increased traffic generated from Phoenix development	S106 Funding	Long	TBA	Scheme funding was reliant on large redevelopment and associated s106 monies. Development proposal shelved. Now in communication with new developer.
M5	<b>The Living Cliffe (LTP)</b> Creation of pedestrian zone in Cliffe High Street with restricted vehicular access. Introduction of 20mph zone to vehicles allowed to enter the zone (e.g. for deliveries)	ESCC	Low (1) Existing through-traffic in Cliffe High Street will tend to go across Phoenix Causeway via School Hill and Market Street until Phoenix Roundabout scheme is implemented	Improved safety, walking & cycling facilities, reduced impact of car outside the AQMA.	LTP [£250K] (2)	Short(3) Construction underway, completion summer/autumn 2009	B(6)	Completed Autumn 2009
M6	<b>Offham Road Pedestrian Priority Scheme (LTP)</b> Improvement to pedestrian facilities and vehicle speed management.	ESCC	Low (1) Potential reduction in car trips to local school (due to increased safety)	Improved safety, walking & cycling facilities, reduced impact of car outside the AQMA.	LTP [£300K] (2)	Medium (2) Part construction planned for 2010/2011. Currently no programme for remaining sections due to funding constraints	B(5)	Mini roundabout at The Avenue and Offham Road construction completed in August 2010. Remaining construction on hold due to funding constraints

ID	MEASURE (Actions)	Lead (Partners)	Air Quality Impact within AQMA	Wider Impacts	Cost	Timescale	Rank (score)	Status of Measure
M7	<p><b>Ringmer –Lewes cycleway (LTP)</b> Introduction of off-road cycleway on the Lewes-Ringmer road link – heavily used by commuters from Ringmer to the Town Centre. Scheme split into two</p> <p>(a) Phase 1 (Eastern section) (b) Phase 2 (Western section)</p>	ESCC	Low (1) Potential reduction in incoming traffic, however benefits of the cycleway will not be achieved until the complete route is constructed.	Cycling	<p>a) S106 £150K</p> <p>b) LTP (£350K) (2)</p>	<p>a) Designs completed for complete route 2009. First phase construction likely Summer 2010, b) Remaining sections subject to identifying future funding(2)</p>	<b>B(5)</b>	<p><b>Eastern section</b> design completed, land negotiations closed and 600 metre completed 2010.</p> <p><b>Western section</b> design work being progressed in 2012/13. Funding now secured for construction by March 2015.</p>
M8	<p><b>Lewes Railway Station Forecourt Scheme (LTP)</b> Improved facilities for pedestrian, buses and taxis</p>	ESCC	Low (1)	Sustainable traffic modes, accessibility	LTP [£15K] (3)	Medium(2) Ownership and repairs to bridge have delayed any progress	<b>TBA</b>	<p>LSTF monies have allowed options to be explored and identify next design steps. New 150 covered bike storage to be installed in 2014.</p>
<i>Emissions Management</i>								
	<b>Encourage use of low emission vehicles and fuels</b>	Targeted through other measures (e.g. travel plans, LDC Waste & Recycling schemes, links to Climate Change)						
	<b>Reduce emissions from buses</b>	Targeted through partnership work with local bus operators and measures described above						

ID	MEASURE (Actions)	Lead (Partners)	Air Quality Impact within AQMA	Wider Impacts	Cost	Timescale	Rank (score)	Status of Measure
<b>M9</b>	<b>Target local freight distribution</b> a) Work with local business & freight operators to collate relevant data (i.e. delivery times, parking issues) b) Encourage deliveries outside congested periods c) Provide eco-driving training d) Investigate production of local "delivery maps" e) Increase or reallocate loading bays	LDC (local business & freight)	Low (1)	engagement of non-statutory stakeholders, use of non-mandatory agreements	£ (3)	Short (3)	<b>B (7)</b>	No progress
<b>M10</b>	<b>Better coordination of building and road works in the Lewes town area (LTP+)</b> Enhance existing LTP scheme to include building works and haulage route management	ESCC	Low (1)	Congestion internal communication within councils	(3)	Short (3)	<b>B (7)</b>	Informal partnership working between ESCC and LDC and also through the planning process and s61 agreements.
<b>M11</b>	<b>Target long-distance freight management &amp; heavy traffic through town (LTP+)</b> a) Intensification of existing LTP programmes b) Review signage on weight restrictions at access road links	ESCC (freight)	Low (1)		(3)	Short (3)	<b>B (7)</b>	ESCC started investigation into freight movement and impacts on town
<b>M12</b>	<b>Reduce emissions from idling vehicles</b> a) Install "cut engine cut pollution" signs (i.e. schools, taxi & bus terminals) b) Raise awareness through eco-driving campaign c) investigate enforcing legislation (issue fines)	LDC (HA, local business & community)	Low (1)	awareness	£ (3)	Short (3)	<b>B (7)</b>	a) Map to be produced pinpointing idling hotspots. b) Dialogue started taxi licensing officer to provide eco driving to hackney carriages c) Investigation underway to establish practicalities

ID	MEASURE (Actions)	Lead (Partners)	Air Quality Impact within AQMA	Wider Impacts	Cost	Timescale	Rank (score)	Status of Measure
								and resource demands.
<b>M13</b>	<b>Vehicle Emission Testing in central Lewes to measure vehicles emissions at pollution hotspots, supermarkets, car parks</b> a) Carry out VOSA roadside emission testing (RET) b) Use of remote sensing technology	LDC	Low(1)	awareness	£ (3)	Short (3)	<b>B (7)</b>	No further action
<i>Parking</i>								
<b>M14</b>	<b>Lewes Parking Management (LTP+)</b> Intensification of existing/planned LTP programmes a) extension of parking controlled area b) re-allocation of parking/loading spaces c) higher charges for long stay parking d) higher charges for residents second parking permits e) discounted permits for low-emission vehicles f) introduce car spaces for low-emission vehicles, car-clubs and car share g) maintain/increase provision of two-wheelers parking	ESCC	Moderate (2)	reduced traffic and congestion at peak time, reduced re-circulation, reduced emissions; + modal shift and sustainable travel behaviour	£ (3)	Short (3)	<b>A (8)</b>	Parking review and consultation undertaken 2013. c) New charges at longer stay car parks d) Residents permits now limited with new builds *f) 3 off street car park spaces provided for community car club. 2 EV charging bays now installed at Lewes railway station Investigating the provision of a low emission car park within the AQMA to include preferential

ID	MEASURE (Actions)	Lead (Partners)	Air Quality Impact within AQMA	Wider Impacts	Cost	Timescale	Rank (score)	Status of Measure
								parking.
<b>M15</b>	<b>Review of Lewes car parking system (LTP+)</b> a) Reallocation of existing car parks to reduce create a network of “park & walk” sites outside the AQMA b) Dedicated Short (3) and long stay car parks outside AQMA c) Installation of signage (i.e. with directions to car-parks) at access points to town	LDC	High (3)	Reduction of veh/km & congestion	££ (LTP, S106) (2)	Medium (2)	<b>A (7)</b>	LDC Planning have carried out an off street parking provision study (options for managing future demand and supply for off street parking) this will feed into the Local Development Framework
<i>Sustainable Transport</i>								
<b>M16</b>	<b>Partnership work with bus &amp; train operators (LTP+)</b> a) Reduce emissions: calculate emissions from existing bus fleet, route/fleet management (i.e. only cleaner vehicles through AQMA), eco-driving training b) Increase bus and train patronage: through supporting marketing campaign, extend use of subsidised/discounted fares, improve bus connection to key area, bus stop facilities, bus information c) Provision of additional undercover cycle parking at Lewes station	ESCC & LDC	Moderate (2)	+ accessibility, awareness	££ (2)	Short (3)	<b>B (7)</b>	a) Brighton and Hove bus drivers are now eco trained, preparing scheme to target other operators.  b) LSTF monies invested in real time bus information on



ID	MEASURE (Actions)	Lead (Partners)	Air Quality Impact within AQMA	Wider Impacts	Cost	Timescale	Rank (score)	Status of Measure
								<p>key routes through Lewes. In addition a travel choices marketing campaign will be delivered promoting bus and train patronage.</p> <p>c) New 150 space secure cycle hub to be installed at Lewes train station with card entry system.</p>
M17	<p><b>Lewes Town Travel Plans (LTP+)</b></p> <p>a) Review existing County &amp; District Travel Plans</p> <p>b) Accelerate implementation of workplace travel plans</p> <p>c) Accelerating implementation/review of local school travel plans (including colleges)</p> <p>d) Link to other actions (i.e. school monitoring projects, cycling and car-sharing promotion)</p> <p>e) Target shorter journeys – investigate personal travel planning marketing</p>	LDC & ESCC	HIGH (3)	+ lead by example, change in travel behaviour, education, awareness,	£ (LTP) (3)	Short (3)	<b>A (9)</b>	<p>a) LDC travel plan currently being reprioritised with a number of actions agreed by CMT including reduction in kgCo2/KM allowance on contract cars to 140.</p> <p>b) LSTF monies have allowed employment of bikeability officers for both school and workplace.</p>

ID	MEASURE (Actions)	Lead (Partners)	Air Quality Impact within AQMA	Wider Impacts	Cost	Timescale	Rank (score)	Status of Measure
								Including support in delivery of revised workplace travel plans. e) Investigated Sustrans campaign model but not progressing at this stage.
<b>M18</b>	<b>Car-sharing (LTP+)</b> Support LTP car-sharing & "travel-choice" campaign in Lewes town (i.e. through travel plans and ad-hoc events).	ESCC	Low (1)	+ travel behaviour	£ (LTP) (3)	Short (3)	<b>B (7)</b>	Travel choice campaign ongoing with currently 1400 members county wide
<b>M19</b>	<b>Car clubs</b> a) Support existing club in Lewes town (i.e. marketing) b) Accelerate introduction of new clubs c) Provide parking locations for car parks (Require car-clubs for large new developments – M21)	LDC (local community, developers)	Low (1)	+ travel behaviour + climate change	£ (3)	Short (3)	<b>B(7)</b>	2 vehicles launched July 2010. Currently 80 + members. 2 additional vehicles added with a 12 month trial of plug in hybrid proposed at Lewes railway station. 4 off street 1 on street locations in total.
<b>M20</b>	<b>Walking and cycling (LTP+)</b> a) Accelerate implementation of LTP actions within Lewes town (i.e. improvement to existing cycle routes, identify new ones, improve signage and facilities) b) Promoting walking and cycling as a healthy and more preferable option to car for local journeys	ESCC & LDC (local community)	Low (1)	+ accessibility	£ (LTP) (3)	Short (3)	<b>B (7)</b>	a) Work and school cycle challenge delivered September 2010. 2012 and

ID	MEASURE (Actions)	Lead (Partners)	Air Quality Impact within AQMA	Wider Impacts	Cost	Timescale	Rank (score)	Status of Measure
	c) Promotion through travel plans, one-off events, "TravelChoice" campaign							2013. Full details at <a href="http://www.lewescyclechallenge.org.uk">www.lewescyclechallenge.org.uk</a> . Cycle storage audit undertaken in Lewes and 15 new sites identified for new storage provision. Awaiting cost before installation can begin. b) Cycle Lewes Map reprinted and redesign in 2012 continues to be distributed through outlets, now 20,000 copies in circulation. LSTF monies to promote c) Launch of Lewes Hike and Bike festival planned for yearly event.
<i>Development Planning</i>								
<b>M21</b>	<b>Better control of impact of new developments</b> a) Facilitate funding from S106 agreement b) Conditions to require reduced parking allocation, completion of Sustainability Checklist; travel plans for large developments and inclusion of pedestrian & sustainable transport facilities such as car-club	LDC	Depending on scale of applications From Low to High (2)	+ climate change	£(3)	Short (3)	<b>A (8)</b>	a) Sustainable accessibility s106 agreements secured on numerous

ID	MEASURE (Actions)	Lead (Partners)	Air Quality Impact within AQMA	Wider Impacts	Cost	Timescale	Rank (score)	Status of Measure
	dedicated car spaces and bus lanes							<p>applications.</p> <p>b) Conditions and sustainability checklist completed on all large planning applications including provision of car club by developer for town centre development. Car club policy note drafted to secure funding from developers for additional car club cars.</p>
<b>M22</b>	<p><b>Greater planning controls within or near the AQMA for new developments or applications</b></p> <p>a) Stricter conditions limiting permitted uses and changes of use for new applications</p> <p>b) Request detailed air quality assessment for developments affecting AQMA.</p> <p>c) Encourage the uptake of Low emission strategies by developers</p> <p>d) Investigate production of supplementary guidance notes on air quality for new developments</p>	LDC	Low (1)	+ awareness + climate change	£(3)	Short (3)	<b>B (7)</b>	<p>a) LDC officers consulted on all planning applications, good awareness of AQMA including training session.</p> <p>b) AQ assessments requested for developments affecting AQMA</p> <p>c) Member of LES peer</p>

ID	MEASURE (Actions)	Lead (Partners)	Air Quality Impact within AQMA	Wider Impacts	Cost	Timescale	Rank (score)	Status of Measure
								working group. LES support at Director level who is also lead member of successful Sussex LES regional groups initiative bid. d) Contributing partner to the Sussex Air LES planning for air quality guidance document, currently at consultation stage.
<i>Non-transport Measures</i>								
<b>M23</b>	<b>Intensify promotion of national schemes on domestic heating and energy efficiency</b> Increase promotion of scheme aimed to improve insulation, replace/service boilers, encourage energy efficiency in the Town Centre	LDC	Low (1)	+ social, reduced background pollution + climate change	£(3)	Short (3)	<b>B (7)</b>	93.80 tonnes of CO2 annual saving from cavity wall and loft insulation based on 178 installs in Lewes Town from Insulation Campaign and My Home 2012.
<i>New Technologies</i>								

ID	MEASURE (Actions)	Lead (Partners)	Air Quality Impact within AQMA	Wider Impacts	Cost	Timescale	Rank (score)	Status of Measure
<b>M25</b>	<b>Continue investing in new technologies and pilot projects through the LDC Waste &amp; Recycling</b> a) Electric vehicles for recycling fleet b) NOx reducing additive for HGV diesels c) Eco-driving training d) Route management (GPRS) e) Monitoring of fuel use & efficiency	LDC	Low (1)	+ raise awareness, innovative	£ (Grants & LDC funds) (3)	Short (3)	<b>B (7)</b>	a)Fleet being maintained b)Nox additive still used c)Eco driver training for operatives d)All vehicles GPRS controlled e)All fuel use monitored
<b>M26</b>	<b>Investigate use of innovative NO<sub>2</sub> absorbing/reducing technologies</b> a) NO <sub>2</sub> absorbing paint/slabs b) Bio-fuels NOx reducing additives	LDC	uncertain	Innovative	££ (grant possible) (2)	Medium (2)	<b>C(4)</b>	Awaiting more data from Congleton Borough Council trials to confirm effectiveness and ease concerns relating to effect on building integrity.
<i>Engagement, Information and Education</i>								
<b>M27</b>	<b>Raising awareness &amp; engagement of non-statutory stakeholders</b> a) Organise one-off events, talks, workshops and targeted campaigns on public transport marketing and eco-driving, involving the local community b) web-sites improvements to provide better information & allow feedback/participation from members of the public c) Pilot LDC internal pop-up messaging providing air quality/sustainable transport information	LDC & ESCC (local community & business)	Low(1) Informative: potentially significant cumulative impact	+ education				a) Launch of the Lewes Hike and Bike festival, numerous guided walks and cycle rides, bike training and information stall day.

ID	MEASURE (Actions)	Lead (Partners)	Air Quality Impact within AQMA	Wider Impacts	Cost	Timescale	Rank (score)	Status of Measure
								b) Corporate website due for review.
M28	<p><b>Strengthen partnership work with ESCC (LTP), LDC Sustainability(Climate Change), Planning &amp; Communities (LDF &amp; LSP), Sussex Air (emissions inventory, air-alert)</b></p> <p>a) Intensify links to existing strategies  b) Accelerate implementation of those schemes which may improve local air quality.  c) Joint participation to events, campaigns, grants applications, data collation surveys  d) Plan monitoring programme (i.e. traffic) to assess action plan effectiveness</p>	LDC (ESCC, Sussex Air, PCT)	Low(1) Informative: potentially significant cumulative impact	+ climate change, transport + social inclusion + communication, effective partnership work				<p>a)Working on links to LDF, Sussex AQ guidance being finalised.  b)LES being promoted through RGI scheme  c)Ongoing working with ESCC transport, environment team and local groups.  d)Lewes town monitoring currently assessing M1 effectiveness.</p>

## 8 Conclusions and Proposed Actions

### 8.1 Conclusions from New Monitoring Data

The annual mean AQO for NO<sub>2</sub> has not been exceeded at neither of the continuous monitoring sites. In addition the 1 hour mean value of 200ug/m<sup>3</sup> has also not been exceeded.

The LS5 station located within the Lewes AQMA showed annual mean concentrations of 20 µg/m<sup>3</sup>, which is a year on year decrease of 0.5µg/m<sup>3</sup>. The monitoring data from the site has decreased since its relocation from the LS2 site, this is likely due to the new location being 20 metres from the congested commercial square area.

The LS4 station located at Denton School, Newhaven showed a lower annual mean concentration of 12.9 µg/m<sup>3</sup> and again at no time did the concentration of the 1 hour mean exceed 200ug/m<sup>3</sup>. It is important to consider that 2012 represents the first full year of operation of the Newhaven ERF and that the LS4 site represents a downwind background location. We will continue to monitor at this location for another full calendar year to fully establish if there has been any increase in background levels of NO<sub>2</sub> since the ERF was commissioned, but early indications suggest there has been little if any increase to the monitored levels of NO<sub>2</sub> and PM<sub>10</sub>.

Of the 36 diffusion tube sites, 4 locations exceeded the AQO for NO<sub>2</sub> when measured as an annual mean. All of these locations were in Lewes town, 2 being in the existing AQMA and 2 being on the boundary of the existing AQMA. In previous years tube locations in Newhaven have also exceeded this AQO but the highest reading tube in 2012 is 39.1µg/m<sup>3</sup>. However we have been instructed to declare an AQMA in Newhaven based on previous assessments and we are in the process of doing so. District wide diffusion tube sites increased and decreased year on year and it is difficult to establish a pattern but when taken as an average the levels of NO<sub>2</sub> within the AQMA have remained relatively similar.



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

The proposed development in Lewes town will require a full air quality impact assessment as part of the application. However it is our intention to undertake further modelling in Lewes town to establish how any material change in the number of vehicle movements and highway changes could impact on the existing AQMA.

## **8.3 Other Conclusions**

Good progress has been made with delivering the measures outlined in the Lewes AQAP and momentum has been maintained. The crucial highway infrastructure change within the Lewes AQMA should provide improvements in the monitored levels of NO<sub>2</sub> but the 18 month trial may not be sufficient to establish its success or otherwise. A number of modal shift initiatives are being delivered and LSTF monies are providing much needed movement from the transport authority. However significant reductions in the levels of NO<sub>2</sub> have yet to be delivered and the limitations of the medieval road system continue to result in levels of NO<sub>2</sub> that you would not necessarily expect with such relatively low AADT numbers.

## **8.4 Proposed Actions**

Monitoring data shows that there are no new areas of exceedence and the tubes that have historically exceeded continue to do so. We have relocated 3 tubes to monitor the impact of the implementation of measure M1 and the data from these will be reported in future reports.

As discussed in Section 8.1 the air quality when measured by diffusion tubes in the Lewes AQMA has seen little change year on year. Two tube sites outside of the existing AQMA have exceeded the AQO, one of which represents relevant exposure. We propose that due to the proximity of tube 11 to the current AQMA boundary and the fact that the current AQAP measures deal with air quality within Lewes town as a

whole that there would be no advantage to extending the current boundary. Furthermore our limited resources are currently being used to implement the 28 actions within the AQAP and DEFRA have awarded grant money to continue to do this.

Following the submission of this report our next timetabled review and assessment work will be the 2014 Progress Report. In the meantime we are consulting on the Newhaven Detailed Assessment and will be declaring an AQMA in the Newhaven area. In addition we will also carry out some new air quality modelling for Lewes town centre that will provide a fuller picture of the sources of the pollution and provide the evidence base to take forward further improvements in Lewes town.

## 9 References

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The Environment Act (1995)

The Environmental Protection Act (1990)

# Appendices

## Appendix A: QA:QC Data

### Diffusion Tube Bias Adjustment Factors

The bias adjustment factors are taken from the National Diffusion Tube Adjustment Factor Spreadsheet as provided by the LAQM helpdesk. The adjustment factor for 2012 is 0.94.

Diffusion Tube Bias Adjustment Factors 06/13 issue of the Spreadsheet							
Laboratory	Method	Year	Previous Number of Studies	New (06/13) Update			
				No. Studies Added	Total No. of Studies	Factor	Change in Factor
Aberdeen Scientific Services	20% TEA in water	2012	1	0	1	0.83	0.00
Edinburgh Scientific Services	50% TEA in acetone	2012	1	6	7	0.78	-0.08
ESG Didcot	20% TEA in water	2012	2	0	2	0.69	0.00
ESG Didcot	50% TEA in acetone	2012	26	12	38	0.79	0.00
ESG Glasgow	20% TEA in water	2012	1	0	1	0.71	0.00
ESG Glasgow	50% TEA in acetone	2012	5	-1	4	0.82	-0.02
Exova	20% TEA in water	2012	1	0	1	0.89	0.00
Glasgow Scientific Services	20% TEA in water	2012	10	1	11	0.96	0.01
Gradko	20% TEA in water	2012	27	13	40	0.94	-0.03
Gradko	50% TEA in acetone	2012	18	3	21	1.02	0.01
Kent Scientific Services	20% TEA in water	2012	1	0	1	0.82	0.00
Kirklees Council	50% TEA in acetone	2012	5	0	5	0.80	0.00
Lambeth Scientific Services	50% TEA in acetone	2012	2	1	3	0.87	-0.04
Milton Keynes Council	20% TEA in water	2012	1	0	1	0.81	0.00
Northampton BC	20% TEA in water	2012	3	0	3	0.75	0.00
Somerset County Council	20% TEA in water	2012	2	0	2	0.95	0.00
South Yorkshire Air Quality Samplers	50% TEA in acetone	2012	3	0	3	0.80	0.00
Staffordshire Scientific Services	20% TEA in water	2012	13	0	13	0.86	0.00
Tayside Scientific Services	20% TEA in water	2012	1	0	1	0.90	0.00
West Yorkshire Analytical Services	50% TEA in acetone	2012	10	0	10	0.76	-0.01
Number of Studies Included			133	35	168		

### QA/QC of Diffusion Tube Monitoring

The method of preparation is 20% TEA in water. The laboratory participate in the Workplace Analysis Scheme for Proficiency (WASP) for nitrogen dioxide tubes and in a field inter-comparison scheme which is controlled by Netcen and organised by the Health and Safety Laboratory. The tubes are stored and placed with regard to specific quality assurance guidelines. The diffusion tubes are changed on a monthly basis. Travel blanks are supplied regularly throughout the year