



Lewes District Council

2014 Air Quality Progress Report for Lewes District Council

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

23rd May 2014

Local Authority Officer	John Nicklin
Position	Senior Pollution Officer
Department	Environmental Health
Address	Southover House, Southover Road, Lewes
Telephone	01273 484345
e-mail	John.nicklin@lewes.gov.uk
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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.

Lewes District Council have recently consulted on the geographical extent of the AQMA and it is our intention to declare an AQMA in summer 2014.

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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, mg/m^3 for carbon monoxide) with the number of exceedences in each year that are permitted (where applicable).

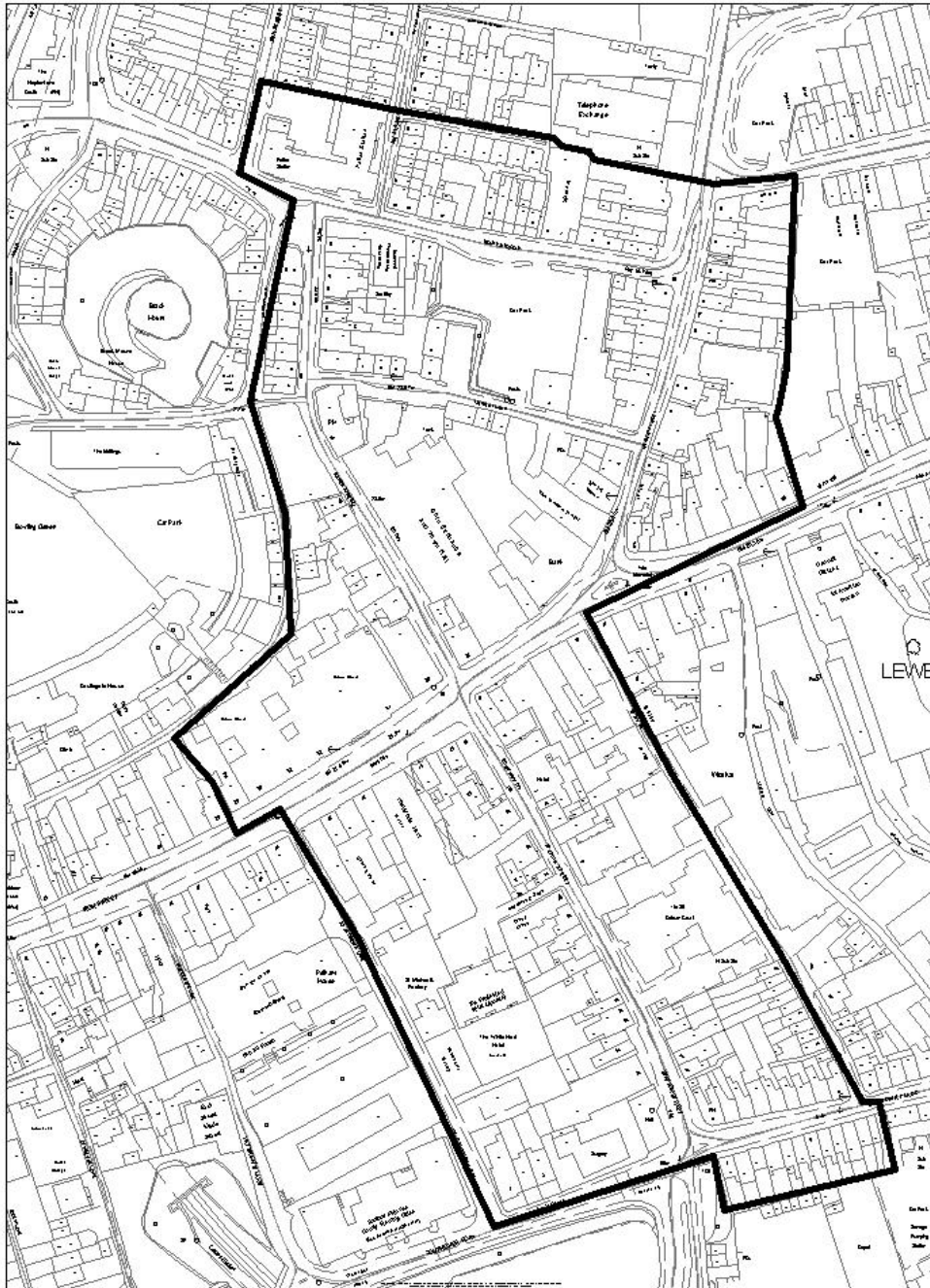
Table 1.1 Air Quality Objectives included in Regulations for the purpose of LAQM in England

Pollutant	Air Quality Objective		Date to be achieved by
	Concentration	Measured as	
1,3-Butadiene	2.25 µg/m ³	Running annual mean	31.12.2003
Carbon monoxide	10 mg/m ³	Running 8-hour mean	31.12.2003
Lead	0.50 µg/m ³	Annual mean	31.12.2004
	0.25 µg/m ³	Annual mean	31.12.2008
Nitrogen dioxide	200 µg/m ³ not to be exceeded more than 18 times a year	1-hour mean	31.12.2005
	40 µg/m ³	Annual mean	31.12.2005
Particulate Matter (PM₁₀) (gravimetric)	50 µg/m ³ , not to be exceeded more than 35 times a year	24-hour mean	31.12.2004
	40 µg/m ³	Annual mean	31.12.2004
Sulphur dioxide	350 µg/m ³ , not to be exceeded more than 24 times a year	1-hour mean	31.12.2004
	125 µg/m ³ , not to be exceeded more than 3 times a year	24-hour mean	31.12.2004
	266 µg/m ³ , 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 exceedence 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.
- Updating and Screening Assessment was completed in **June 2009**. The findings of the report were broadly accepted.
- Further modeling carried out for the Newhaven area found no likely exceedance of the AQO for NO₂ when measured as an annual mean. The report was submitted to DEFRA in **March 2010** and was approved in **April 2010**.
- Progress report submitted **May 2010**. Showed a number of tube locations adjacent to the Newhaven gyratory exceeding 40 $\mu\text{g}/\text{m}^3$. DEFRA requested detailed assessment **October 2010**. Lewes District Council agreed to carry out using 2010 continuous monitoring data and newly acquired modeling software. Further modelling and monitoring undertaken.
- 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 are detailed in this report. This 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_x, 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.

At both of the fixed monitoring stations nitrogen dioxide is measured using a chemiluminescence analyser, a Horiba APNA Ambient NO_x 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

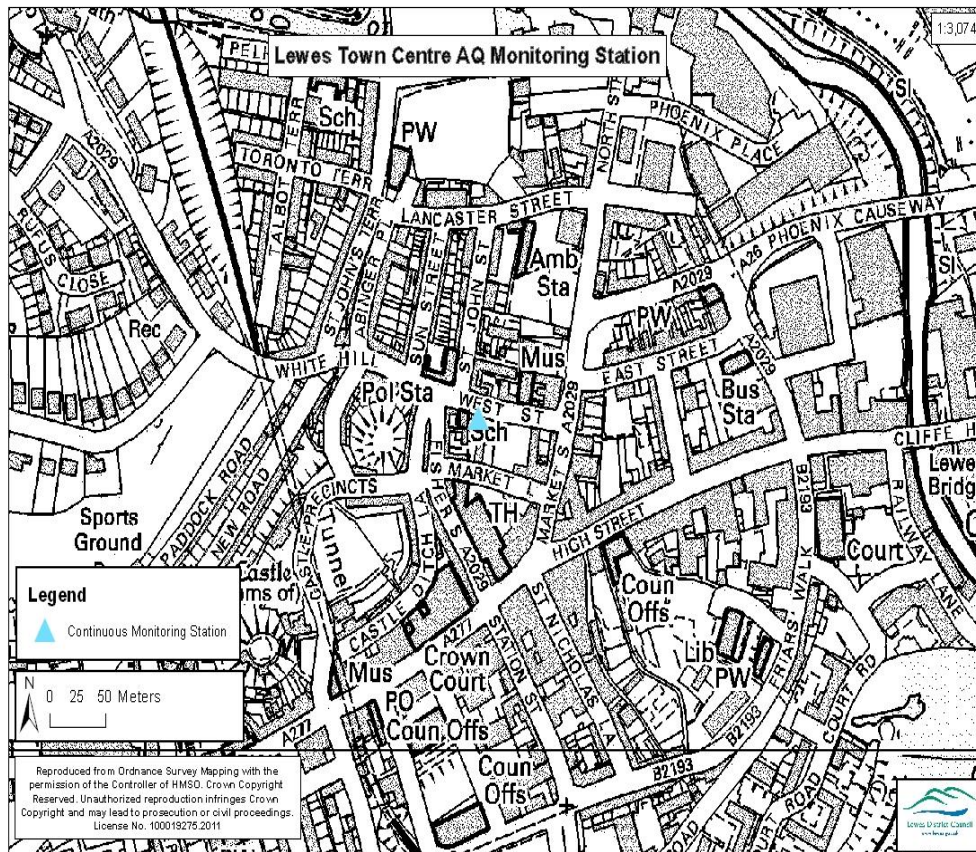


Table 2.1 Details of Automatic Monitoring Sites

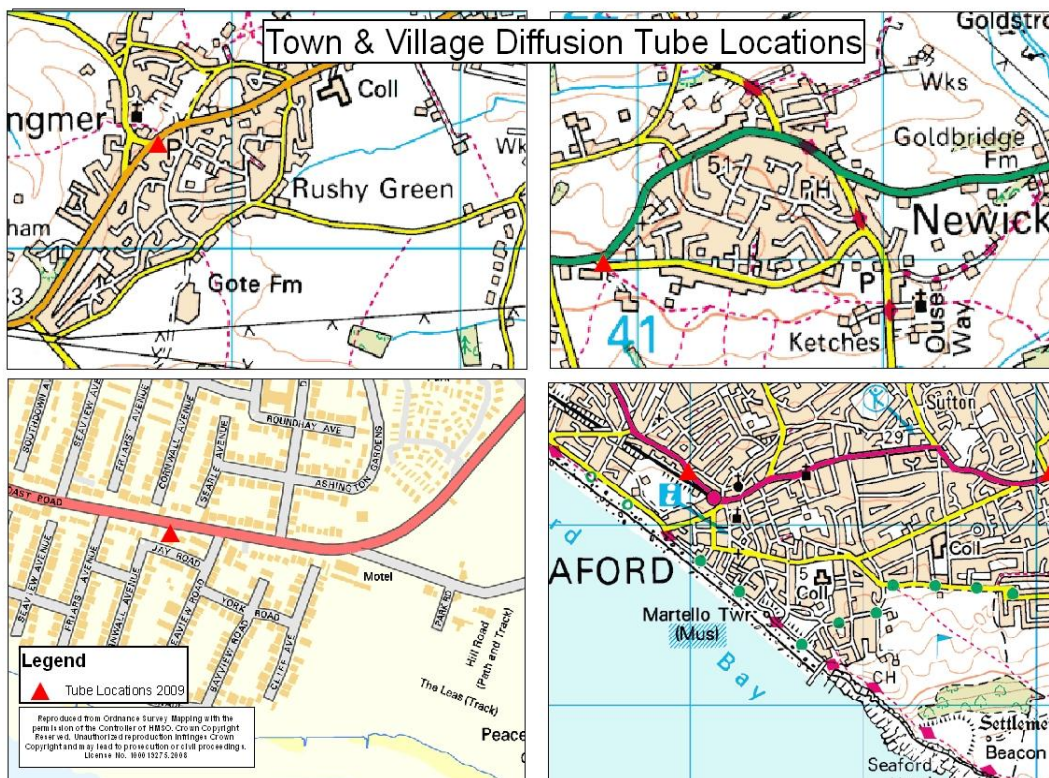
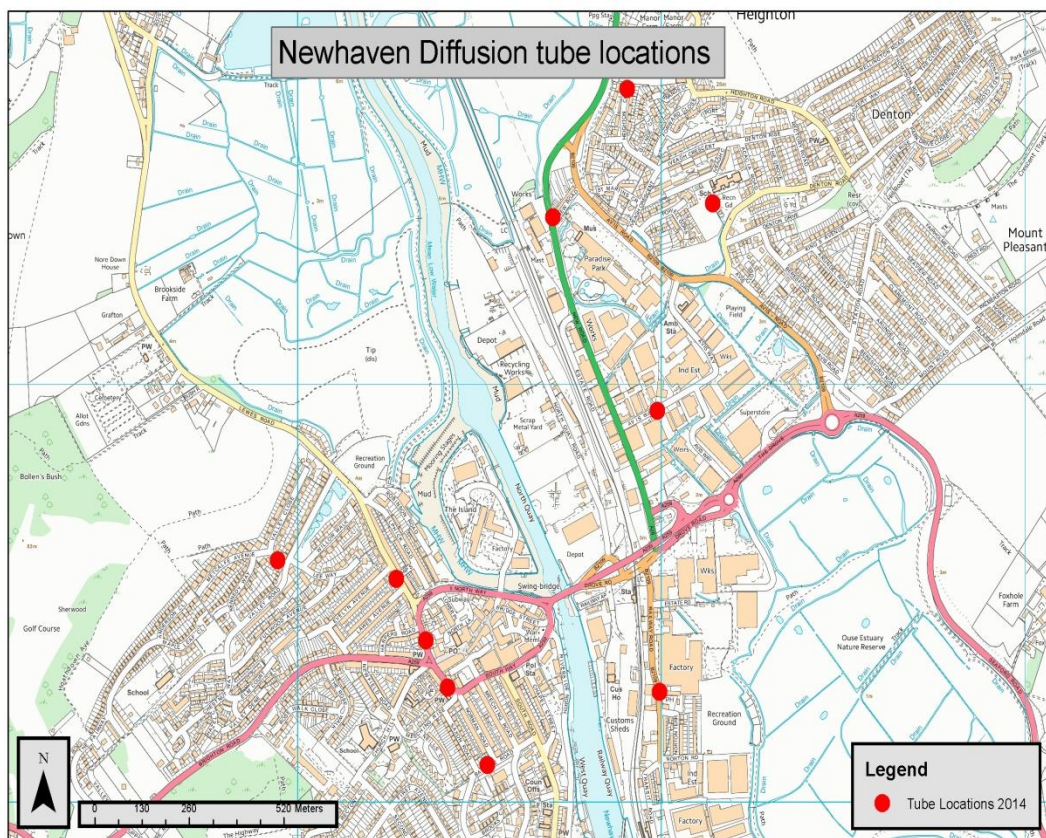
Site Name	Site Type	OS Grid Ref	Inlet height (m)	Pollutants Monitored	In AQMA?	Monitoring technique	Relevant Exposure? (Y/N with distance (m) to relevant exposure)	Distance to kerb of nearest road (N/A if not applicable)	Worst-case Location ?
LS2 – Lewes Town West Street (Decommissioned Feb 2011)	Roadside	X 541510 Y 110264	2m	NO2 Pm10	Y	TEOM	Y (10m)	2m	Y
LS5 – Lewes Town West Street (commissioned May 2011)	Roadside	X 541542 Y 110245	2m	NO2 Pm10	Y	TEOM	Y(2m)	2m	Y
LS4 – Denton School, Newhaven	Urban background	X 545109 Y 102481	3m	NO Pm10 /2.5 Ozone	N	TEOM PM 2.5 by FDMS	Y(10m)	20m	N
LS6- Denton Road Newhaven	Urban background	X 545141 Y 102434	3m	NO Pm10 /2.5 Ozone	N	TEOM PM 2.5 by FDMS	N	55m	N

2.1.2 Non-Automatic Monitoring Sites

The Council also monitors NO₂ 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_x Monitor. Currently a tube is also co-located at LS4 <0.50m from the inlet to the Horiba APNA Ambient NO_x monitor. However due to an incomplete data set the bias adjustment factor of 0.95 has been used as calculated from the 2013 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



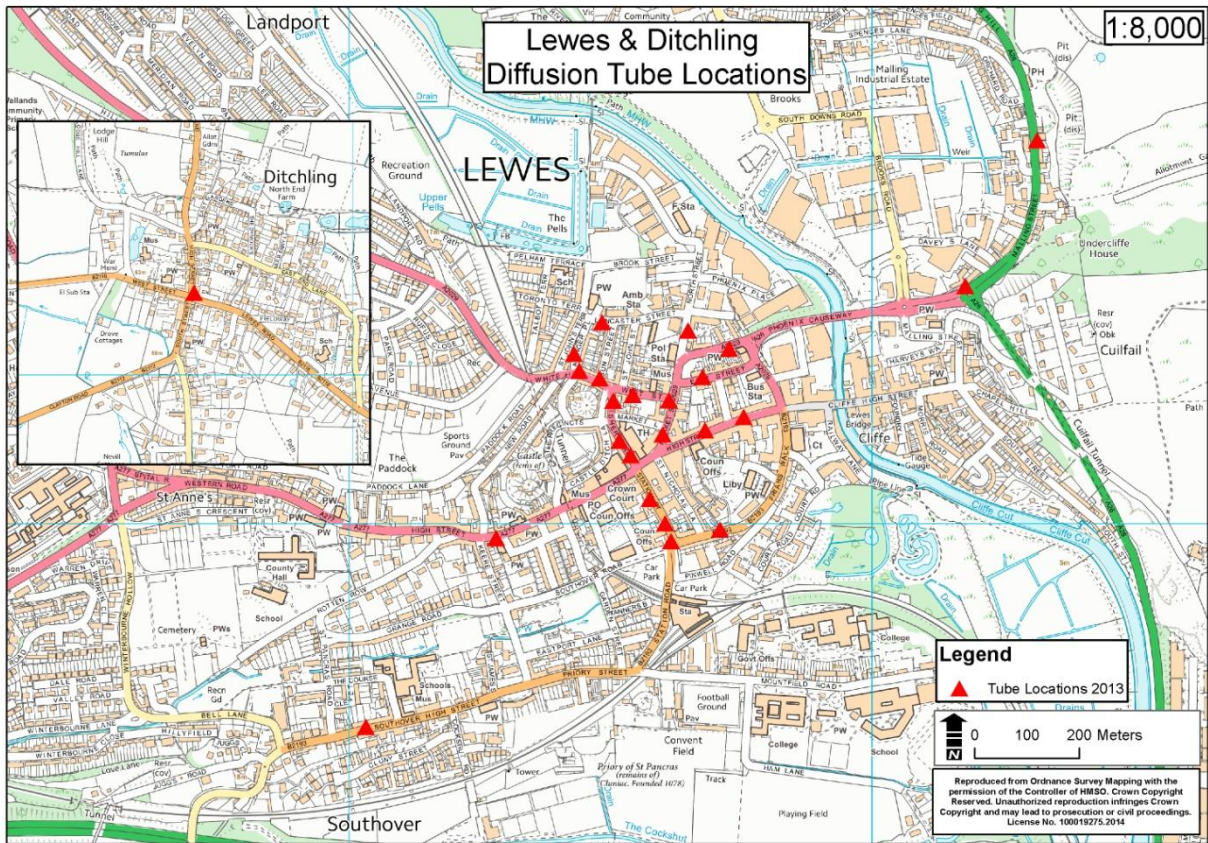


Table 2.2 Details of Non- Automatic Monitoring Sites

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	541528	110141	NO2	N	Y
2	Fisher Street - East	AQMA - Lewes	K (1)	3.5	541540	110806	NO2	N	Y
3	18 Fisher Street	AQMA - Lewes	K (1)	2.5	541504	110234	NO2	Y(1m)	Y
4	Station Street	AQMA - Lewes	K (1)	2	541603	110001	NO2	Y(1m)	Y
5	Station St/Lansdown Place	AQMA - Lewes	R (2)	3	541540	110130	NO2	N	Y
6	Westgate,High Street	AQMA - Lewes	K (1)	1.8	541285	109969	NO2	Y(5m)	Y
7	West Street AQMS (New)	AQMA - Lewes	R (2)	1.8	541543	110245	NO2	Y(2m)	Y
8	Mount Pleasant	AQMA - Lewes	R (2)	3	541478	110277	NO2	Y(10m)	Y
9	West St/Market St	AQMA - Lewes	K (1)	2.5	541611	110243	NO2	Y(5m)	Y
10	Market Street	AQMA - Lewes	K (0.5)	2.5	541598	110174	NO2	Y(5m)	Y
11	204 High Street	Lewes	R (2)	3	541667	110176	NO2	Y(3m)	Y
12	North Street	Lewes	K (1)	3	541643	110376	NO2	Y(5m)	
13	School Hill	Lewes	K(1)	2.5	541770	116210	NO2	N	Y
14	Little East Street	Lewes	R(2)	1.8	541726	110335	NO2	Y (1m)	Y
15	East Street	Lewes	K (1)	3	541669	110282	NO2	Y (0m)	Y
16	Lansdown Place	Lewes	R (1.5)	3	541780	110030	NO2	Y(2m)	
17	Southover High St.	Lewes	K (1)	3	541055	109617	NO2	Y (1m)	Y
18	Cuilfail Tunnel/A26	Lewes	R (5)	3	542233	110493	NO2	Y (1m)	
19	159 Malling St	Lewes	K (1)	3.5	542316	110726	NO2	Y(5m)	Y
20	Malling Close	Lewes	BG	3	542254	110806	NO2	Y(10m)	
21	Clare Rd	Lewes	BG	3	541842	110654	NO2	Y(10m)	
22	9 Southway	Newhaven	K (1)	2.5	544338	101388	NO2	Y(5m)	Y
23	16 Southway	Newhaven	K(1)	2.5	544414	101271	NO2	Y(5m)	Y
24	8 Bayview Rd	Newhaven	SB	2.5	544416	101356	NO2	Y(3m)	
25	1 Valley Close	Newhaven	SB	2.5	544522	101087	NO2	Y(10m)	
26	Avis Way	Newhaven	K (1)	3	544981	101934	NO2	N	
27	Heighton Cr	Newhaven	SB	1.8	544908	102704	NO2	Y(10m)	
28	Railway Road, Newhaven	Newhaven	K (1)	3	545072	101251	NO2	Y(5m)	
29	Lewes Road	Newhaven	K (2)	3	544273	101532	NO2	Y(5m)	Y

Tube Number	Location	In AQMA?	Type and m to kerb	Site Height	X	Y	Pollutant	Relevant	Worst case Location?
30	A259 South Cst Rd	Peacehaven	R (1.5)	2.5	542175	100673	NO2	Y(10m)	Y
31	A272 Allington Rd	Newick	R (3)	1.8	540868	120995	NO2	N	
32	High St	Ditchling	K (0.5)	3	532605	115201	NO2	Y(5m)	Y
33	A259 Chyngton Gdns	Seaford	R (1.5)	3	550077	99291	NO2	Y(10m)	Y
34	New Road, Newhaven	Newhaven	R (1.5)	1.8	544703	102400	NO2	Y(10m)	Y
35	Denton AQMS	Newhaven	SB	3	545142	102433	NO2	Y(50M)	

2.2 Comparison of Monitoring Results with Air Quality Objective

2.2.1 Nitrogen Dioxide (NO₂)

Lewes District Council operates a number of diffusive sampling sites. In addition, automatic (chemiluminescent) monitors are permanently located at 2 locations, including within the Lewes 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 NO₂ has not been exceeded at the West Street, Lewes site. Similarly the Denton road site (LS6) in Newhaven has also not exceeded the annual mean AQO for a 6 month period. For the first 6 months of 2013 the station was located at Denton school site (LS4), similarly the AQO for NO₂ when measured as annual mean was not exceeded at this location. In addition the 1 hour mean value of 200ug/m³ has also not been exceeded at any of the 3 locations.

The LS5 station located within the Lewes AQMA showed annual mean concentrations of 19.2 µg/m³ which is a year on year decrease of 0.8µg/m³ or 4%. These findings are discussed in more detail in section 8.1.

The LS4 station located at Denton School, Newhaven showed a small year on year change with an annual mean concentration of 14.5 µg/m³* and again at no time did the concentration of the 1 hour mean exceed 200ug/m³. **This figure is an annualised figure as the monitoring station was relocated in June 2013.*

The LS6 station located at Denton Community centre, Newhaven is a new location though in relative close proximity to LS4. The annual mean of 12.3µg.m³* shows good agreement with previous monitoring in this location though there is no site specific historic data with which to compare 2013 data with. **This figure is also an annualised figure for the period July to December 2013.*

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Table 2.3 Results of Automatic Monitoring for NO2: Comparison with Annual Mean Objective

Site ID	Site Type	Within AQMA?	Valid Data Capture for Monitoring Period % ^a	Valid Data Capture 2013 % ^b	Annual Mean Concentration ($\mu\text{g}/\text{m}^3$)				
					2009* ^c	2010* ^c	2011* ^c	2012 ^c	2013
LS4	Urban background	N	50%	50%	NA	NA	NA	12.8 <i>(Annualised 11.76)</i>	13.91 <i>(Annualised 14.5)</i>
LS5	Roadside	Y	NA	100%	NA	NA	NA	18.3 <i>(Annualised 20.50)</i>	19.18
LS6	Urban background	N	50%	50%	NA	NA	NA	NA	11.84 <i>(Annualised 12.3)</i>

In bold, exceedence of the NO2 annual mean AQS objective of $40\mu\text{g}/\text{m}^3$

^a *i.e. data capture for the monitoring period, in cases where monitoring was only carried out for part of the year*

^b *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%)*

^c *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 NO₂: Comparison with 1-hour Mean Objective

Site ID	Site Type	Within AQMA?	Valid Data Capture for Monitoring Period % ^a	Valid Data Capture 2012 % ^b	Number of Hourly Means > 200µg/m ³				
					2009* ^c	2010* ^c	2011* ^c	2012 ^c	2013
LS4	Urban background	N	50%	50%	NA	NA	0	0	0 (58.28µg/m ³ 99.8 th percentile)
LS5	Roadside	Y	NA	100%	NA	NA	NA	0	0
LS6	Urban background	N	50%	50%	NA	NA	NA	NA	0 (54.52µg/m ³ 99.8 th percentile)

In bold, exceedence of the NO₂ hourly mean AQS objective (200µg/m³ – not to be exceeded more than 18 times per year)

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

^b 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%)

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

* Number of exceedences for previous years is optional

Table 2.5 Results of NO₂ Diffusion Tubes 2012

Location	Site Type	Within AQMA?	Triplicate or Co-located Tube	Full Calendar Year Data Capture 2013 (Number of Months or %) ^a	2013 Annual Mean Concentration ($\mu\text{g}/\text{m}^3$) - Bias Adjustment factor = XX ^b
LDC 12 Valley Close - Newhaven	Background	N	N	83	13.8
LDC 10 - 9 Southway - Newhaven	Roadside	N	N	83	40.8 (33.6)
LDC - 16 Southway - Newhaven	Roadside	N	N	83	49.3
LDC 11 - Lewes Rd - Newhaven	Roadside	N	N	16	31.0*
LDC 7 - Willow Estate, Avis Way - Newhaven	Roadside	N	N	75	21.0
LDC 8 - 8 Bay View Rd - Newhaven	Roadside	N	N	83	24.0
LDC 25 - Westgate Chapel	Roadside	N	N	100	37.5
LDC 26 - Mount Pleasant	Roadside	Y	N	100	23.7
LDC 27 - West St Police Station	Roadside	Y	N	100	22.5
LDC - 18 Fisher Street	Roadside	Y	N	100	26.6
LDC 36 - Fisher St West	Roadside	Y	N	83	47.0
LDC 1- Fisher Rd East	Roadside	Y	N	83	47.1

Location	Site Type	Within AQMA?	Triplicate or Co-located Tube	Full Calendar Year Data Capture 2013 (Number of Months or %) ^a	2013 Annual Mean Concentration ($\mu\text{g}/\text{m}^3$) - Bias Adjustment factor = XX ^b
LDC 29 - Market St	Roadside	Y	N	100	43.6 (33.4)
LDC 28 - West St/Market St	Roadside	Y	N	100	25.2
LDC 31 - North St	Roadside	N	N	100	24.3
LDC 33 - Cuilfail Tunnel/Thomas St	Roadside	N	N	83	32.8
LDC 4 - 159 Malling St - Lewes	Roadside	N	N	83	34.3
LDC - 6 East Street	Roadside	Y	N	83	28.6
LDC 30 - Little East St	Roadside	N	N	100	22.6
LDC - School Hill	Roadside	N	N	100	41.2 (33.1)
LDC 34 - 204 High St	Roadside	N	N	92	53.2
LDC 35 - Walmer Lane/Lansdowne Terrace	Roadside	N	N	100	20.2
LDC 23 - Station St/Lansdown Terrace	Roadside	N	N	92	29.4
LDC 14 - Station Rd - Lewes	Roadside	Y	N	100	34.3
LDC 37 - 27 Station St (inside)	Roadside	Y	N	25	23.2*

Location	Site Type	Within AQMA?	Triplicate or Co-located Tube	Full Calendar Year Data Capture 2013 (Number of Months or %) ^a	2013 Annual Mean Concentration ($\mu\text{g}/\text{m}^3$) - Bias Adjustment factor = XX ^b
Newhaven - AQ monitoring Station	Background	N	N	50	12.6
New Road (Newhaven)	Roadside	N	N	58	29.6 (27.5 Annualised)
ESCC 9 - South Coast Rd (Cornwall Ave)-Peacehaven	Roadside	N	N	83	24.4
ESCC 20 - A259 Seaford (nr Chynyton Gardens)	Roadside	N	N	83	34.7
ESCC 21 - A259 Seaford (nr St Crispans)	Roadside	N	N	83	26.7
ESCC 23 - Railway Rd - Newhaven	Roadside	N	N	75	26.8
ESCC 24 - 35 Heighton Crescent - Denton	Background	N	N	75	17.0
ESSCC 2 - Ringmer Village Hall	Roadside	N	N	83	26.0
ESCC 18 - High St - Ditchling	Roadside	N	N	83	32.4
ESCC 22 - Southover High St - Lewes	Roadside	N	N	83	32.5

**Not possible to annualise due to small data sample.*

Table 2.6 Results of No2 Diffusion Tubes (2009 to 2013)

Location	Site Type	Within AQMA?	Annual mean concentration (adjusted for bias) $\mu\text{g}/\text{m}^3$					Year on year change - +/- %
			2009* (Bias Adjustment Factor = 0.85)	2010* (Bias Adjustment Factor = 0.85)	2011 (Bias Adjustment Factor = 0.83)	2012 (Bias Adjustment Factor = 0.94)	2013 (Bias Adjustment Factor = 0.95)	
LDC 12 Valley Close - Newhaven	Background	N	15.6	17.3	13.0	14.7	13.8	-5.6%
LDC 10 - 9 Southway - Newhaven	Roadside	N	42.2	44.9	40.9	34.5	40.8 (33.6)	18.2%
LDC - 16 Southway - Newhaven	Roadside	N	47.6	51.2	43.4	39.1	49.3	26.2%
LDC 11 - Lewes Rd - Newhaven	Roadside	N	35.1	36.5	30.6	29.3	31.0*	5.9%
LDC 7 - Willow Estate, Avis Way - Newhaven	Roadside	N	25.4	26.7	23.1	21.0	21.0	14.5%
LDC 8 - 8 Bay View Rd - Newhaven	Background	N	22.8	24.1	17.1	17.1	24.0	20.1%
LDC 25 - Westgate Chapel	Roadside	N	39.9	41.7	33.4	32.2	37.5	16.3%
LDC 26 - Mount Pleasant	Roadside	Y	29.1	28.0	26.6	24.2	23.7	-1.9%
LDC 27 - West St Police Station	Roadside	Y	NA	NA	24.6	28.3	22.5	2.4%

Location	Site Type	Within AQMA?	Annual mean concentration (adjusted for bias) $\mu\text{g}/\text{m}^3$					Year on year change - +/- %
			2009* (Bias Adjustment Factor = 0.85)	2010* (Bias Adjustment Factor = 0.85)	2011 (Bias Adjustment Factor = 0.83)	2012 (Bias Adjustment Factor = 0.94)	2013 (Bias Adjustment Factor = 0.95)	
LDC - 18 Fisher Street	Roadside	Y	32.7	32.8	27.4	28.3	26.6	-6.3%
LDC 36 - Fisher St West	Roadside	Y	53.6	53.5	43.8	46.7	47.0	0.7%
LDC 1- Fisher Rd East	Roadside	Y	56.1	57.9	48.3	43.8	47.1	7.5%
LDC 29 - Market St	Roadside	Y	51.9	47.2	42.8	39.5	43.6 (33.4)	10.5%
LDC 28 - West St/Market St	Roadside	Y	29.5	29.4	24.2	25.9	25.2	-2.6%
LDC 31 - North St	Roadside	N	27.3	26.6	21.6	25.7	24.3	-5.1%
LDC 33 - Cuilfail Tunnel/Thomas St	Roadside	N	33.3	32.0	32.9	31.5	32.8	4.1%
LDC 4 - 159 Malling St - Lewes	Roadside	N	35.5	37.8	33.2	30.1	34.3	14.2%
LDC - 6 East Street (NEW from Mar 07)	Roadside	Y	31.5	33.8	26.0	25.4	28.6	12.5%
LDC 30 - Little East St	Roadside	Y	30.2	27.0	24.3	25.4	22.6	-10.9%
LDC - School Hill (NEW from Mar 07)	Roadside	N	45.2	43.8	40.5	40.4	41.2 (33.1)	2.0%
LDC 34 - 204 High St	Roadside	N	59.9	55.3	54.2	49.9	53.2	6.5%

Location	Site Type	Within AQMA?	Annual mean concentration (adjusted for bias) $\mu\text{g}/\text{m}^3$					Year on year change - +/- %
			2009* (Bias Adjustment Factor = 0.85)	2010* (Bias Adjustment Factor = 0.85)	2011 (Bias Adjustment Factor = 0.83)	2012 (Bias Adjustment Factor = 0.94)	2013 (Bias Adjustment Factor = 0.95)	
LDC 35 - Walmer Lane/Lansdowne Terrace	Roadside	Y	27.9	29.4	20.5	20.9	20.2	-3.4%
LDC 23 - Station St/Lansdown Terrace	Roadside	Y	32.4	33.1	27.2	28.1	29.4	4.4%
LDC 14 - Station Rd - Lewes	Roadside	Y	40.2	39.8	36.5	32.6	34.3	5.3%
LDC 37 - 27 Station St (inside)	Roadside	Y	26.7	29.4	22.3	22.2	23.2*	4.8%
Newhaven - AQ monitoring Station	Background	N	NA	NA	12.1	12.3	12.6	-9.0%
New Road (Newhaven)	Roadside	N	NA	NA	22.4	28.4	29.6 (27.5 Annualised)	4.3%
ESCC 9 - South Coast Rd (Cornwall Ave)-Peacehaven	Roadside	N	29.8	27.0	20.2	22.7	24.4	7.6%
ESCC 20 - A259 Seaford (nr Chynyton Gardens)	Roadside	N	47.3	39.5	34.3	35.1	34.7	-1.0%
ESCC 21 - A259 Seaford (nr St Crispans)	Roadside	N	32.2	33.7	21.9	26.6	26.7	0.4%

Location	Site Type	Within AQMA?	Annual mean concentration (adjusted for bias) $\mu\text{g}/\text{m}^3$					Year on year change - +/- %
			2009* (Bias Adjustment Factor = 0.85)	2010* (Bias Adjustment Factor = 0.85)	2011 (Bias Adjustment Factor = 0.83)	2012 (Bias Adjustment Factor = 0.94)	2013 (Bias Adjustment Factor = 0.95)	
ESCC 23 - Railway Rd - Newhaven	Roadside	<i>N</i>	32.3	32.0	22.8	25.2	26.8	6.4%
ESCC 24 - 35 Heighton Crescent - Denton	Background	<i>N</i>	22.2	18.0	15.9	16.6	17.0	2.6%
ESSCC 2 - Ringmer Village Hall	Roadside	<i>N</i>	30.2	29.4	24.3	24.8	26.0	5.0%
ESCC 18 - High St - Ditchling	Roadside	<i>N</i>	38.9	36.7	29.0	29.7	32.4	9%
ESCC 22 - Southover High St - Lewes	Roadside	<i>N</i>	43.0	38.9	32.3	32.1	32.5	1.3%
Average YEAR ON YEAR CHANGE % +/- for sites WITHIN AQMA								+2.5%
Average YEAR ON YEAR CHANGE %+ for sites OUTSIDE AQMA								+4.8%

In bold, exceedence of the NO2 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 NO2 hourly mean AQS objective

^a 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 (PM₁₀)

During 2013 Lewes District Council have monitored for PM₁₀ 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 (Jan-June) and Denton Community Centre (July-Dec) Newhaven giving hourly readings of PM10 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 PM₁₀ for this period is 21.3µg/m³. During the same period there were 2 exceedences of the 24-Hour Mean (50 µg/m³) air quality objective.

The LS4 Denton School site is a background location, primarily located to monitor any potential emissions from the Newhaven incinerator. This site achieved a 92% data capture rate for the 6 month monitoring period January to June 2013. The mean for PM¹⁰ for this period is 21.5 µg/m³. During the same period there was 1 exceedence of the 24-Hour Mean (50 µg/m³) air quality objective.

The LS6 station located at Denton Community centre, Newhaven is a new location though in relative close proximity to the historic LS4 site. This site achieved a 91% data capture rate for the 6 month monitoring period July to December 2013. The mean for PM¹⁰ for this period is of 17.4µg.m3. During the same period there were no exceedences of the 24-Hour Mean (50 µg/m³) air quality objective.

As there is insufficient background monitoring data available for PM10 in relevant proximity to this site it has not been possible to annualise the data. However as the historic site of LS4 and the current site of LS6 are only 200 metres in distance and neither has a local contributing source of PM10 it is not unreasonable to take the

annual mean as an average of the two sites. This would result in the annual mean for PM¹⁰ being 19.5µg/m³.

Table 2.7 Results of Automatic Monitoring for PM₁₀: Comparison with Annual Mean Objective

Site ID	Site Type	Within AQMA?	Valid Data Capture for Monitoring Period % ^a	Valid Data Capture 2013 % ^b	Confirm Gravimetric Equivalent (Y or N/A)	Annual Mean Concentration (µg/m ³)				
						2009* ^c	2010* ^c	2011* ^c	2012 ^c	2013
LS4	Background	N	91%	50%	Y	NA	NA	17.2 (Annualised 15.23)	17.0	21.5
LS5	Roadside	Y	NA	89%	Y	NA	NA	19.7 (Annualised 17.4)	21.4	21.3
LS6	Background	N	91%	50%	Y	NA	NA	NA	NA	17.4

In bold, exceedence of the PM₁₀ annual mean AQS objective of 40µg/m³

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

^b 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%)

^c 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%

Table 2.8 Results of Automatic Monitoring for PM₁₀: Comparison with 24-hour Mean Objective

Site ID	Site Type	Within AQMA?	Valid Data Capture for Monitoring Period % ^a	Valid Data Capture 2013 % ^b	Confirm Gravimetric Equivalent (Y or N/A)	Number of Daily Means > 50µg/m ³				
						2009* ^c	2010* ^c	2011* ^c	2012 ^c	2013
LS4	Background	N	91%	50%	Y	NA	NA	1 (27) 90 th percentile	6 (32) 90.4 th percentile	1 (33) 90.4 th percentile
LS5	Roadside	Y	NA	89%	Y	NA	NA	1 (26) 90.4 th percentile	3 (27) 90.4 th percentile	2 (32) 90.4 th percentile
LS6	Background	N	91%	50%	Y	NA	NA	NA	NA	0 (27) 90.4 th percentile

In bold, exceedence of the PM₁₀ daily mean AQS objective (50µg/m³ – not to be exceeded more than 35 times per year)

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

^b 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%)

^c if data capture for full calendar year is less than 90%, include the 90.4th percentile of 24-hour means in brackets

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2.2.3 Sulphur Dioxide (SO₂)

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 Road Newhaven LS6 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_{2.5} in Newhaven, most recently at the Denton Road Newhaven LS6 site. This data is not presented in this report but like the ozone readings is available at 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 and the AQMA should remain.

Concentrations outside of the AQMA or adjacent to the AQMA are all below the objectives at relevant locations with the exception of 16 Southway. Lewes District Council have recently consulted on the findings of the Newhaven detailed assessment and are in the process of declaring a new AQMA in the Newhaven area.

The remaining monitoring locations within the district have not exceeded the relevant AQO's and therefore there is no need to proceed to a Detailed Assessment.

3 New Local Developments

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

Eastside, Newhaven - Mixed residential and commercial development consisting of 188 residential properties, supermarket and petrol station. Air quality impact assessment submitted as part of the full planning application.

Parker Pen, Newhaven – Mixed residential and commercial development consisting of 130 to 150 residential units (tbc) and 450m² of commercial units (tbc). No application received as yet though an air quality impact assessment will be submitted as part of the full application.

North Street Quarter, Lewes – Extensive consultation with the developers and their consultants. Full EIA undertaken including modelling of the with and without development for year of occupation. Significant changes to the road network that if approved have the potential to improve the flow of traffic in and around the existing Lewes AQMA. In addition to this there is potential for significant improvements to the existing walking and cycling infrastructure in proximity to Lewes town which will have the potential to increase journeys under a mile to be made on foot or by cycle.

5 Air Quality Planning Policies

Though not yet adopted the Air Quality and emissions mitigation guidance for Sussex is currently out for consultation and being used as a working draft. 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.

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 – since this time ESCC and LDC have been undertaking an 18 month monitoring exercise to assess the impacts of the scheme on traffic flow and pollution levels in surrounding streets. Some of these findings are discussed in more detail in section 8.

Newhaven Ring Road:

A consultant has been working alongside ESCC to undertake a feasibility study of reconfiguration options for the A259 Ring Road to accommodate future growth in Newhaven alongside the air quality issue.

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 fourth 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. The current AQAP is due for review in 2014.

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>								
M1	White Hill / Fisher Street / West street scheme (LTP) 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 NO2 (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	A(9)	Priority change and highway improvements completed in March 2013, increased traffic count and AQ monitoring undertaken for trial 18 month period underway.
M2	Beddingham Crossing (LTP) 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
M3	Lewes Town Centre 20mph zone 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(7)	Implemented 2012

ID	MEASURE (Actions)	Lead (Partners)	Air Quality Impact within AQMA	Wider Impacts	Cost	Timescale	Rank (score)	Status of Measure
M4	Phoenix roundabout and Eastgate bus priority (LTP) 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 considering shared space and two way junction for Waitrose site.
M5	The Living Cliffe (LTP) 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	Offham Road Pedestrian Priority Scheme (LTP) 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>Ringmer –Lewes cycleway (LTP) 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(5)	<p>Eastern section design completed, land negotiations closed and 600 metre completed 2010.</p> <p>Western section design work progressed in 2012/13. Funding now secured for construction by March 2015.</p>
M8	<p>Lewes Railway Station Forecourt Scheme (LTP) 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	TBA	<p>LSTF monies have allowed options to be explored and identify next design steps. New 150 covered bike storage to be installed in 2014. Public consultation “Lewes steps forward” consultation ion options undertaken in October 2013.</p>

ID	MEASURE (Actions)	Lead (Partners)	Air Quality Impact within AQMA	Wider Impacts	Cost	Timescale	Rank (score)	Status of Measure
<i>Emissions Management</i>								
	Encourage use of low emission vehicles and fuels	Targeted through other measures (e.g. travel plans, LDC Waste & Recycling schemes, links to Climate Change)						
	Reduce emissions from buses	Targeted through partnership work with local bus operators and measures described above						
M9	Target local freight distribution 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 (7)	No progress
M10	Better coordination of building and road works in the Lewes town area (LTP+) Enhance existing LTP scheme to include building works and haulage route management	ESCC	Low (1)	Congestion internal communication within councils	(3)	Short (3)	B (7)	Informal partnership working between ESCC and LDC and also through the planning process and s61 agreements.
M11	Target long-distance freight management & heavy traffic through town (LTP+) a) Intensification of existing LTP programmes b) Review signage on weight restrictions at access road links	ESCC (freight)	Low (1)		(3)	Short (3)	B (7)	ESCC started investigation into freight movement and impacts on town
M12	Reduce emissions from idling vehicles 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 (7)	a) Map to be produced pinpointing idling hotspots. b) Dialogue started taxi licensing officer to provide eco driving to hackney

ID	MEASURE (Actions)	Lead (Partners)	Air Quality Impact within AQMA	Wider Impacts	Cost	Timescale	Rank (score)	Status of Measure
								carriages c) No further action.
M13	Vehicle Emission Testing in central Lewes to measure vehicles emissions at pollution hotspots, supermarkets, car parks a) Carry out VOSA roadside emission testing (RET) b) Use of remote sensing technology	LDC	Low(1)	awareness	£ (3)	Short (3)	B (7)	No further action unlikely to be taken forward due to the increased deliverability and benefit of LEZ.
<i>Parking</i>								
M14	Lewes Parking Management (LTP+) 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)	A (8)	Parking review and consultation undertaken 2013. c) New charges at longer stay car parks d) Residents permits now limited with new builds *f) 4 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

ID	MEASURE (Actions)	Lead (Partners)	Air Quality Impact within AQMA	Wider Impacts	Cost	Timescale	Rank (score)	Status of Measure
								include preferential parking.
M15	Review of Lewes car parking system (LTP+) 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)	A (7)	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. All off street cars parks have been audited and changes to short and long term designation. Further feasibility work to be undertaken relating to low emission public P and D.

ID	MEASURE (Actions)	Lead (Partners)	Air Quality Impact within AQMA	Wider Impacts	Cost	Timescale	Rank (score)	Status of Measure
<i>Sustainable Transport</i>								
M16	<p>Partnership work with bus & train operators (LTP+)</p> <p>a) Reduce emissions: calculate emissions from existing bus fleet, route/fleet management (i.e. only cleaner vehicles through AQMA), eco-driving training</p> <p>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</p> <p>c) Provision of additional undercover cycle parking at Lewes station</p>	ESCC & LDC	Moderate (2)	+ accessibility, awareness	££ (2)	Short (3)	B (7)	<p>a) Brighton and Hove bus drivers are now eco trained, preparing scheme to target other operators. New generation of LE buses starting to penetrate smaller fleets.</p> <p>b) LSTF monies invested in real time bus information on 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. LDC now working</p>

ID	MEASURE (Actions)	Lead (Partners)	Air Quality Impact within AQMA	Wider Impacts	Cost	Timescale	Rank (score)	Status of Measure
								and part of the Sussex community rail partnership current projects include route guide.
M17	<p>Lewes Town Travel Plans (LTP+)</p> <p>a) Review existing County & 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)	A (9)	<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 120.</p> <p>b) LSTF monies have allowed employment of SUSTRANS officers for both school and workplace. Including support in delivery of revised workplace travel plans.</p> <p>e) Investigated Sustrans campaign model but not progressing at this stage.</p>

ID	MEASURE (Actions)	Lead (Partners)	Air Quality Impact within AQMA	Wider Impacts	Cost	Timescale	Rank (score)	Status of Measure
M18	Car-sharing (LTP+) 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 (7)	LSTF monies being used to enable a rebrand and new focus.
M19	Car clubs 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(7)	2 vehicles launched July 2010. Currently 80 + members. 2 additional vehicles added with a 3 month trial of plug in hybrid proposed at Lewes railway station. 4 off street 1 on street locations in total. Car club development worker now in post with a target to add another vehicle and penetrate non-traditional markets including local business users.
M20	Walking and cycling (LTP+) 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 (7)	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							<p>2013. Will run again in 2014 Full details at www.lovetoride/lewes.</p> <p>Cycle storage audit undertaken in Lewes and 15 new sites identified for new storage provision. Installation Summer 2014. LSTF monies being used to improve National cycle route 2 through Lewes town.</p> <p>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.</p> <p>c) Lewes Hike and Bike festival to be delivered for second year, co funded with ESCC and</p>

ID	MEASURE (Actions)	Lead (Partners)	Air Quality Impact within AQMA	Wider Impacts	Cost	Timescale	Rank (score)	Status of Measure
								SDNP.
<i>Development Planning</i>								
M21	Better control of impact of new developments 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 dedicated car spaces and bus lanes	LDC	Depending on scale of applications From Low to High (2)	+ climate change	£(3)	Short (3)	A (8)	a) Sustainable accessibility s106 agreements secured on numerous applications including increased car club provision. 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.
M22	Greater planning controls within or near the AQMA for new developments or applications a) Stricter conditions limiting permitted uses and changes of use for new applications b) Request detailed air quality assessment for developments affecting AQMA.	LDC	Low (1)	+ awareness + climate change	£(3)	Short (3)	B (7)	a)LDC officers consulted on all planning applications, good awareness of

ID	MEASURE (Actions)	Lead (Partners)	Air Quality Impact within AQMA	Wider Impacts	Cost	Timescale	Rank (score)	Status of Measure
	c) Encourage the uptake of Low emission strategies by developers d) Investigate production of supplementary guidance notes on air quality for new developments							AQMA including training session. b) AQ assessments requested for developments affecting AQMA d) Contributing partner to the Sussex Air LES planning for air quality guidance document, currently at consultation stage though a working document.
<i>Non-transport Measures</i>								
M23	Intensify promotion of national schemes on domestic heating and energy efficiency 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 (7)	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
M25	<p>Continue investing in new technologies and pilot projects through the LDC Waste & Recycling</p> <p>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</p>	LDC	Low (1)	+ raise awareness, innovative	£ (Grants & LDC funds) (3)	Short (3)	B (7)	<p>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</p>
M26	<p>Investigate use of innovative NO2 absorbing/reducing technologies</p> <p>a) NO2 absorbing paint/slabs b) Bio-fuels NOx reducing additives</p>	LDC	uncertain	Innovative	££ (grant possible) (2)	Medium (2)	C(4)	<p>Data from Congleton Borough and Camden Council trials show some promise though air quality community still on fence in terms of effectiveness. Historic building impact also a concern.</p>
<i>Engagement, Information and Education</i>								
M27	<p>Raising awareness & engagement of non-statutory stakeholders</p> <p>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</p>	LDC & ESCC (local community & business)	Low(1) Informative: potentially significant cumulative impact	+ education				<p>a) Second year of the Lewes Hike and Bike festival, numerous guided walks and cycle rides, bike training</p>

ID	MEASURE (Actions)	Lead (Partners)	Air Quality Impact within AQMA	Wider Impacts	Cost	Timescale	Rank (score)	Status of Measure
								and information stall day. b) Corporate website due for review.
M28	<p>Strengthen partnership work with ESCC (LTP), LDC Sustainability(Climate Change), Planning & Communities (LDF & LSP), Sussex Air (emissions inventory, air-alert)</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 (LSTF), Dev control and 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 NO₂ has not been exceeded at neither of the continuous monitoring sites. In addition the 1 hour mean value of 200µg/m³ has also not been exceeded.

The LS5 station located within the Lewes AQMA showed annual mean concentrations of 19.2 µg/m³ which is a year on year decrease of 0.8µg/m³ or 4%. The concentration of the pollutants monitored at this location have 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 small year on year change with an annual mean concentration of 14.5 µg/m³. This figure is an annualised figure as the monitoring station was located in June 2013.

The LS6 station located at Denton Community centre, Newhaven is a new location though in relative close proximity to LS4. The annual mean of 12.3µg.m³* shows good agreement with previous monitoring in this location though there is no site specific historic data with which to compare 2013 data with. **This figure is also an annualised figure for the period July to December 2013.*

It is important to consider that 2013 represents the second full year of operation of the Newhaven ERF and that both the LS4 and LS6 sites represent 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 NO₂ since the ERF was commissioned, but early indications suggest there has been little if any increase to the monitored levels of NO₂.

Of the 36 diffusion tube sites, 4 relevant receptor locations exceeded the AQO for NO₂ when measured as an annual mean. Two of these sites being in the existing AQMA and 1 being on the boundary of the existing AQMA. One tube location also exceeded the AQO in Newhaven (ref 16 Southway). At the time of writing this report Lewes District Council has consulted on the findings of the Newhaven detailed assessment and the geographical extent of the AQMA. A report is due to be submitted to cabinet in July 2014 and an AQMA declared.

The monitored levels of PM₁₀ at the two continuous air quality stations have not breached any of the air quality objectives.

8.2 Conclusions relating to New Local Developments

All of the major new developments have been required to undertake an air quality impact assessment and air quality has been a material planning consideration. The Lewes town development has an opportunity to improve the flow and reduce recirculation of traffic through the existing Lewes town 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 No₂. Due the numerous factors determining monitored levels of No₂, the 18 month trial (now 12 months in) may not be sufficient to establish its success or otherwise though year on year monitoring data does seem to indicate some significant improvements. A number of modal shift initiatives are being delivered and LSTF monies are providing much needed financial and staff support from the transport authority. However significant reductions in the levels of No₂ have yet to be delivered and the limitations of the medieval road system continue to result in levels of No₂ that you would not necessarily expect with such relatively low AADT numbers.

The soon to be declared air quality management area in Newhaven is being declared due to exceedences of the AQO for No₂ when measured as annual mean. Despite

the source of this pollution being principally traffic the actions needed to improve the air quality are likely to be very different to those adopted in Lewes, this is primarily due to the differing nature of the traffic and the proposed location of the AQMA. It is important to consider that to effectively tackle these exceedences the limited resource both we and the transport authority have to deliver improvements in air quality will be split between Lewes and Newhaven and this is likely to present a significant challenge.

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 locations will be reported in future reports. We have also started monitoring with diffusion tubes at 4 additional locations adjacent to the Newhaven A259 gyratory.

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 though we have seen some relative improvements following the implementation of the priority change at the Fisher Street/White hill junction. One Lewes tube site outside of the existing AQMA has exceeded the AQO and represents relevant exposure. We propose that due to the proximity of this tube 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. One location in Newhaven has exceeded the AQO for No2 and also represents relevant exposure. However this location will fall within the soon to be declared Newhaven AQMA.

Following the submission of this report our next timetabled review and assessment work will be the 2015 Progress Report. In the meantime we will be declaring an AQMA in the Newhaven area, undertaking a further assessment which will then be used to inform the actions in a Newhaven AQAP. 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 2013 is 0.95.

Diffusion Tube Bias Adjustment Factors 03/14 Issue of the Spreadsheet				
Laboratory	Method	Year	New (03/14) Factor	
			No. of Studies	Factor
Aberdeen Scientific Services	20% TEA in water	2013	1	0.83
Edinburgh Scientific Services	50% TEA in acetone	2013	1	0.79
ESG Didcot	20% TEA in water	2013	2	0.76
ESG Didcot	50% TEA in acetone	2013	28	0.80
ESG Glasgow	20% TEA in water	2013	1	0.72
ESG Glasgow	50% TEA in acetone	2013	1	0.73
Exova	20% TEA in water	2013	1	0.91
Glasgow Scientific Services	20% TEA in water	2013	5	0.99
Gradko	20% TEA in water	2013	24	0.95
Gradko	50% TEA in acetone	2013	17	1.00
Kent Scientific Services	20% TEA in water	2013	1	0.77
Kirklees Council	50% TEA in acetone	2013	2	0.74
Lambeth Scientific Services	50% TEA in acetone	2013	1	0.83
Milton Keynes Council	20% TEA in water	2013	1	0.84
Northampton BC	20% TEA in water	2013	4	0.73
Somerset County Council	20% TEA in water	2013	3	0.90
South Yorkshire Air Quality Samplers	50% TEA in acetone	2013	3	0.84
Staffordshire Scientific Services	20% TEA in water	2013	11	0.87
Tayside Scientific Services	20% TEA in water	2013	1	0.78
West Yorkshire Analytical Services	50% TEA in acetone	2013	7	0.79
Number of Studies Included			115	

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