

Folkestone

Hythe & Romney Marsh

Shepway District Council



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SHEPWAY DISTRICT COUNCIL

LOCAL AIR QUALITY MANAGEMENT UPDATING AND SCREENING

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Executive Summary

Part IV of the Environment Act 1995 places a statutory duty on local authorities to review and assess the air quality within their area and take account of Government Guidance when undertaking such work.

The Updating and Screening Assessment (USA) provides an update with respect to air quality issues within the District. There have been a number of changes since the last (third) round of review and assessments which have been taken into account in this assessment; including revised Local Air Quality Management (LAQM) Guidance, modelled background concentration maps, updated NO_x:NO₂ conversion calculator, updated future year calculation tools and updates on specific sources (rail, poultry farms, biomass). The USA has included consideration of new monitoring data and emissions sources, in addition to any significant changes to existing emission sources identified in the previous rounds. The USA considers the seven priority health based air quality objectives as laid down in Regulations and assesses the likelihood that the air quality objectives will be met by their target dates. If the air quality objectives are unlikely to be met, a detailed assessment will be required.

Having considered each emission source and presented evidence to support the assessment of each, it is concluded that the air quality objectives for benzene, 1, 3-butadiene, carbon monoxide, lead, nitrogen dioxide (NO₂), particulates (PM₁₀) and sulphur dioxide will be met. There is no requirement for Shepway District Council to undertake a detailed assessment for these pollutants.

Air quality monitoring is undertaken at one automatic site in the district, Folkestone Suburban (for NO₂, PM₁₀, SO₂, O₃), and at nine nitrogen dioxide diffusion tube sites. The latter include busy roadsides in Folkestone and background sites in the district. The 2008 monitoring results have shown that the prescribed objectives are all being met. The highest monitored levels are at the busy roadside sites in Folkestone town centre and it is therefore recommended that the Council continue to monitor at these locations to demonstrate continued compliance with the prescribed objectives.

There are two newly permitted Environment Agency processes, a biodiesel process and food production process. These processes have no permit requirements with respect to monitoring emissions to air. The biodiesel process has a small (50Kw) solid fuel fired boiler, while Silver Springs has three boilers, which have been subject to a stack height assessment. With respect to the latter process, further information on the assessment undertaken is awaited from the process operator. Once information is received, this will be reviewed and screened to confirm compliance with the prescribed objectives and will be reported in the annual progress report 2010.

Proposed actions arising from the Updating and Screening Assessment are as follows:

- Continue with current monitoring programme of NO₂ at busy roadside locations in Folkestone and ensure recommended data capture levels are maintained;
- Progress to a 2010 Annual Progress Report by April 2010.

1 Introduction

1.1 Description of Local Authority Area

The district of Shepway is situated in Kent on the Channel coast about 75 miles from London. It occupies a key strategic position on the M20 as a gateway to continental Europe with the high speed Rail Link, the Channel Tunnel and Lydd Airport. The District has an area of 140 sq miles (35,700 hectares) and boasts a rich variety of attractive landscape, fringed by the sea. More than 33% of the district falls within the Kent Downs area of outstanding natural beauty and there are at least 15 Sites of Special Scientific Interest. Shepway is home to almost 100,000 people, the majority of which reside in the Folkestone urban area and the remainder residing in Hythe, New Romney and the remaining rural areas within the district.

The main source of air pollution in the district is road traffic emissions from major roads, notably the M20, A20, A259, A260, A2034. Other pollution sources, including commercial, industrial and domestic sources, also make a contribution to background pollution concentrations. There are no Air Quality Management Areas in the district.

1.2 Purpose of 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 Local Air Quality Management (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.

Bureau Veritas has been commissioned by Shepway District Council to undertake the Updating and Screening Assessment (USA) 2009, as part of the fourth round of LAQM Review and Assessment.

The following information has been considered within this assessment:

- Relevant legislative background
- Shepway District Council Review and Assessment of air quality under the Local Air Quality Management (LAQM) regime
- Traffic data provided by Kent County Council; For the purposes of the updating and screening assessment, the Highways Agency's DMRB¹ model has been used to assess traffic data
- Industrial, domestic and other non-traffic related source data provided by Shepway District Council
- Monitoring data for 2008 provided by Shepway District Council
- Background pollutant concentrations from modelled maps
- Technical guidance and tools provided by Defra²

This report sets out the relevant air quality legislation for air quality, provides a review of local air quality management within the administrative area, assesses the air quality for all relevant sources and then summarises the findings of the assessment and potential need for further detailed assessment work.

¹ Highways Agency's Design Manual for Roads and Bridges (DMRB), Volume 11, Section 3, Part 1 Air Quality, May 2007, and accompanying spreadsheet DMRB Screening Method V1.03.xls. July 2007

² Local Air Quality Management Technical Guidance LAQM.TG(09). February 2009. Published by Defra in partnership with the Scottish Government, Welsh Assembly Government and Department of the Environment Northern Ireland

1.3 Air Quality Objectives

The significance of existing and future pollutant levels are assessed in relation to the national air quality standards and objectives, established by Government. The revised Air Quality Strategy (AQS)³ for the UK (released in July 2007) provides the over-arching strategic framework for air quality in the UK and contains national air quality standards and objectives established by the UK Government and devolved administrations to protect human health. The air quality objectives incorporated in the AQS and the UK Legislation are derived from the Limit Values prescribed in the EU Directives transposed into national legislation by member states.

The CAFE (Clean Air for Europe) programme was initiated in the late 1990s to draw together previous directives into a single EU Directive on air quality. The Directive 2008/50/EC⁴ introduces new obligatory standards for PM_{2.5} for Government but places no statutory duty on local Government to work towards achievement.

The Air Quality Standards (England) Regulations 2007⁵ came into force on 15th February 2007 in order to align and bring together in one statutory instrument the Governments obligations to fulfil the requirements of the CAFE Directive.

The objectives for ten pollutants (benzene, 1,3-butadiene, carbon monoxide, lead, nitrogen dioxide, sulphur dioxide particulates - PM₁₀ and PM_{2.5}, ozone and PAHs - Polycyclic Aromatic Hydrocarbons) have been prescribed within the Air Quality Strategy³ based on The Air Quality Standards (England) Regulations 2007.

This assessment focuses on those pollutants included in Air Quality Regulations for the purpose of Local Air Quality Management, in respect of pollutant sources affecting air quality within the Council's administrative area. The objectives set out in the AQS for these pollutants are presented in the table below.

The UK Government and the Devolved Administrations have also set new national air quality objectives for PM_{2.5}. These objectives have not been incorporated into LAQM Regulations, and authorities have no statutory obligation to review and assess air quality against them.

The locations where the AQS objectives apply are defined in the AQS as locations outside buildings or other natural or man-made structures above or below ground where members of the public are regularly present and might reasonably be expected to be exposed [to pollutant concentrations] over the relevant averaging period of the AQS objective. Typically these include residential properties and schools/care homes for longer period (i.e. annual mean) pollutant objectives and high streets for short-term (i.e. 1-hour) pollutant objectives.

³ The Air Quality Strategy for England, Scotland, Wales and Northern Ireland (2007), Published by Defra in partnership with the Scottish Government, Welsh Assembly Government and Department of the Environment Northern Ireland

⁴ Directive 2008/50/EC of the European Parliament and of the Council of 21 May 2008 on ambient air quality and cleaner air for Europe

⁵ The Air Quality Standards Regulations 2007, Statutory Instrument No 64, The Stationary Office Limited

Table 1– Air Quality Objectives included in the Air Quality Regulations for the purpose of Local Air Quality Management

Pollutant	Objective	Concentration measured as	Date to be achieved by and maintained thereafter
Benzene All authorities	16.25 µg/m ³	running annual mean	31.12.2003
Authorities in England and Wales only	5.00 µg/m ³	annual mean	31.12.2010
Authorities in Scotland and Northern Ireland only	3.25 µg/m ³	running annual mean	31.12.2010
1,3 Butadiene All authorities	2.25 µg/m ³	running annual mean	31.12.2003
Carbon monoxide Authorities in England, Wales and Northern Ireland only	10.0 µg/m ³	maximum daily running mean 8-hour	31.12.2003
Authorities in Scotland only	10.0 µg/m ³	running mean 8-hour	31.12.2003
Lead All authorities	0.5 µg/m ³	annual mean	31.12.2004
	0.25 µg/m ³	annual mean	31.12.2008
Nitrogen dioxide ^a All authorities	200 µg/m ³ , not to be exceeded more than 18 times a year	hourly mean	31.12.2005
	40 µg/m ³	annual mean	31.12.2005
Particles (PM₁₀) (gravimetric) ^b All authorities	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
Authorities in Scotland only ^c	50 µg/m ³ not to be exceeded more than 7 times a year	24 hour mean	31.12.2010
	18 µg/m ³	annual mean	31.12.2010
Sulphur dioxide All authorities	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

^a EU Limit values in respect of nitrogen dioxide to be achieved by 1st January 2010. There are, in addition, separate EU limit values for carbon monoxide, sulphur dioxide, lead and PM10, to be achieved by 2005, and benzene by 2010.

^b Measured using the European gravimetric transfer sampler or equivalent.

^c These 2010 air quality objectives for PM10 apply in Scotland only, as set out in the Air Quality (Scotland) Amendment Regulations 2002.

1.4 Local Air Quality Management (LAQM)

As established by the Environment Act 1995 Part IV, all local authorities in the UK are under a statutory duty to undertake an air quality assessment within their area and determine whether they are likely to meet the air quality objectives set down by Government for a number of pollutants. The process of review and assessment of air quality undertaken by local authorities is set out under the Local Air Quality Management (LAQM) regime and involves a phased three yearly assessment of local air quality. Where the results of the review and assessment process highlight that problems in the attainment of health-based objectives for air quality will arise, the authority is required to declare an Air Quality Management Area (AQMA) – a geographic area defined by high levels of pollution and exceedences of health-based standards.

The LAQM regime was first set down in the 1997 National Air Quality Strategy (NAQS)⁶ and introduced the idea of local authority 'Review and Assessment'. The Government subsequently published policy and technical guidance related to the review and assessment processes in 1998. This guidance has since been reviewed and the latest documents include Policy Guidance (LAQM.PG (09))⁷ and Technical Guidance (LAQM.TG (09))⁸. The guidance lays down a progressive, but continuous, framework for the local authorities to carry out their statutory duties to monitor, assess and review air quality in their area and produce action plans to meet the air quality objectives.

Defra and the Devolved Administrations released the latest Policy and Technical Guidance in February 2009, in anticipation of the fourth round of review and assessment. The fourth round begins with this Updating and Screening Assessment, required to be completed by local authorities by the end of April 2009, and builds upon the Council's previous work in the first three rounds.

1.5 Summary of Review and Assessment undertaken by Shepway District Council

In 1998, Shepway District Council began its first round of review and assessment of air quality. Stage 1 of the first round concluded that a Stage 2 assessment was required for carbon monoxide, nitrogen dioxide, sulphur dioxide and PM₁₀ in the district. The Council did not complete the first round of review and assessment, but it was agreed with DEFRA that outstanding issues be addressed in the second round of review and assessment.

The second round of review and assessment in 2003, began with an Updating and Screening Assessment (USA), and concluded that all air quality objectives would be met in the district and there was no need to declare an Air Quality Management Area (AQMA) for any pollutant.

The first phase of the third round of review and assessment, the USA, was completed in June 2006 and this provided a further update with respect to air quality issues within Shepway. The USA concluded that all objectives were expected to be met and no Detailed Assessment was required. The subsequent 2007 and 2008 Annual Progress Reports considered the latest available monitoring data and found that no exceedences of the air quality objectives were measured. However, the nitrogen dioxide (NO₂) diffusion tube data for 2007 had very low data capture. It was therefore recommended that the Council review their diffusion tube management procedures to ensure sufficient data capture for future assessments.

⁶ DoE, 1997, 'The United Kingdom National Air Quality Strategy', The Stationery Office

⁷ Policy Guidance LAQM.PG(09) (2009), Part IV of the Environment Act 1995, Local Air Quality Management, Published by Defra in partnership with the Scottish Government, Welsh Assembly Government and Department of the Environment Northern Ireland, The Stationery Office

⁸ Technical Guidance LAQM.TG (09) (2009), Part IV of the Environment Act 1995, Local Air Quality Management, Published by Defra in partnership with the Scottish Government, Welsh Assembly Government and Department of the Environment Northern Ireland, The Stationery Office

2 Updating and Screening Assessment Methodology

The Updating and Screening Assessment is intended to identify any significant changes that may have occurred since the previous rounds of Review and Assessment were completed. This includes new monitoring data, new or changed emissions sources (either locally or in neighbouring authorities), or any other local changes that might affect air quality e.g. new relevant exposure. The assessment builds on the previous Review and Assessment work undertaken by local authorities.

The Updating and Screening Assessment involves a checklist approach that considers all significant emissions sources relevant to the Air Quality Objectives. The checklists are broadly the same as in the previous rounds, but have been re-ordered so that they follow a source-by-source rather than pollutant-by-pollutant approach. This is to reduce repetition within the screening process for those local authorities that do not have all the listed sources within their area. These can more easily be discounted at an early stage.

A summary of the emission source categories for the Updating and Screening checklists is provided below. The detailed checklists for each source type are then set out in the following sections, as per the methodology provided in Chapter 5 of the Technical Guidance LAQM.TG (09).

The air quality assessment for road traffic emissions sources has been undertaken using the Highways Agency's DMRB¹ model. NO₂ concentrations have been calculated based on the updated NO_x:NO₂ conversion method provided on behalf of Defra as part of the LAQM.TG(09) tools.

For other sources, the checklist approach to screening and relevant LAQM.TG(09) nomograms have been utilised.

Table 2– Summary of emission sources and relevant pollutants to be considered as part of the Updating and Screening Assessment

Reference No.	Emission sources to be assessed	Relevant Pollutants
A. Road Transport Sources		
A.1	Narrow congested streets with residential properties close to the kerb	Nitrogen dioxide
A.2	Busy streets where people may spend 1-hour or more close to traffic	Nitrogen dioxide
A.3	Roads with a high flow of buses and/or HGVs.	Nitrogen dioxide, PM ₁₀
A.4	Junctions (including busy roads and junctions in Scotland and Northern Ireland)	Nitrogen dioxide, PM ₁₀
A.5	New roads constructed since the last round of review and assessment	Nitrogen dioxide, PM ₁₀
A.6	Roads/junctions identified as being close to the objective during the previous round of review and assessment	Nitrogen dioxide, PM ₁₀
A.7	Roads with significantly changed traffic flows	Nitrogen dioxide, PM ₁₀
A.8	Bus and coach stations	Nitrogen dioxide
B: Other transport sources		
B.1	Airports	Nitrogen dioxide
B.2	Railway (diesel and steam trains)	Sulphur dioxide, nitrogen dioxide
B.3	Ports (shipping)	Sulphur dioxide
C: Industrial sources		
C.1	Industrial processes (new processes and those with significantly increased emissions)	Benzene, 1,3-butadiene, lead, nitrogen dioxide, sulphur dioxide, PM ₁₀
C.2	Major petrol storage depots	Benzene
C.3	Petrol Stations	Benzene
C.4	Poultry farms	PM ₁₀
D: Commercial and domestic sources		
D.1	Biomass combustion	Nitrogen dioxide, PM ₁₀
D.2	Domestic solid-fuel burning	Sulphur dioxide
E: Fugitive or uncontrolled sources		
E.1	Quarries, landfill sites, opencast coal mining, waste transfer sites, materials handling (i.e. ports, major construction sites)	PM ₁₀

2.1 Input Data

2.1.1 Traffic data

Kent County Council, via their consultants Jacobs, provided the annual average daily traffic flows (AADT) and speed data used in this assessment, including relevant projection factors to the baseline year 2008.

Where speed data has not been available, speeds have been based on speed limits, modified according to local conditions to take account of congestion and stop/start vehicle movements at junctions. Speeds were reduced at busy junctions to 20kph to reflect the higher emissions of queuing traffic.

Appendix 1 contains the tabular summary of traffic data provided for the Updating and Screening Assessment for use in the DMRB model.

2.1.2 Background concentrations

The DMRB model calculates the pollutant concentrations due to road traffic emissions only. The user must then add the background concentrations (arising from sources other than traffic) to derive the total pollutant concentrations at the relevant receptors modelled.

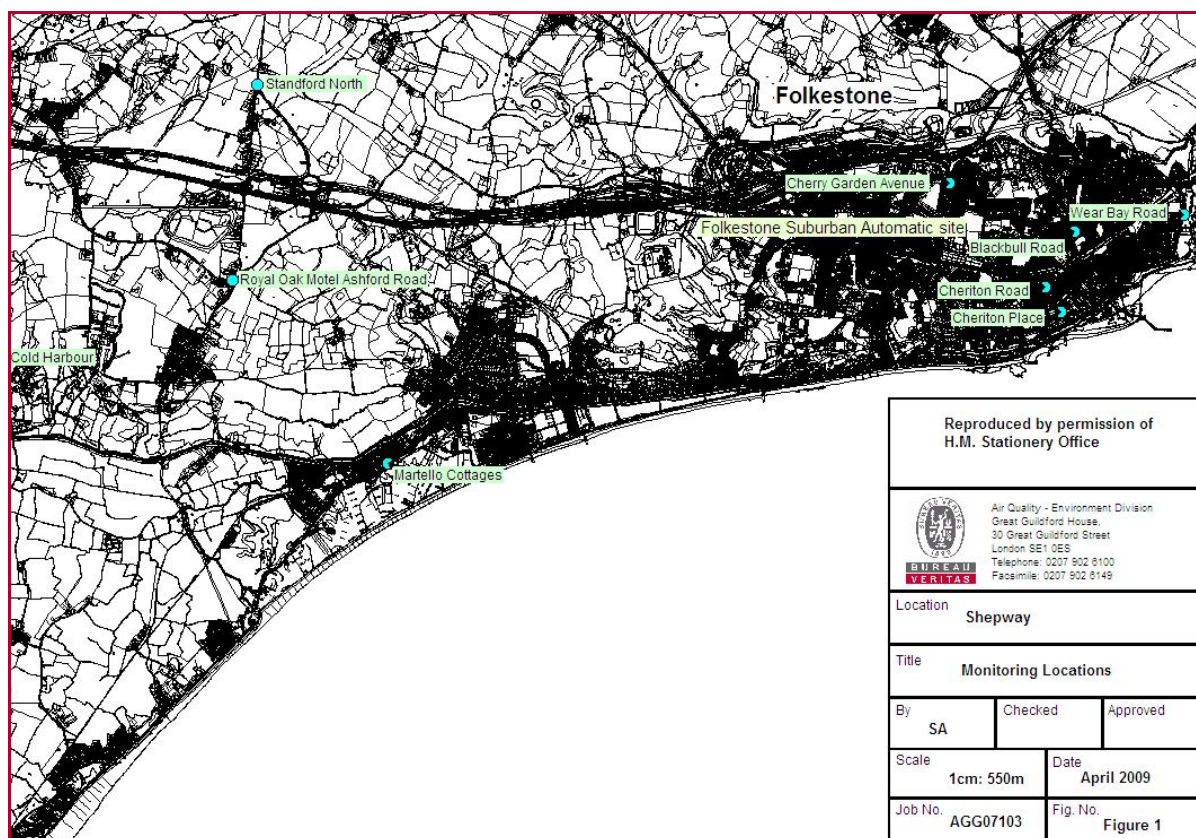
The background concentrations can be obtained either from appropriate monitoring stations or from Defra maps of modelled background pollutant concentrations. These maps are available at a resolution of 1x1 km for the entire UK. Maps are provided for future years' background pollutant concentrations. The maps can be obtained from the UK Air Quality Information Archive⁹. The maps have been updated from the previous round of review and assessment as part of the LAQM.TG (09) tools released in February 2009. Background concentrations used in the DMRB model runs are shown in Appendix 4.

3 New Monitoring Data

Section 3 reviews and assesses all new monitoring data in order to determine whether the air quality objectives are at risk of exceedance.

3.1 Summary of Monitoring Undertaken

Figure 1 – Map of monitoring sites in Shepway



3.1.1 Automatic Monitoring Sites

This section provides details of automatic monitoring carried out in 2008, the year covered by this report.

Table 3– Details of Automatic Monitoring Sites

Site Name	Site Type	OS Grid Ref (x,y)	Pollutants Monitored	In AQMA?	Relevant Exposure? (Y/N with distance (m) to relevant exposure)	Distance to kerb of nearest road (N/A if not applicable)	Worst-case Location?
Folkestone Suburban, Cheriton Road Sports Ground	Suburban	X=621365 Y=136720	NO ₂ , PM ₁₀ , SO ₂ , O ₃	No	Y-0m	N/A	No

There is currently automatic monitoring of nitrogen dioxide undertaken by Shepway Council at one location in the district, Folkestone Suburban site, using a chemiluminescent analyser. At this site, there is also automatic monitoring of particulates (PM₁₀) using a Tapered Element Oscillating Microbalance (TEOM). In addition, the site has continuous monitoring of sulphur dioxide (SO₂) and ozone (O₃) which allow consideration of regional pollution issues in the area. SO₂ is measured using an ultra violet fluorescent analyser and ozone is measured by ultra violet absorption.

The Council calibrates the sites every two weeks and Envirotechnology services the stations 6 monthly. The QA/QC procedures for the site are those of the Kent and Medway Air Quality Monitoring Network (K&MAQMN), which are equivalent to the UK Automatic Urban and Rural Network (AURN) procedures, with the exception of the following:

- Calibration of NO_x analysers with NO gas (AURN also use NO₂)
- Data checks are done once daily and downloads are done twice daily (AURN are hourly)
- Independent audits of the stations are undertaken annually (AURN are 6 monthly).

K&MAQMN managers AEA ratify the data for these sites. The ratified monitoring results for 2006 - 2008 for these sites are tabulated below.

3.1.2 Non-Automatic Monitoring Data

Details of the non-automatic monitoring undertaken in the district are shown below.

Table 4– Details of Non- Automatic Monitoring Sites

Location	Site Type	X	Y	Pollutant monitored	In AQMA?	Relevant Exposure? (Y/N with distance (m) to relevant exposure)	Distance to kerb of nearest road (N/A if not applicable)	Worst-case Location?
Cheriton Place	Roadside	622584	135820	NO ₂ , benzene	No	Y-1m	2.5m	No
Cheriton Road	Roadside	622396	136108	NO ₂ , benzene	No	Y-5m	1.8m	No
Wear Bay Road	Roadside	624040	136976	NO ₂ , benzene	No	Y-11.5m	3m	No
Blackbull Road	Roadside	622734	136769	NO ₂	No	Y-1m	2.5m	No
Martello Cottages	Roadside	614552	134012	NO ₂	No	Y-7m	10m	No
Cold Harbour	Urban background	609964	135279	NO ₂	No	N	N/A	No
Royal Oak Motel Ashford Road	Roadside	612694	136190	NO ₂	No	Y-6m	3.5m	No
Standford North	Urban background	612998	138523	NO ₂	No	N	N/A	No
Cherry Garden Avenue	Roadside	621248	137352	NO ₂ , benzene	No	Y-7.5m	8m	No

3.1.2.1 Nitrogen dioxide diffusion tube data

Outside the continuous monitoring network, Shepway District Council undertook monitoring at nine NO₂ diffusion tubes sites in 2008. The diffusion tubes are supplied and analysed by Harwell Scientifics utilising the 50% Triethanolamine (TEA) in acetone preparation method. Harwell Scientifics participate in the Workplace Analysis Scheme for Proficiency (WASP) for NO₂ diffusion tube analysis and the Annual Field Inter-Comparison Exercise. These provide strict performance criteria for participating laboratories to meet, thereby ensuring NO₂ concentrations reported are of a high calibre. The lab follows the procedures set out in the Harmonisation Practical Guidance.

With regard to the application of a bias adjustment factor for the diffusion tubes, the technical guidance LAQM.TG (09) and Review and Assessment Helpdesk⁹ recommends use of a local bias adjustment factor where available and relevant to diffusion tube sites. In the absence of co-located diffusion tubes at the continuous nitrogen dioxide analyser, bias adjustment factors for the NO₂ diffusion tubes have been derived from comparison studies involving tubes analysed by Harwell Scientifics using the 50% TEA in acetone method. The bias adjustment factor applied for 2008 is 0.80, based on 7 studies (data available in April 2009). Previous years Harwell bias adjustment factors (Review and Assessment website) are 0.79 (2006) and 0.82 (2007).

3.1.2.2 Benzene diffusion tube data

Shepway District Council undertook benzene diffusion tube monitoring at four sites in 2008.

The diffusion tubes are supplied and analysed by Harwell Scientifics. Standard preparation and sample measurement is carried out according to Harwell Scientifics method HS/GWI/3015, issue 7. The samples were analysed by thermal desorption- gas chromatography-mass spectrometry on a Perkin Elmer ATD.

3.2 Comparison of Monitoring Results with AQ Objectives

3.2.1 Nitrogen dioxide

3.2.1.1 Automatic Monitoring Data

The 2008 data shows no exceedence of the annual mean nitrogen dioxide objective at the Folkestone Suburban automatic monitoring site.

Table 5– Results of Automatic Monitoring for Nitrogen dioxide: Comparison with Annual Mean Objective

Location	Within AQMA?	Description	Annual mean concentrations (µg/m ³)		
			2006	2007	2008
Folkestone Suburban	No	Hourly Mean > 200 µg/m ³ (18 times per year permitted)	0	8	0
		Annual mean	22	24	20
		%Data capture	97	99	95

*Data for all years has been fully ratified.

Exceedences of the air quality objectives are shown in bold. Data capture less than the recommended 90% is shown in brackets.

⁹ www.uwe.ac.uk/aqm/review

3.2.1.2 Diffusion Tube Monitoring Data

The nitrogen dioxide diffusion tube data are summarised in the table below. The full dataset (monthly mean values) are included in Appendix 3.

The 2008 diffusion tube results, as in previous years, show no sites exceeding the annual mean NO₂ objective. There are two roadside sites approaching the objectives – Blackbull Road and Cherry Garden Avenue – where it is recommended that monitoring be continued. In 2008, as in 2007, there was low data capture at the diffusion tube sites. The Council have reviewed their diffusion tube management procedures to ensure sufficient data capture in the future.

With respect to the hourly NO₂ objective, there could be a potential risk of exceedence of this short-term objective, where the annual mean NO₂ concentration is >60µg/m³. There are no monitoring sites in the district with concentrations above 60µg/m³.

Table 6– Results of nitrogen dioxide diffusion tubes (µg/m³)

Location	Within AQMA?	Data Capture 2008 %	Annual mean concentrations (µg/m ³) adjusted for bias		
			2006 (Bias factor:0.79)	2007 (Bias factor:0.82)	2008 (Bias factor:0.8)
Cheriton Place	No	67	29	32	30
Cheriton Road	No	58	31	26	33
Wear Bay Road	No	67	23	23	26
Blackbull Road	No	67	37	33	37
Martello Cottages	No	58	-	-	28
Cold Harbour	No	67	15	16	20
Royal Oak Motel Ashford Road	No	67	-	-	31
Standford North	No	67	20	19	21
Cherry Garden Avenue	No	67	-	-	36

*Less than 9 months data capture. Annualisation undertaken using five background sites in the Kent & Medway air quality monitoring network (Canterbury, Rochester Stoke, Thanet Airport, Tunbridge Wells Town Centre, Swale Sheerness).

3.2.2 Particles (PM₁₀)

There is currently continuous monitoring of particulates (PM₁₀) undertaken by Shepway District Council at one location in the area, the Folkestone Suburban site using a Tapered Element Oscillating Microbalance (TEOM). LAQM.TG (09) sets out the calculation required for TEOM results using the Volatile Correction Model (VCM) to estimate gravimetric equivalent. This replaces use of the previous 1.3 factor. Data for 2008 has been corrected using the VCM model. Data for previous years has been taken from previous LAQM reports and uses the 1.3 factor.

Table 7– Summary Sheet from Volatile Correction Model

Summary	Text /Value
Site Name	Folkestone Suburban - Cheriton
Organisation	K&MAQMN
Start Date	01/01/2008
End Date	01/01/2009
TEOM data already corrected with 1.3 factor	No
EPA Constant A	3
EPA Constant B	1.03
Instrument Temperature	25
Instrument Pressure	1013
Instrument reports to local ambient readings	No
Timescale	Daily
Pressure Site	Thurrock 3 - Stanford-le-Hope (TK3)
Pressure Site Warning	
Temperature Site	Thurrock 3 - Stanford-le-Hope (TK3)
Temperature Site Warning	
FDMS Site 1	Bexley 7 (F) - Thames Rd North (BX6)
FDMS Site 1 Warning	Correction includes unratified data.
FDMS Site 2	Tower Hamlets 4 - Blackwall (TH4)
FDMS Site 2 Warning	Correction includes unratified data.
FDMS Site 3	Southend Background AURN (SD1)
FDMS Site 3 Warning	Data capture 80%. Correction includes unratified data.

The 2008 results in Tables 8 and 9 below show that the PM₁₀ objectives are continuing to be met at these sites. Data for all years has been fully ratified. For 2008, data is VCM corrected; data in brackets shows the annual mean corrected by 1.3, as per previous methodology. Data for previous years is shown for comparison purposes and has the 1.3 correction factor applied.

Table 8– Results of PM₁₀ Automatic Monitoring: Comparison with Annual Mean Objective

Location	Within AQMA?	Data Capture 2008 %	Annual mean concentrations (µg/m ³)		
			2006	2007	2008
Folkestone Suburban	No	98	25	23	19 (21)

Table 9– Results of PM₁₀ Automatic Monitoring: Comparison with 24-hour Mean Objective

Location	Within AQMA?	Data Capture 2008 %	Number of Exceedences of 24-hour mean (50 µg/m ³) <i>If data capture < 90%, include the 90th %ile of hourly means in brackets.</i>		
			2006	2007	2008
Folkestone Suburban	No	98	4	6	3 (4)

3.2.3 Sulphur dioxide (SO₂)

There is currently continuous monitoring of sulphur dioxide (SO₂) undertaken by Shepway District Council at one location in the area at the Folkestone Suburban site.

The 2008 results show that the SO₂ objectives are continuing to be met at these sites.

Table 10– Results of Automatic Monitoring for Sulphur dioxide: Comparison with Objectives

Location	Within AQMA?	Description	2006	2007	2008
Folkestone Suburban	No	15 Minute mean > 266 µgm ³ for more than 35 15-minute periods	0	0	0
		Hourly mean > 350 µgm ³ for more than 24 hours	0	0	0
		Daily Mean > 125 µgm ³ for more than 3 days	0	0	0
		% Data Capture	96	99	99

*Data for all years has been fully ratified.

Exceedences are highlighted in bold. Data capture below the recommended 90% is shown in brackets.

3.2.4 Benzene

There is currently continuous monitoring of benzene undertaken by Shepway District Council at four locations in the area. The 2008 results show that the benzene objectives are continuing to be met at these sites.

Table 11– Results of Benzene Diffusion Tube Monitoring: Comparison with Annual Mean Objective

Location	Within AQMA?	Data Capture 2008 %	Annual mean concentrations (µg/m ³)		
			2006	2007	2008
Cherry Tree Avenue	No	33	-	-	1.35
Cheriton Road	No	42	1.22	-	1.25
Cheriton Place	No	50	1.27	-	1.26
Wear Bay Road	No	50	1.01	-	1.27

Exceedences of the annual mean are highlighted in bold.

4 Road Traffic Sources

The air quality assessment for road traffic emissions sources has been undertaken using the Highways Agency's DMRB¹ model. The DMRB inputs and results are shown in Appendices 3 and 4.

4.1 Narrow congested streets with residential properties close to the kerb

The criteria for assessment for narrow streets have changed since the previous round of Review and Assessment. The criteria are listed below:

- Daily traffic flow (AADT) should be around 5,000 vehicles/day or more.
- A congested street will be one with slow moving traffic that is frequently stopping and starting due to pedestrian crossings, parked vehicles etc throughout much of the day (not just during rush hours). The average speed is likely to be less than about 25 kph (15 mph).
- A narrow street will be one with residential properties within 2 m of the kerb, and buildings on both sides of the road (the buildings on the other side of the road can be further from the road than 2 m).

The assessment need only consider nitrogen dioxide.

Three roads were identified by the Council as potential street canyons where the traffic flows are >5000 vehicles/day.

- Blackbull Road, Folkestone
- Dover Road, Folkestone
- Horn Street, Horn Street

Monitoring is already being undertaken at a roadside site at Blackbull Road, Folkestone and measured concentrations of NO₂ meet the annual mean objective. This road was previously assessed in the last round of review and assessment and there have been no substantial changes in traffic flows to warrant further assessment.

Horn Street traffic flows are just below the 5000 vehicles per day traffic flows, but has been assessed in DMRB as a street canyon (by doubling the NO₂ roads concentration from the NO_x: NO₂ model prior to adding background) where there is relevant exposure. Dover Road has traffic flows between 5000 and 10,000 vehicles per day, but average speeds are 29mph. Although the criteria are not fully met, this has also been assessed in DMRB for completeness. The predicted annual mean concentrations are well below the annual mean objective and it is not considered that a detailed assessment is warranted for these roads.

Shepway District Council has assessed narrow congested streets with residential properties close to the kerb and concluded that a Detailed Assessment is not required.

4.2 Busy streets where people may spend 1-hour or more close to traffic

There are no new busy streets where people may spend 1-hour or more close to traffic in the district. Existing areas have been screened in previous rounds of review and assessment. Busy roads within this category include Cheriton Place and Sandgate Road in Folkestone (roadside monitoring in 2008 at Cheriton Place showed annual mean NO₂ levels of 31µg/m³), High Street New Romley and Prospect Road, Hythe. Monitoring data suggests the hourly NO₂ objective is unlikely to be exceeded in the district, given the annual mean objective is not being exceeded at the busiest roadside locations.

Shepway District Council confirms that there are no new/newly identified busy streets where people may spend 1-hour or more close to traffic.

4.3 Roads with a high flow of buses and/or Heavy Goods Vehicles

Traffic data assessed for the Updating and Screening Assessment show only one road with high flows of buses and heavy goods vehicles >20%: the A20 has a maximum of 22.5% at the district boundary with Dover. There is no relevant exposure on this stretch of the A20 and it has been assessed in previous rounds.

Shepway District Council confirms that there are no new/newly identified roads with high flows of buses and/or heavy goods vehicles.

4.4 Junctions

Shepway District Council identified the busiest junctions, where there is relevant exposure, as:

- Cherry Garden Avenue/Cheriton Road junction, Folkestone
- Bouverie Road West/A259 junction, Folkestone
- A259 Dymchurch Road/A261 Military Road junction, Hythe
- A259 High Street/Station Road junction New Romley (NB no traffic data is available for Station Road)

The Cherry Garden Avenue junction was assessed in the previous round of review and assessment and there have not been significant changes to traffic flows. The remaining three junctions have been assessed using DMRB and predicted results indicate prescribed objectives are being met.

Shepway District Council has assessed busy junctions in the district and concluded that it will not be necessary to proceed to a Detailed Assessment.

4.5 New roads constructed or proposed since the last round of Review and Assessment

The Hawkinge Bypass is a new road constructed in the district since the previous round of review and assessment. The A260 Spitfire Way phase of the bypass scheme was completed about a year ago, and links Spitfire Way to the A260 Canterbury Road. This has been assessed using DMRB and the predicted results indicate the prescribed objectives are being met.

Shepway District Council has assessed new roads in the district and concluded that it will not be necessary to proceed to a Detailed Assessment.

4.6 Roads with significantly changed traffic

Traffic data assessed for the Updating and Screening Assessment show no roads with significantly changed traffic flows of more than 25%.

There has been new traffic count data made available since the previous round at sites not previously assessed. These have been run through DMRB, where relevant, to confirm compliance with the objective. The results as shown in Appendix 4 show the prescribed objectives are predicted to be met.

Shepway District Council confirms that there are no new/newly identified roads with significantly changed traffic flows.

4.7 Bus and coach stations

The assessment considers both nitrogen dioxide and PM₁₀ emissions at bus stations that are not enclosed with >2500 movements per day. There is an open bus station in Folkestone, which has been considered in previous rounds, but there are not >2500 movements per day.

Shepway District Council confirms that there are no relevant bus stations in the Local Authority area.

5 Other Transport Sources

5.1 Airports

The assessment for airports considers nitrogen dioxide. The threshold for airports required to go to a detailed assessment are:

- total equivalent passenger numbers in million passengers per annum (mppa) greater than 10 mppa, where 100,000 tonnes of freight equate to an equivalent number of passengers of 1 mppa;
- background NO_x concentration above 25 µg/m³;
- relevant exposure within 1000 m of the airport boundary.

There is one airport in the district of Shepway. Lydd Airport is below the threshold requiring detailed assessment.

Shepway District Council confirms that there are no airports in the Local Authority area that meet the specified criteria.

5.2 Railways (diesel and steam trains)

The assessment for stationary trains considers sulphur dioxide emissions, while the assessment for moving diesel trains considers nitrogen dioxide emissions. If there are no railways carrying diesel or steam trains in the Local Authority area, there is no need to proceed further with this part.

5.2.1 Stationary Trains

Shepway District Council confirms that there are no locations where diesel or steam trains are regularly stationary for periods of 15 minutes or more, with potential for relevant exposure within 15m.

5.2.2 Moving Trains

Shepway District Council confirms that there are no locations with a large number of movements of diesel locomotives, and potential long-term relevant exposure within 30m.

5.3 Ports (shipping)

The assessment for shipping considers sulphur dioxide emissions at busy ports with over 5,000 movements per year and relevant exposure within 250 metres (If over 15,000 movements, relevant exposure is considered within 1km). If there are no ports or shipping, there is no need to proceed further with this part. In Folkestone there is a small port, but there are considerably less than 5000 movements per year.

Shepway District Council confirms that there are no ports or shipping that meet the specified criteria within the Local Authority area.

6 Industrial Sources

6.1 Industrial Installations

The assessment of industrial installations considers all of the regulated pollutants, although those most at risk of requiring further work are sulphur dioxide, NO₂, PM₁₀ and benzene. A list of industrial processes in the district is provided in Appendix 5.

6.1.1 New or Proposed Installations for which an Air Quality Assessment has been carried out

There are two newly permitted Environment Agency processes, a biodiesel process and food production process. These processes have been considered with regard to emissions and likely breach of air quality objectives. These processes have no permit requirements with respect to monitoring emissions to air. The biodiesel process has a small (50Kw) solid fuel fired boiler, while Silver Springs has three boilers, which have been subject to a stack height assessment. With respect to the latter process, further information on the assessment undertaken is awaited from the process operator. Once information is received, this will be reviewed and screened to confirm compliance with the prescribed objectives and will be reported in the annual progress report 2010.

Shepway District Council has assessed new/proposed industrial installations, and concluded that it will not be necessary to proceed to a Detailed Assessment.

6.1.2 Existing Installations where emissions have increased substantially or new relevant exposure has been introduced

Shepway District Council confirms that there are no industrial installations with substantially increased emissions or new relevant exposure in their vicinity within its area or nearby in a neighbouring authority.

6.1.3 New or Significantly Changed Installations with No Previous Air Quality Assessment

There are four new Part B processes permitted by Shepway District Council since the last round of review and assessment. These include a petrol station and three dry cleaners. There are no significant emission releases from these processes relevant to the AQS objectives.

Shepway District Council has assessed new/proposed industrial installations, and concluded that it will not be necessary to proceed to a Detailed Assessment.

6.2 Major fuel (petrol) storage depots

The assessment considers benzene, with respect to the 2010 objective.

There are no major fuel (petrol) storage depots within the Local Authority area.

6.3 Petrol stations

The assessment considers benzene, with respect to the 2010 objective. Large petrol stations, where annual throughput is more than 2000 m³ of petrol (2 million litres per annum), and with a busy road nearby of >30000 annual average daily traffic flows, require consideration with respect to relevant exposure.

There is a new petrol station on the M20 at Junction 11 (B2068), which meets the criteria of throughput and proximity to a busy road, but there is no nearby exposure.

Shepway District Council confirms that there are no petrol stations meeting the specified criteria.

6.4 Poultry farms

Farms housing in excess of: 400,000 birds if mechanically ventilated, 200,000 birds if naturally ventilated, and 100,000 birds for any turkey unit, require consideration in this assessment, to establish whether there is relevant exposure within 100m of the poultry units. The assessment needs to consider only PM₁₀.

Shepway District Council confirms that there are no poultry farms in the local authority area meeting the specified criteria.

7 Commercial and Domestic Sources

7.1 Biomass combustion

7.1.1 Biomass combustion - individual installations

The assessment considers both PM₁₀ and nitrogen dioxide objectives.

Shepway District Council confirms that there are no biomass combustion plants in the Local Authority area, which meet this criteria.

7.1.2 Biomass combustion – combined impacts (PM₁₀ emissions)

Shepway District Council confirms that there are no biomass combustion plants in the Local Authority area, which meet this criteria.

7.2 Domestic solid-fuel burning (sulphur dioxide emissions)

The assessment considers sulphur dioxide emissions (only) from significant areas of residential properties that use solid fuel to heat their houses. ‘Significant’ areas are those of about 500 x 500 m with more than 50 houses burning coal/smokeless fuel as their primary source of heating. PM₁₀ from domestic solid fuel burning is covered under the Biomass combustion – combined impacts section above.

Shepway District Council confirms that there are no areas of significant domestic fuel use in the Local Authority area.

8 Fugitive or Uncontrolled Sources

The assessment of fugitive and uncontrolled sources considers the PM₁₀ objectives. This included consideration to quarries, landfill sites, opencast coal mining, waste transfer sites, and materials handling (i.e. ports, major construction sites). Only locations not covered by previous rounds of review and assessment, or where there is new relevant exposure, require consideration. In the case of proposed new sources, these are only required to be considered if planning approval has been granted.

No new fugitive or uncontrolled sources have been identified in the district. There are three waste transfer stations in the area, the largest of which is Shorncliffe waste transfer station. There is residential exposure close by in Oxden Road, but there have been no air quality issues at the site or complaints of dust. There have been no substantial changes, new exposure or any dust complaints.

Shepway District Council confirms that there are no potential sources of fugitive particulate matter emissions in the Local Authority area that have not been adequately assessed in previous rounds.

9 Conclusions and Proposed Actions

9.1 Conclusions from new monitoring data

Air quality monitoring is undertaken at one automatic site in the district, Folkestone Suburban (for NO₂, PM₁₀, SO₂, O₃), and at nine nitrogen dioxide diffusion tube sites. The latter include busy roadsides in Folkestone and background sites in the district. The 2008 monitoring results have shown that the prescribed objectives are all being met. The highest monitored levels are at the busy roadside sites in Folkestone town centre and it is therefore recommended that the Council continue to monitor at these locations to demonstrate continued compliance with the prescribed objectives.

9.2 Conclusions from assessment of sources

The Updating and Screening Assessment has reviewed new and significantly changed sources in the district.

There are two newly permitted Environment Agency processes, a biodiesel process and food production process. These processes have no permit requirements with respect to monitoring emissions to air. The biodiesel process has a small (50Kw) solid fuel fired boiler, while Silver Springs has three boilers, which have been subject to a stack height assessment. With respect to the latter process, further information on the assessment undertaken is awaited from the process operator. Once information is received, this will be reviewed and screened to confirm compliance with the prescribed objectives and will be reported in the annual progress report 2010.

9.3 Proposed Actions

Proposed actions arising from the Updating and Screening Assessment are as follows:

- Continue with current monitoring programme of NO₂ at busy roadside locations in Folkestone and ensure recommended data capture levels are maintained;
- Progress to a 2010 Annual Progress Report by April 2010.

10 References

- Highways Agency's Design Manual for Roads and Bridges (DMRB), Volume 11, Section 3, Part 1 Air Quality, May 2007, and accompanying spreadsheet DMRB Screening Method V1,03.xls. July 2007
- Local Air Quality Management Technical Guidance LAQM.TG(09). February 2009. Published by Defra in partnership with the Scottish Government, Welsh Assembly Government and Department of the Environment Northern Ireland
- Local Air Quality Management Policy Guidance LAQM.PG(09). February 2009. Published by Defra in partnership with the Scottish Government, Welsh Assembly Government and Department of the Environment Northern Ireland
- Shepway District Council 2008 Local Air Quality Management Annual Progress Report
- Shepway District Council 2007 Local Air Quality Management Annual Progress Report
- Shepway District Council 2006 Local Air Quality Management Updating and Screening Assessment

APPENDICES

Appendix 1 - Traffic data

Site Ref	Data source	Location	X	Y	%HDV *	AADT 2008	Speed (mph)	Previously Assessed?	Substantial change since USA 2006 (25%)?	Assessed in USA 2009 using DMRB?	Reason for assessment
00000128	KCC	C411 Beechborough Road - Folkestone	621093	136503	-	12236	21	Yes	No	No	N/A
20020158	KCC	A260 Dover Road - Folkestone	623382	137015	-	9785	29	No	N/A	Yes	Street canyon
20020219	KCC	A259 New Romney	606972	125365	-	11651	36	No	N/A	Yes	Relevant exposure
20040011	KCC	A259 St Mary's Bay	608784	127072	-	11574	37	No	N/A	Yes	Relevant exposure
20040012	KCC	A259 Sandgate Esplanade	619869	135044	-	13690	28	Yes	No	No	N/A
20050026	KCC	A2034 Cheriton Road - Folkestone	621437	136501	-	12556	35	Yes	No	No	N/A
20050026	KCC	A2034 Cheriton Road - Folkestone	621437	136501	-	14552	31	Yes	No	No	N/A
20060110	KCC	Horn Street - Folkestone	618842	135850	-	4931	22	No	N/A	Yes	Street canyon
20060181	KCC	A2070 Brenzett	600692	127149	-	11666	45	No	N/A	Yes	Relevant exposure
20070030	KCC	Canterbury Road (S) - Hawkinge	622058	139311	-	10496	38	Yes	No	No	N/A
20070031	KCC	A260 Canterbury Road - Folkestone	622337	138262	-	13011	43	Yes	No	No	N/A
20070163	KCC	A259 Churchill Avenue - Folkestone	622175	137746	-	17664	45	Yes	No	No	N/A
20070164	KCC	A259 Dymchurch Road - New Romney	607084	125566	-	12307	35	No	N/A	Yes	Relevant exposure
20070251	KCC	Seabrook Road, Hythe	618670	134986	-	10672	25	No	N/A	Yes	Relevant exposure
20080060	KCC	A20 Cheriton, Folkestone	619419	137043	-	22104	32	Yes	No	No	N/A
3000005	KCC	Cherry Garden Avenue, Folkestone	621228	137518	-	22543	26	Yes	No	No	N/A
3000006	KCC	A259 Churchill Avenue, Folkestone	621527	137730	-	21612	38	Yes	No	No	N/A
3000007	KCC	A260 Canterbury Road, Folkestone	622188	138567	-	13279	40	Yes	No	No	N/A
3000008	KCC	A259 Sandgate Road, Folkestone	621646	135526	-	12039	27	Yes	No	No	N/A
3000009	KCC	A259 Shornccliffe Road, Folkestone	621947	136083	-	10614	32	Yes	No	No	N/A

*Heavy duty vehicles (HDV) >20% is considered as an unusually high proportion, which would warrant assessment if not previously considered.

Appendix 1 (Continued) - Traffic data

Site Ref	Data source	Location	X	Y	%HDV *	AADT 2008	Speed (mph)	Previously Assessed?	Substantial change since USA 2006 (25%)?	Assessed in USA 2009 using DMRB?	Reason for assessment
3000051	KCC	A2034 Cheriton Road, Folkestone	622044	136344	-	12542	29	Yes	No	No	N/A
3000052	KCC	A259 Blackbull Road, Folkestone	622837	136997	-	14435	24	Yes	No	No	N/A
3000053	KCC	A2033 Dover Road, Folkestone	623177	136468	-	8149	24	No	N/A	Yes	Street canyon
3000054	KCC	A260 Hawkinge	622058	139311	-	14047	-	Yes	No	No	N/A
3000055	KCC	A20 Newington, Folkestone	618848	137102	-	11170	-	Yes	No	No	N/A
53	KCC	A259 New Romney	605583	124873	-	12125	-	No	N/A	Yes	Relevant exposure
59	KCC	A259 Sandgate	619372	134957	-	13105	-	Yes	No	No	N/A
11	KCC	A259 Palmarsh	613673	133337	-	10968	-	No	N/A	Yes	Relevant exposure
37	KCC	A260 Spitfire Way (F'stone)	621400	139600	3.6	13,894	-	No	N/A	Yes	New road
62	KCC	B2064 Beachborough Rd	621100	136400	1.3	14,617	-	Yes	No	No	N/A
K713121	KCC	B2064 Shorncliffe Rd (Folkestone)	621100	136400	1.8	13,657	-	Yes	No	No	N/A
K814772	KCC	A20 Ashford Road	613360	136730	6.1	12783	-	Yes	No	No	N/A
K814772	KCC	A259Black Bull Road	622840	137000	3.3	13794	-	Yes	No	No	N/A
622360135800	KCC	A2030 Bouverie Road West	622360	135800	3.0	7261	-	No	N/A	Yes	Junction
613360136730	DfT	A260 Canterbury Road	622460	138000	3.3	12596	-	Yes	No	No	N/A
622840137000	DfT	A259 Castle Hill Avenue	622179	136217	3.0	13297	-	Yes	No	No	N/A
622460138000	DfT	A2034 Cheriton Road	622000	136340	3.1	12906	-	Yes	No	No	N/A
622179136217	DfT	A259 Cheriton Road	622180	136290	3.5	14932	-	Yes	No	No	N/A
622000136340	DfT	A2034 Cherry Garden Avenue	621180	137000	2.1	14897	-	Yes	No	No	N/A
622180136290	DfT	A259 Churchill Avenue	622000	137860	1.9	13751	-	Yes	No	No	N/A
621180137000	DfT	A2033 Dover Road	623000	136345	3.0	9407	-	No	N/A	Yes	Street canyon
622000137860	DfT	A260 Dover Road	623400	137000	2.4	8313	-	No	N/A	Yes	Street canyon
623000136345	DfT	A259Dymchurch Road	609960	129000	4.3	12109	-	No	N/A	Yes	Relevant exposure

*Heavy duty vehicles (HDV) >20% is considered as an unusually high proportion, which would warrant assessment if not previously considered.

Appendix 1 (Continued) - Traffic data

Site Ref	Data source	Location	X	Y	%HDV *	AADT 2008	Speed (mph)	Previously Assessed?	Substantial change since USA 2006 (25%)?	Assessed in USA 2009 using DMRB?	Reason for assessment
623400137000	DfT	A259 Dymchurch Road	615600	134680	2.8	9240	-	No	N/A	Yes	Relevant exposure
609960129000	DfT	A20 Hythe Road	606000	140000	3.8	11065	-	Yes	No	No	N/A
615600134680	DfT	A259 Lydd Road	605000	124700	5.0	10576	-	No	N/A	Yes	Relevant exposure
606000140000	DfT	A259 Lydd Road	606000	124620	4.4	11963	-	No	N/A	Yes	Relevant exposure
605000124700	DfT	A261 Military Road	615600	134760	3.0	11061	-	No	N/A	Yes	Relevant exposure
606000124620	DfT	A20	613670	137190	6.1	12782	-	Yes	No	No	N/A
615600134760	DfT	A20	621740	138000	11.0	37350	-	Yes	No	No	N/A
613670137190	DfT	A20	629000	139360	22.5	27355	-	Yes	No	No	N/A
621740138000	DfT	A260	621358	139650	3.4	13726	-	Yes	No	No	N/A
629000139360	DfT	A260	623000	137670	2.7	12489	-	Yes	No	No	N/A
621358139650	DfT	M20	608000	138750	16.8	54651	-	Yes	No	No	N/A
623000137670	DfT	M20	615500	137000	18.9	56659	-	Yes	No	No	N/A
608000138750	DfT	M20	618150	137140	16.1	44732	-	Yes	No	No	N/A
615500137000	DfT	M20	620400	137600	10.3	50429	-	Yes	No	No	N/A
618150137140	DfT	A259 Radnor Park Road	622270	136500	2.7	12583	-	Yes	No	No	N/A
620400137600	DfT	A259 Rampart Road	616000	134650	2.4	16796	-	No	N/A	Yes	Relevant exposure
622270136500	DfT	A259 Sandgate Esplanade	620000	135060	2.6	12452	-	Yes	No	No	N/A
616000134650	DfT	A2033 Sandgate Road	622000	135570	3.0	10685	-	Yes	No	No	N/A
620000135060	DfT	A2008 Scanlons Bridge Road	615355	134721	3.2	14361	-	No	N/A	Yes	Relevant exposure
622000135570	DfT	A259 Seabrook Road	618000	134900	4.0	12792	-	No	N/A	Yes	Relevant exposure
615355134721	DfT	A2033 Shellons Street Folkestone	622757	136111	2.5	16658	-	Yes	No	No	N/A
618000134900	DfT	A259 Shorncliffe Road	622000	136100	2.3	10605	-	Yes	No	No	N/A
600000126490	DfT	A259 Straight Lane	600000	126490	6.9	6778	-	No	N/A	Yes	Relevant exposure

*Heavy duty vehicles (HDV) >20% is considered as an unusually high proportion, which would warrant assessment if not previously considered.

Appendix 2 - Nitrogen dioxide diffusion tube results 2008

Location	Site Type	X	Y	Jan	Feb	Mar	Apr	May	Jun	July	Aug	Sep	Oct	Nov	Dec	Average	Corrected Annual Mean 2008
Cheriton Place	Roadside	622584	135820	-	-	-	-	55	29	33	18	29	36	39	25	33	30
Cheriton Road	Roadside	622396	136108	-	-	-	-	48	30	25	27	34	52		30	35	33
Wear Bay Road	Roadside	624040	136976	-	-	-	-	47	23	26	20	24	34	38	22	29	26
Blackbull Road	Roadside	622734	136769	-	-	-	-	60	38	35	30	39	50	53	28	42	37
Martello Cottages	Roadside	614552	134012	-	-	-	-	36	20	29	27	28	40	38	-	31	28
Cold Harbour	Urban background	609964	135279	-	-	-	-	26	15	14	15	19	38	34	20	23	20
Royal Oak Motel Ashford Road	Roadside	612694	136190	-	-	-	-	40	27	27	20	26	38	77	19	34	31
Standford North	Urban background	612998	138523	-	-	-	-	31	17	18	17	20	34	31	19	23	21
Cherry Garden Avenue	Roadside	621248	137352	-	-	-	-	55	31	32	34	31	53	57	26	40	36

R= Roadside, B=Background. Exceedences of the annual mean objective are highlighted in bold.

Appendix 3 - DMRB Assessment Inputs

Site Ref	Road Name	Receptor	Distance to receptor (m)	AADT (2008)	% HDV	Speed (kph)	Street canyon?	Background Concentrations		
								2008 NO _x Annual Mean (µg/m ³)	2008 NO ₂ Annual Mean (µg/m ³)	2008 PM ₁₀ Annual Mean (µg/m ³)
1	A2008 Scalons Bridge Road	105 Dymchurch Rd, Hythe	18.5	14361	3.2	20	No	19.5	15.2	19.1
1	A259 Dymchurch Road	105 Dymchurch Rd, Hythe	10.3	9240	2.8	20	No	19.5	15.2	19.1
2	A259 Seabrook Road	256 Seabrook Road, Hythe	6.4	12792	4.0	20	No	17.0	13.6	16.7
3	A259 Dymchurch Road	10-14 Dymchurch Road, Dymchurch	5.0	12108	4.3	20	No	14.1	11.5	16.2
4	A259 High Street	59 High Street, New Romney	5.8	11651	4.4	38	No	14.9	12.0	16.5
5	A259 High Street	Buckhurst, A259 New Romney	5	11651	4.4	20	No	14.9	12.0	16.5
6	A259 Straight Lane	Noakes House, A259/A2070 junction	7	6778	6.9	20	No	14.3	11.5	16.3
6	A2070 Brenzett	Noakes House, A259/A2070 junction	42	11666	5.0	20	No	14.3	11.5	16.3
7	A259 Churchill Avenue	1D Fleming Way	68	17664	2.4	20	No	23	17.5	18.5
7	A260 Hill Road	1D Fleming Way	11.6	12488	2.7	20	No	23	17.5	18.5
7	A259 Blackbull Road	1D Fleming Way	60.4	14435	3.3	20	No	23	17.5	18.5
8	Horn Street	35 Horn Street, Horn Street	3.5	4930	5.0	36	Yes	17.1	13.6	16.7
9	A260 Dover Road	131 Dover Road Folkestone	7	9785	3.0	47	Yes	21.4	16.5	18.0
10	A259 Rampart Road	5 Red Lion Square, Hythe	9.5	16796	2.4	20	No	19	14.9	17.4
10	A261 Military Road	5 Red Lion Square, Hythe	30	11061	3.0	20	No	19	14.9	17.4
11	Bouverie Road West	3 Bouverie Road West	11.8	7261	3.0	20	No	18.7	14.7	17.4
11	A259 Castle Hill Avenue	3 Bouverie Road West	21	13297	3.0	20	No	18.7	14.7	17.4
12	A260 Spitfire Way	6 Park Close, A260 Spitfire Way	16.4	13894	3.6	48	No	18.7	14.7	17.1

Appendix 4 - DMRB Assessment Results

Site Ref	Road Name	Receptor	DMRB Assessment Results				Detailed assessment required?
			2008 NO _x Annual Mean (µg/m ³)	2008 NO ₂ * Annual Mean (µg/m ³)	2008 PM ₁₀ Annual Mean (µg/m ³)	2008 Number of exceedences of 24 hour PM ₁₀	
1	A2008/A259	105 Dymchurch Road, Hythe	45.6	26.6	22.8	8	No
2	A259	256 Seabrook Road, Hythe	37.5	22.8	19.5	3	No
3	A259	10-14 Dymchurch Road, Dymchurch	34.7	20.9	18.9	2	No
4	A259	59 High Street, New Romney	31.0	19.5	18.4	2	No
5	A259	Buckhurst, A259 New Romney	35.0	21.2	19.2	2	No
6	A259/A2070	Noakes House, A259/A2070 junction	37.8	22.1	19.3	3	No
7	A259/A260	1D Fleming Way	47.0	27.9	21.9	6	No
8	Horn Street	35 Horn Street	24.6	20.7	17.6	1	No
9	A260	131 Dover Road Folkestone	31.9	26.1	19.2	3	No
10	A259/A261	5 Red Lion Square, Hythe	45.4	26.4	21.2	5	No
11	Bouverie Road West/A259	3 Bouverie Road West	39.9	24.2	20.4	4	No
12	A260	6 Park Close, A260 Spitfire Way	31.3	20.5	18.5	2	No

* NO₂ concentrations calculated from NO_x using the LAQM.TG (09) NO_x:NO₂ conversion calculator.

Appendix 5 - List of Industrial Processes

Process Ref.	Process Name	Process Type	PG Note	New source since USA 2006?	Existing process with new exposure?	Substantial change >30%?	Potentially significant release with respect to AQOs?	Complaints?	Nomogram screening assessment required?	Detailed Assessment Required?
MRC/015	Brett Concrete Ltd, Scotney Quarry	Concrete Batching Plant	PG3/1	No	No	No	No	No	No	No
MRC/098	Channel Saw Mills Ltd	Timber Process	PG6/2	No	No	No	No	No	No	No
MRC/011	H S Jackson & Sons (Fencing) Ltd	Timber Process	PG6/2	No	No	No	No	No	No	No
MRC/009	Hanson Quarry Products Europe Ltd	Concrete Batching Plant	PG3/1	No	No	No	No	No	No	No
JMG/145	Kent Auto Panels	Respraying of Road Vehicles	PG6/34	No	No	No	No	No	No	No
MRC/238	MC Truck and Bus Ltd	Respraying of Road Vehicles	PG6/34	No	No	No	No	No	No	No
MRC/037	Nusteel Structures Ltd	Coating Process	PG6/23	No	No	No	No	No	No	No
MRC/089	S & P Brisley Ltd	Respraying of Road Vehicles	PG6/34	No	No	No	No	No	No	No
MRC/008	Hawkinge Crematorium	Crematorium Process	PG5/2	No	No	No	No	No	No	No
MRC/024	Tudor Roof Tile Company Ltd	Firing Heavy Clay Goods	PG3/2	No	No	No	Yes	No	No	No
67133/P1	Colin Wood Engineering	Waste Oil Burner	PG1/1	No	No	No	No	No	No	No
Environ Agency	BNFL Dungeness Power Station A	Incinerator	-	No	No	No	Yes	No	No	No
Environ Agency	BNFL Dungeness Power Station A	Solid Waste Burner	-	No	No	No	Yes	No	No	No
Environ Agency	British Energy Dungeness Power Station A	Combustion Plant	-	No	No	No	Yes	No	No	No

Appendix 5 (Continued) - List of Industrial Processes

Process Ref.	Process Name	Process Type	PG Note	New source since USA 2006?	Existing process with new exposure?	Substantial change >30%?	Potentially significant release with respect to AQOs?	Complaints?	Nomogram screening assessment required?	Detailed Assessment Required?
Environ Agency	Silver Spring Mineral Water Co Ltd	Production of food products	-	Yes	N/A	N/A		No		
Environ Agency	Aeolus Partnership	Biodiesel Production/Transesterification	-	Yes	N/A	N/A	No	No	No	No
LC/VR/214	BP Central Garage	Vapour Recovery	PG1/14	No	No	No	No	No	No	No
MRC/VR/92	TotalFinaElf (UK) Ltd	Vapour Recovery	PG1/14	No	No	No	No	No	No	No
PTL/008	Sainsbury's Supermarkets Ltd	Vapour Recovery	PG1/14	No	No	No	No	No	No	No
MRC/VR/074	Murco Petroleum Ltd	Vapour Recovery	PG1/14	No	No	No	No	No	No	No
PTL/086	Fairways(Dymchurch) Ltd	Vapour Recovery	PG1/14	No	No	No	No	No	No	No
MRC/VR/050	Palmarsh Service Station	Vapour Recovery	PG1/14	No	No	No	No	No	No	No
PTL/051	Shell UK Ltd	Vapour Recovery	PG1/14	No	No	No	No	No	No	No
PTL/013	Six Mile Garage	Vapour Recovery	PG1/14	No	No	No	No	No	No	No
AL/097	BP/Safeway Partnership Ltd	Vapour Recovery	PG1/14	No	No	No	No	No	No	No
PTL/007	Tesco Stores Ltd	Vapour Recovery	PG1/14	No	No	No	No	No	No	No
PTL/009	TotalFinaElf UK Ltd	Vapour Recovery	PG1/14	No	No	No	No	No	No	No
PTL/014	TotalFinaElf (UK) Ltd	Vapour Recovery	PG1/14	No	No	No	No	No	No	No
PTL/038	Star Services International Ltd Tram Road Filling Station	Vapour Recovery	PG1/14	No	No	No	No	No	No	No
171627	Shell Petrol Station M20 Junction 11	Vapour Recovery	PG1/14	Yes	N/A	N/A	No	No	No	No
MRC/DC001/P1	Golden Valley Cleaners	Dry Cleaning	PG 6/46	Yes	N/A	N/A	No	No	No	No

Appendix 5 (Continued) - List of Industrial Processes

Process Ref.	Process Name	Process Type	PG Note	New source since USA 2006?	Existing process with new exposure?	Substantial change >30%?	Potentially significant release with respect to AQOs?	Complaints?	Nomogram screening assessment required?	Detailed Assessment Required?
MRC/DC002/P1	Hythe Dry Cleaners	Dry Cleaning	PG 6/46	Yes	N/A	N/A	No	No	No	No
MRC/DC003/P1	Johnsons Cleaners UK Ltd	Dry Cleaning	PG 6/46	Yes	N/A	N/A	No	No	No	No