Swale BOROUGH COUNCIL

Local Air Quality Management Annual Progress Report

2013

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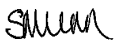
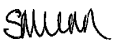
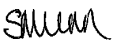
Signature				
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Executive Summary

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. This Annual Progress Report is a requirement of the Fifth Round of Review and Assessment and is a requirement for all local authorities. The Report has been undertaken in accordance with Technical Guidance LAQM.TG (09) and associated.

This Annual Progress Report considers all new monitoring data and assesses the data against the Air Quality Strategy (AQS) objectives. It also considers any changes that may have an impact on air quality.

The review of the continuous monitoring data has identified no exceedences of the AQS objectives. The diffusion tube network has identified three locations outside of existing Air Quality Management Areas (AQMAs) where there has been an exceedence of the annual mean objective. One of these locations, SW80 has shown that there is likely to be an exceedence at the façade of the nearest relevant receptor. This monitoring site also showed an exceedence in 2011. Therefore it is recommended that a Detailed Assessment be undertaken for the Teyham area.

Swale Borough Council have identified a number of new developments which may impact upon air quality in the local area. These are the Neats Court Development, Isle of Sheppey, Nicholls Development, Swale Way, Barkaways residential development, Ospringe and two biomass installations in Selling and Ridham Dock. These developments have been logged in this report and will be further assessed in the next Updating and Screening Assessment.

Proposed actions arising from the 2013 Annual Progress Report are as follows:

- Continue NO_2 diffusion tube and continous monitoring in the district to identify future changes in pollutant concentrations;
- Consider installating additional diffusion tube monitoring locations along St Paul's Street, particualry where there are relevant receptors to the annual mean objective;
- Proceed to a Detailed Assessment for the Teyham area; and
- Proceed to a Progress Report in 2014.

Table of Contents

List of Tables

List of Figures

Appendices

1 Introduction

1.1 Description of Local Authority Area

Situated in the northern maritime region of Kent, in the southeast of England, Swale is comprised of three main urban areas: Sittingbourne and Faversham town centres on the mainland, which are surrounded by countryside and numerous rural villages, and Sheerness town centre on the Isle of Sheppey.

Sheerness has a seaport for freight and significant industrial heritage, including the Sheerness Steel Works. The Swale area is part of the Thames Gateway with significant regeneration planned in the area. There are major residential regeneration projects in progress in Sittingbourne, Queenborough and Faversham, including Combined Heat and Power (CHP) and biomass plants, as well as recycling and waste recovery processes at Ridham.

Swale has good road and rail networks to London and the coast. The ferry ports of Dover and Ramsgate and the Channel Tunnel terminus at Folkestone are approximately one hour away.

The main source of air pollution in the Borough is road traffic emissions from major roads, notably the M2, A2, A249 and St Pauls (B2006). An Air Quality Management Area (AQMA) was declared in March 2009 along the A2 in Newington where exceedences of the annual mean objective for nitrogen dioxide (NO_2) were predicted. Similarly an AQMA was declared in May 2011 for another part of the A2 in Ospringe near Faversham. A further two AQMAs were declared in January 2013 for areas within Sittingbourne. Other pollution sources, including industrial, commercial and domestic sources, also make a contribution to background pollution concentrations.

1.2 Purpose of Progress Report

This report fulfils the requirements of the Local Air Quality Management (LAQM) process as set out in Part IV of the Environment Act (1995), the AQS 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 AQMA and prepare an Air Quality Action Plan (AQAP) setting out the measures it intends to put in place in pursuit of the objectives.

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

They are not intended to be as detailed as Updating and Screening Assessment Reports, or to require as much effort. However, if the Progress Report identifies the risk of exceedence of an AQS 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 micrograms per cubic metre μg/m^3 (milligrams per cubic metre, mg/m^3 for carbon monoxide) with the number of exceedences in each year that are permitted (where applicable).

Table 1-1Air Quality Objective included in Regulations for the purpose of LAQM in England

Pollutant	Air Quality Objective		Date to be achieved by
	Concentration	Measured as	
Benzene	16.25 μg/m^3	Running annual mean	31.12.2003
	5.00 μg/m^3	Annual mean	31.12.2010
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 (NO_2)	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 (PM_{10}) (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

Pollutant	Air Quality Objective		Date to be achieved by
	Concentration	Measured as	
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

Between 1998 and 2001, Swale Borough Council undertook its first round of review and assessment of air quality, which concluded that it was not necessary to declare an AQMA for any pollutant.

During the second round of review and assessment (2003 – 2005), measured exceedences of the NO_2 annual mean objective along the A2 at Ospringe resulted in a Detailed Assessment in 2005. Although dispersion modelling confirmed the risk of exceedence in the area, the report concluded that there were too many uncertainties due to lack of monitoring data. Therefore, an extensive monitoring programme was devised, including the installation of a new continuous monitoring station closer to the street canyon section, before deciding whether an AQMA was required for Ospringe.

During the third round of review and assessment, commencing in 2006 with a new Updating and Screening Assessment (USA), new exceedences of the NO_2 annual mean objective at several locations along the A2 in Newington were measured, and therefore a Detailed Assessment was carried out for this area. The Detailed Assessment, completed in 2007, recommended that an AQMA be declared in Newington based on the potential exceedences in the High Street, following a 6 month monitoring period to provide more accurate NO_2 data. Additional monitoring confirmed the need for an AQMA, which was declared in March 2009 for parts of London Road and High Street in Newington. A Further Assessment, completed in 2010, confirmed the need for the AQMA and provided additional information, which was used to prepare AQAP for the Newington AQMA. The draft AQAP was completed in 2010.

The fourth round of review and assessment commenced with the USA 2009. This identified measured exceedences of the annual mean NO_2 objective at seven locations in Swale outside the Newington AQMA, in Sittingbourne, and in Ospringe. Two of these sites were

assessed in a new Detailed Assessment in 2009 focused on Canterbury Road/ East Street and St Paul's Street in Sittingbourne. The recommendation of the Detailed Assessment 2009 was to consider further AQMA designations at these locations, in addition to undertaking additional monitoring. The need for an AQMA in Ospringe was also reassessed in a new Detailed Assessment completed in 2010. The report confirmed the need for an AQMA in Ospringe, which was declared in May 2011.

The 2010 Annual Progress report confirmed exceedences of the annual mean NO_2 objective in Sittingbourne and Ospringe. For Sittingbourne, it was decided to carry out additional monitoring before considering declaration at these locations.

Swale Borough Council has reviewed the automatic monitoring sites within the borough and has installed an NO_2 analyser site in the Newington High Street AQMA which commenced monitoring in January 2011. Also a new continuous monitor was installed at Canterbury Road/East Street in March 2011. Further monitoring at the original Newington site was carried out for 6 months during 2010 prior to the new site becoming operational.

In addition, in 2011 an inventory of emissions in the Blue Town and Queenborough areas of Swale was completed. These findings have given a greater understanding of emission levels in Swale, will provide a baseline should any similar work be carried out in the future, and will help in any future modelling of atmospheric pollution levels in the borough. It was concluded that ships contribute the highest percentage of emissions for NO_x, PM_{10} and SO_2 in the study area. Over 93% of the SO_2 emissions are attributed to marine vessels. They also contribute over 66% of overall NO_x emissions, and 75% of PM_{10} emissions.

The 2011 Progress Report found the further monitoring of the Canterbury Road/East Street and St Paul's Street areas in 2010 confirmed the findings of the 2009 Detailed Assessment. It concluded AQMAs based on exceedences of the annual mean NO_2 concentrations should be declared for these two areas.

The 2012 Updating and Screening Assessment detailed the 2011 monitoring results which confirmed the need to declare AQMAs at the Canterbury Road/East Street and St Paul's Street areas. The report also identified a further area, diffusion tube SW80 in Teyham, which may require a detailed assessment, depending on the monitoring results in 2012. In addition to this the PM_{10} continuous monitoring at the Ospringe Road site recorded concentrations close to the objective levels.

In 2012 a Further Assessment was undertaken for the Ospringe Road AQMA. The report confirmed that the Ospringe AQMA is still required as the annual mean objective is still likely to be exceeded at a number of relevant receptor locations. The updated model results of this assessment also identified the requirement to extend the AQMA to the East to include The Mount along London Road. This is an area Swale Borough Council are currently considering.

Also completed in 2012 was a Quantitative Appraisal of proposed AQAP measures for the Newington AQMA. The aim of the report was to provide a quantitative estimate as to what the impacts on NO_2 concentrations would be as a result of the implementation of measures detailed in the AQAP. The assessment found that no single measure on its own would be sufficient to achieve compliance with the AQS objective, however implementation of a suite of measures would result in compliance at most of the receptor locations that are currently showing exceedences.

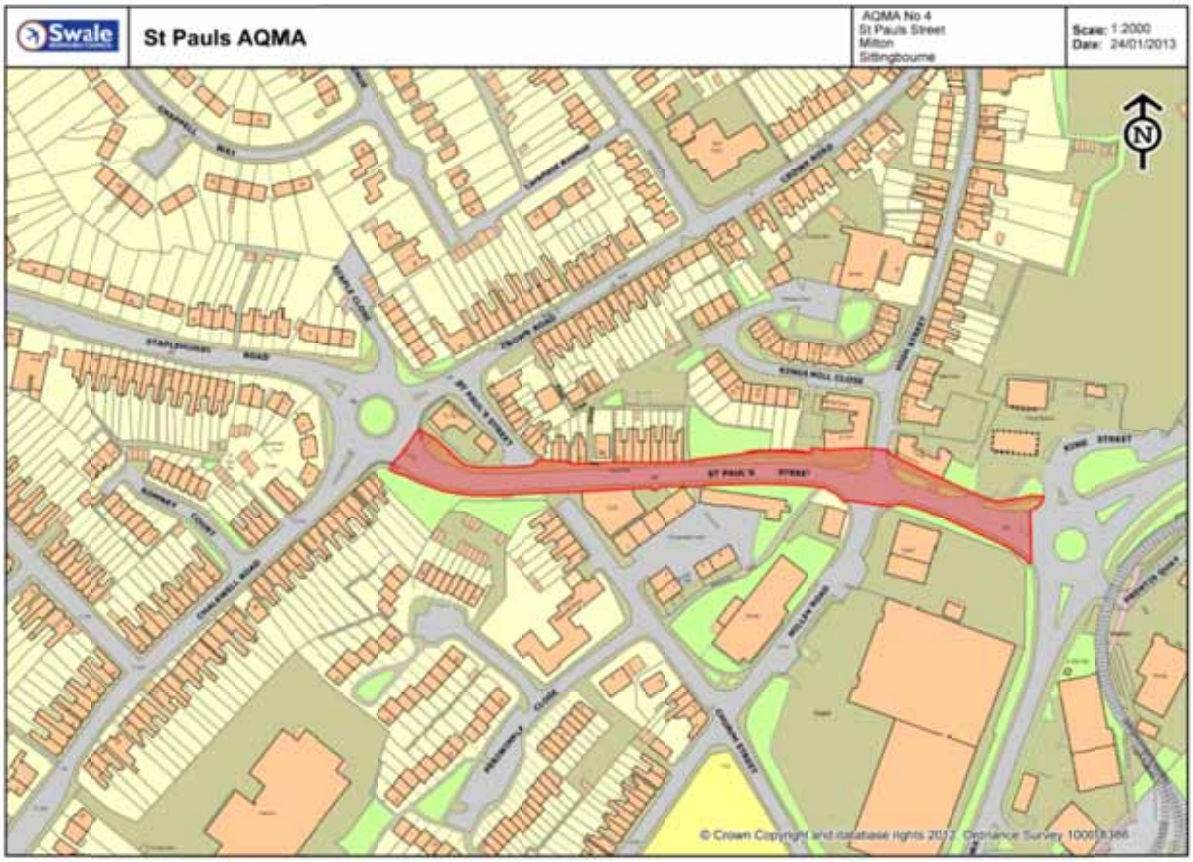
In 2013 Swale Borough Council declared two new AQMAs, these were for East Street, Sittingbourne and St Paul's Street, Sittingbourne.

Figure 1-1 Map of Newington AQMA

Figure 1-2 Map of Ospringe AQMA

Figure 1-3 Map of East Street AQMA

Figure 1-4 Map of St Paul's Street AQMA



2 New Monitoring Data

2.1 Summary of Monitoring Undertaken

2.1.1 Automatic Monitoring Sites

In 2012, automatic monitoring of NO_2 was undertaken by Swale Borough Council at three locations in the area using chemiluminescence analysers, at the Ospringe Roadside (2) site, Canterbury Road/East Street and Newington. The Council calibrates the sites every two weeks. Defra approved contractors maintain all continuous monitoring sites; both are serviced every 6 months and audited annually.

The Council installed a further air quality monitoring station, St Pauls, in January 2013. Results from this monitoring station will be included in the 2014 Progress Report.

During 2012, continuous monitoring of PM_{10} was undertaken by Swale Borough Council at one location in the area, Swale Ospringe Roadside (2), using a Tapered Element Oscillating Microbalance (TEOM).

Further details of these monitoring stations are provided in Figure 2.1 and Table 2.1.

Figure 2-1 Map of Continuous Monitoring Sites

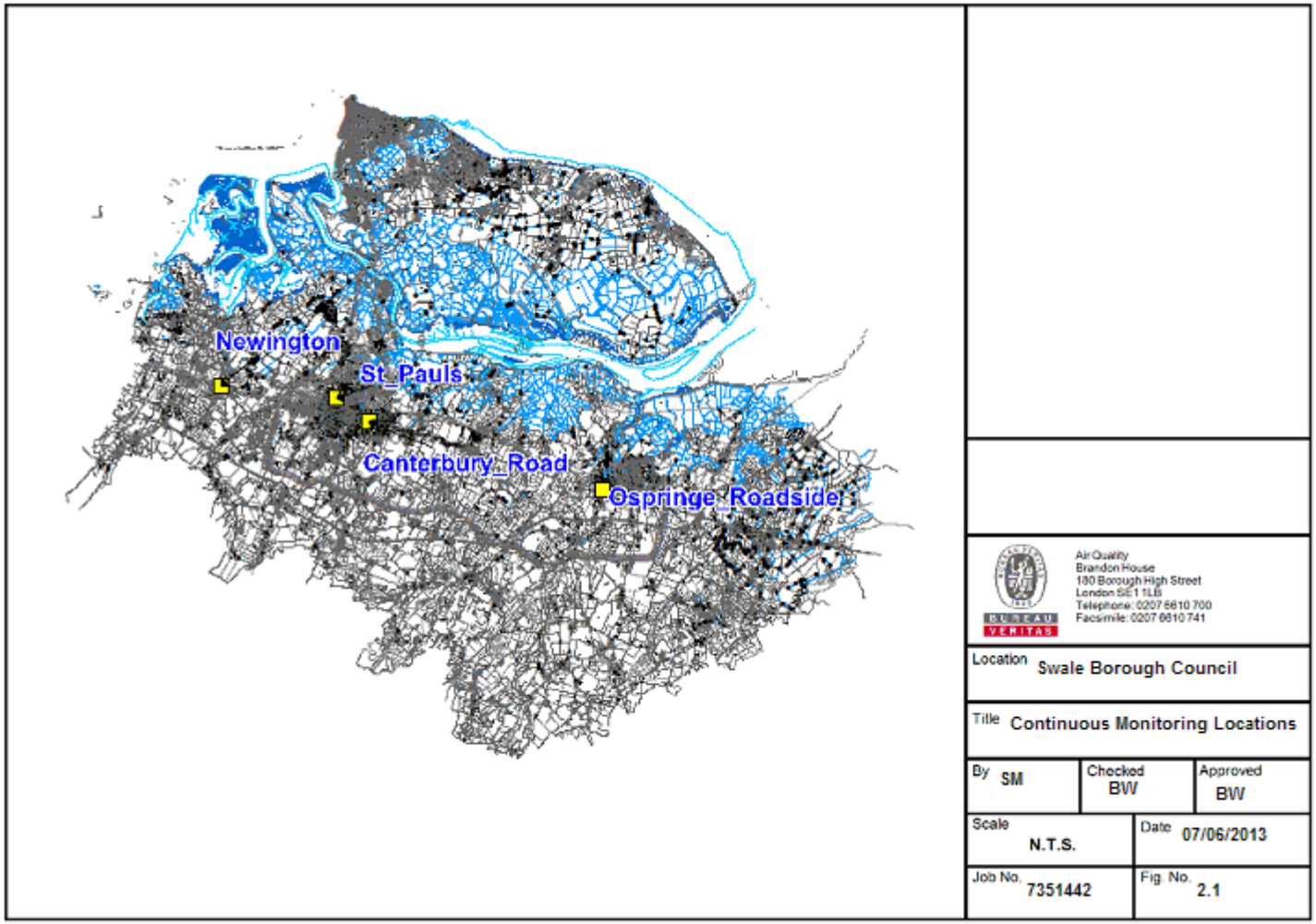


Table 2-1 Details of Automatic Monitoring Sites

Site ID	Site Type	X OS Grid Reference	Y OS Grid Reference	Inlet Height (m)	Pollutants Monitored	In AQMA ?	Monitoring Technique	Relevant Exposure?	Distance to Kerb of Nearest Road (m)	Does this Location Represent Worst-Case Exposure?
Newington 3	Roadside	585861	164817	2.35	NO_2	Y	Chemiluminescence	Y(5m)	1.6	Y
Ospringe Roadside 2	Roadside	600395	160892	1.95	NO_2 PM_{10}	Y- NO_2	Chemiluminescence TEOM	Y (0m)	1.7	N
Canterbury Road	Roadside	591491	163470	1.9	NO_2	N	Chemiluminescence	Y(4m)	2	N
St Pauls	Roadside	590262	164398	3.2	NO_2	Y	Chemiluminescence	Y (9m)	2.5	Y

Note St Pauls monitoring station was operational from January 2013 only

2.1.2 Non-Automatic Monitoring Sites

Swale Borough Council undertook monitoring using passive NO_2 diffusion tubes at 59 sites in 2012. There are triplicate co-located NO_2 diffusion tubes installed at the automatic monitoring sites Newington Co-op, Newington, Ospringe Street and at Canterbury Road, Sittingbourne.

A number of sites closed in April 2012. These include:

- SW06 – Lower Road, Brambledown
- SW12 – A249 Layby, Neats Court
- SW63 – 4 Church Lane, Newington
- SW64 – 21 Church Lane, Newington
- SW21 – A2 London Road, Teynham
- SW17 – Balmoral Terrace, A2 London Road
- SW60 – 72/74 Swanstree Avenue, Sittingbourne
- SW61 – Roundabout Wadham Place
- SW81 – Lime Grove, Sittingbourne

There were two new sites installed in 2012, these were:

- SW87 – Canterbury Road AQ Station
- SW88 – Sonara Way

There were 6 triplicate sites in 2012, these were:

- SW42 – High Street, Opposite Church Lane
- SW20 – Newington, Co-op (co-located)
- SW30 – ZW3 Ospringe Street (co-located)
- SW87 – Canterbury Road AQ Station (co-located)
- SW39 – Giles Young Court, Milton
- SW82 – Conservative Club, St Pauls Street

Diffusion tubes in 2012 were prepared and analysed by Environmental Scientific Group (ESG). The tube preparation method is 50% Triethanolamine (TEA) in acetone. ESG participates in the Workplace Analysis Scheme for Proficiency (WASP) for NO_2 diffusion tube analysis. This provides strict performance criteria for participating laboratories to meet, thereby ensuring NO_2 concentrations reported are of a high calibre. In WASP data rounds 118 through to 119 (January to December 2012) ESG have scored 100%. The percentage score reflects the results deemed to be satisfactory based upon the z-score of $< \pm 2$.

Data have been corrected using a bias adjustment factor, which is an estimate of the difference between diffusion tube concentrations and continuous monitoring, the latter assumed to be a more accurate method of monitoring. The technical guidance LAQM.TG (09) provides guidance with regard to the application of a bias adjustment factor to correct diffusion tubes. Triplicate co-location studies can be used to determine a local bias factor based on the comparison of diffusion tube results with data from NO_x / NO_2 continuous analysers. Alternatively, the national database of diffusion tube co-location surveys provides bias factors for the relevant laboratory and preparation method.

Swale Borough Council has three colocation studies. Data capture in 2012 was good at all three sites at both the continuous monitoring and the diffusion tubes. The overall bias adjustment factor of 0.80 has been calculated from the orthogonal regression of two bias factors, from the Ospringe and the Canterbury locations. It has been decided not to use the Newington co-location data as the diffusion tubes are positioned some distance from the inlet, therefore there is concern that the result is not representative.

For comparison the national bias adjustment factor for the laboratory and tube preparation method was 0.79 based on 26 studies.

For previous year's data 2008 to 2011, the bias adjustment factors have been taken from the Council's previous LAQM annual reports. The factors used were 0.78 (2008), 0.81 (2009), 0.85 (2010) and 0.89 (2011).

The details of the NO_2 monitoring network are shown in Table 2.2 and Figure 2.2 through to Figure 2.9.

Figure 2-2 Map of Non-Automatic Monitoring Sites

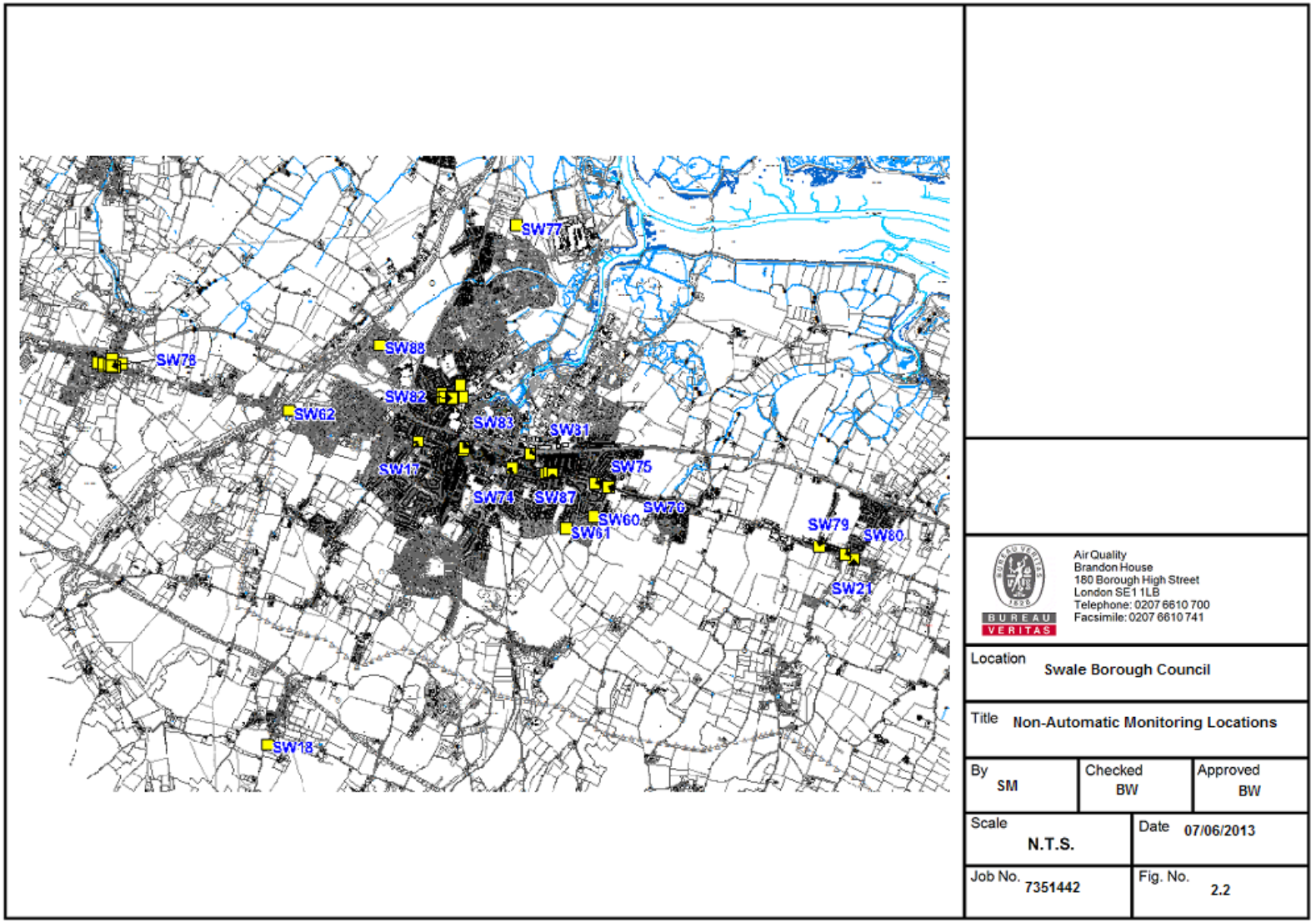


Figure 2-3 Map of Non-Automatic Monitoring Sites – Rushden and Queensborough

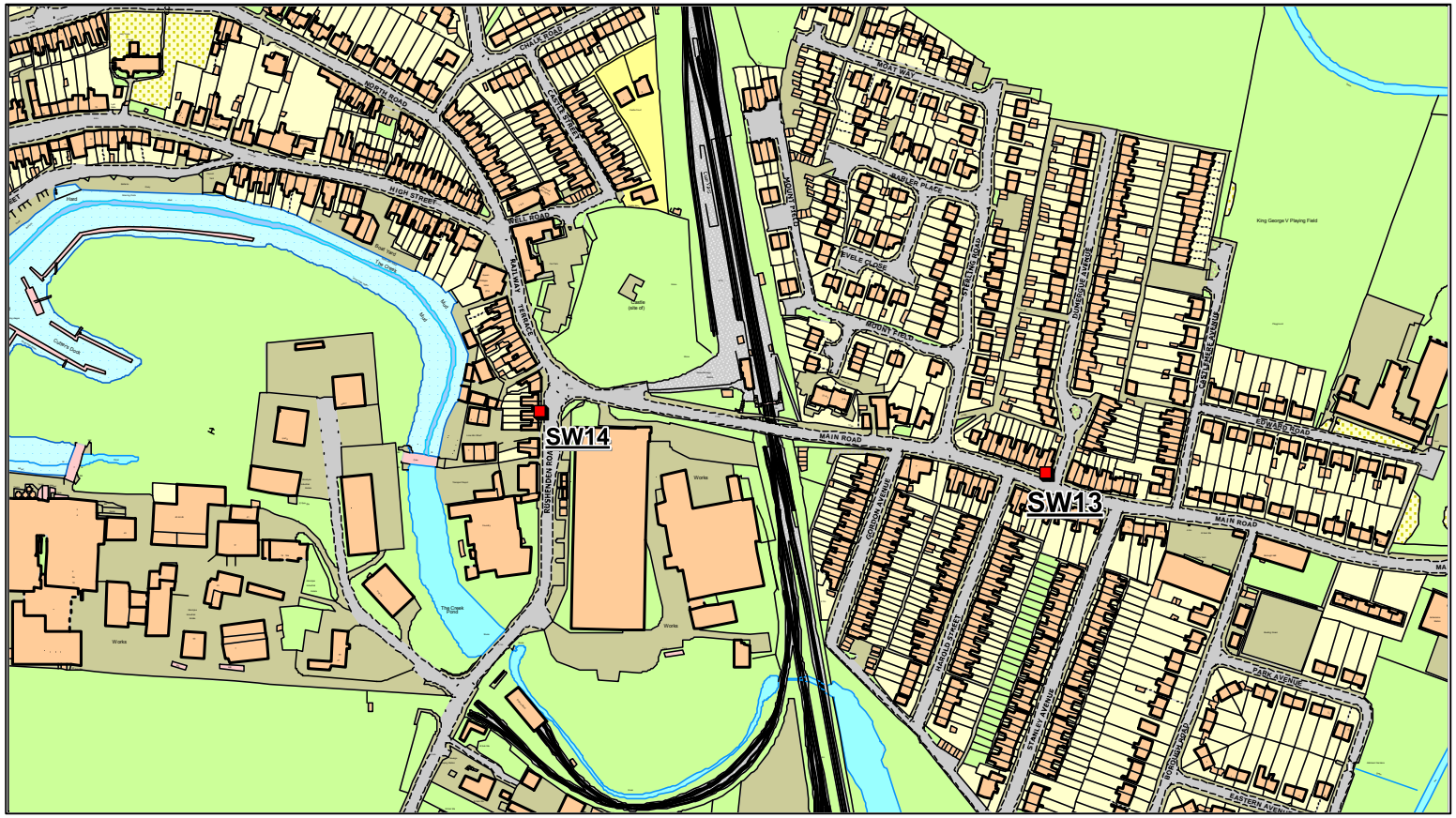


Figure 2-4 Map of Non-Automatic Monitoring Sites – Sheerness Tubes

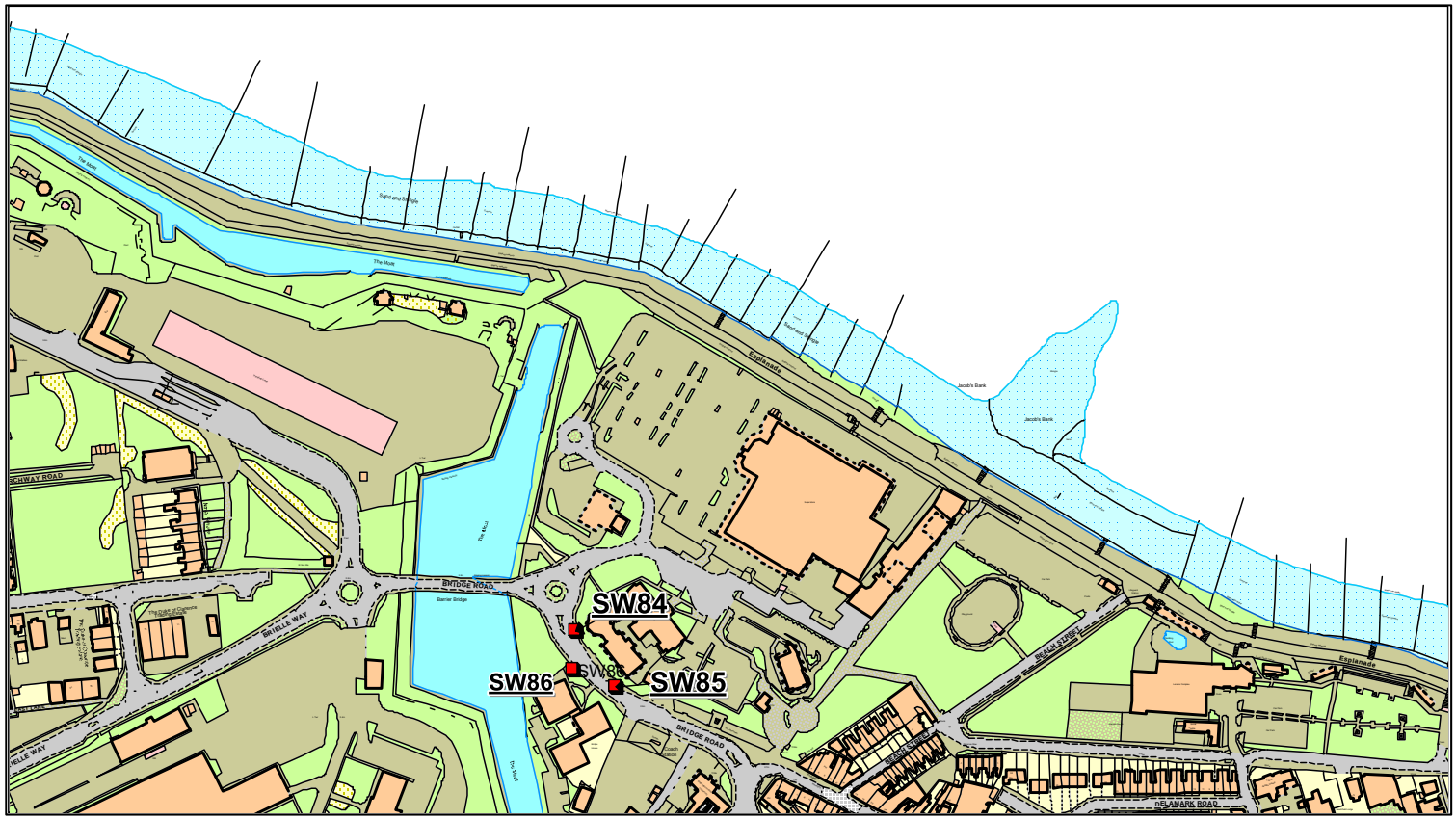


Figure 2-5 Map of Non-Automatic Monitoring Sites – Ospringe

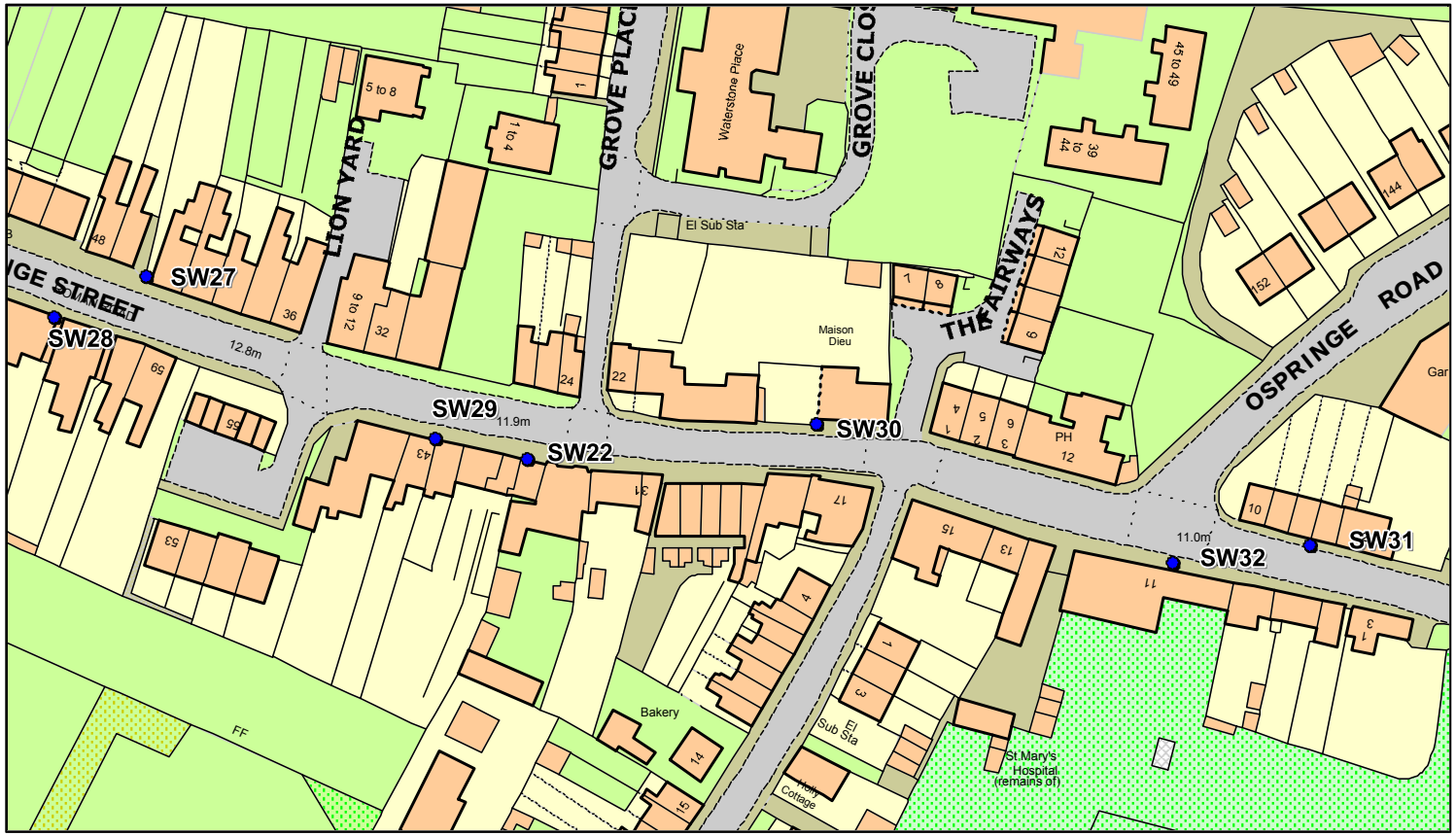


Figure 2-6 Map of Non-Automatic Monitoring Sites - Kemsley

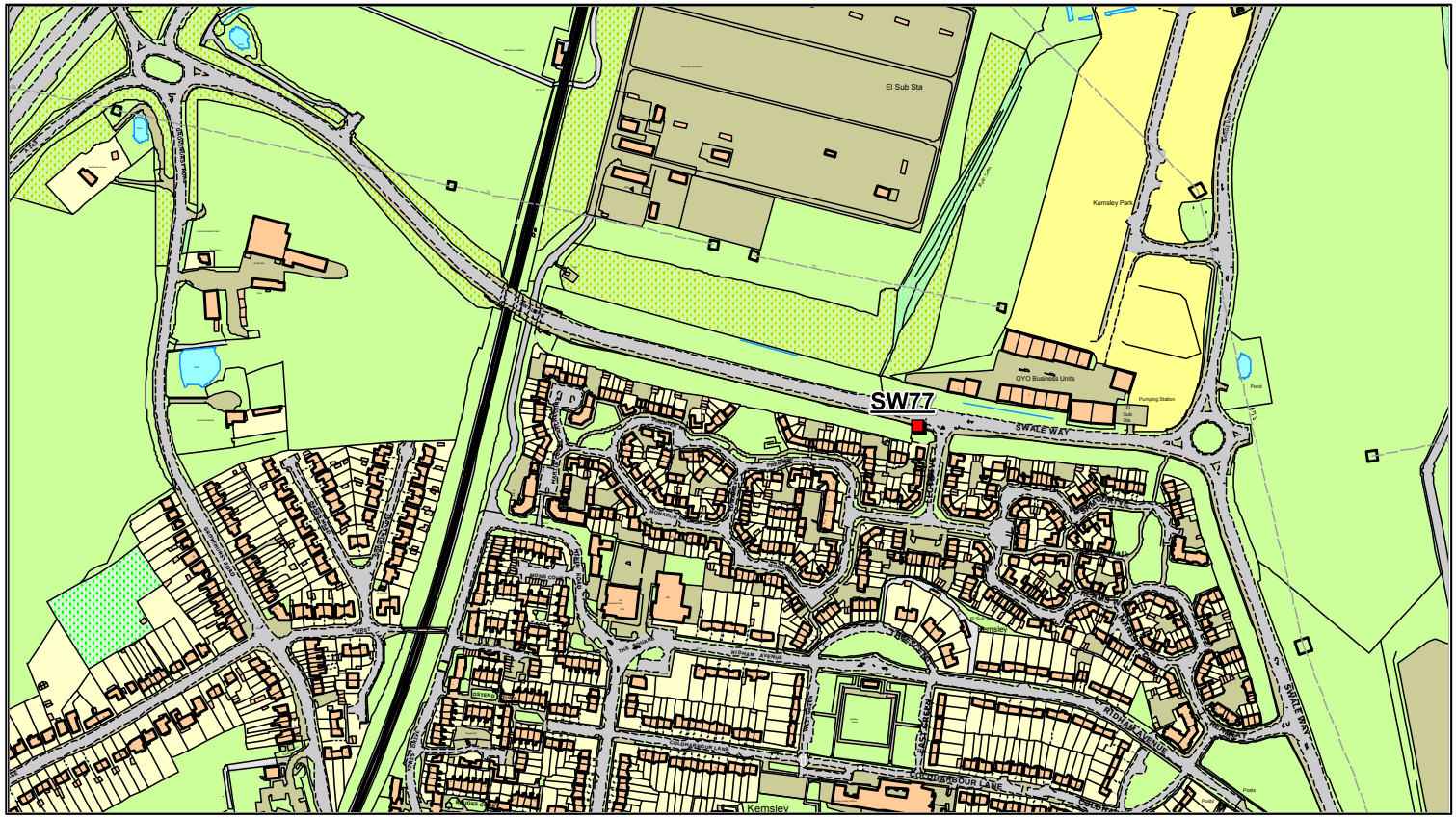


Figure 2-7 Map of Non-Automatic Monitoring Sites – Canterbury Road

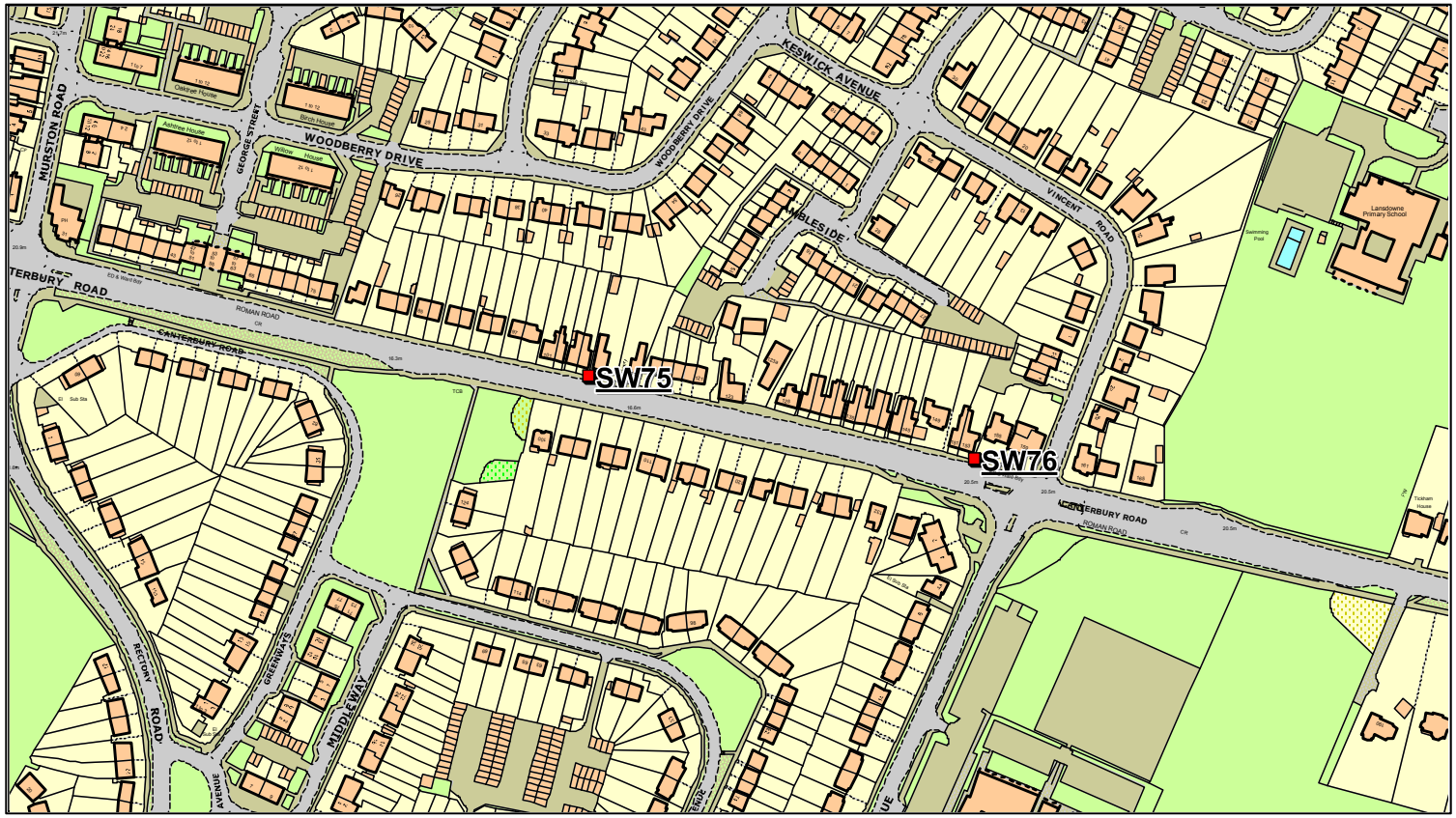


Figure 2-8 Map of Non-Automatic Monitoring Sites - Halfway

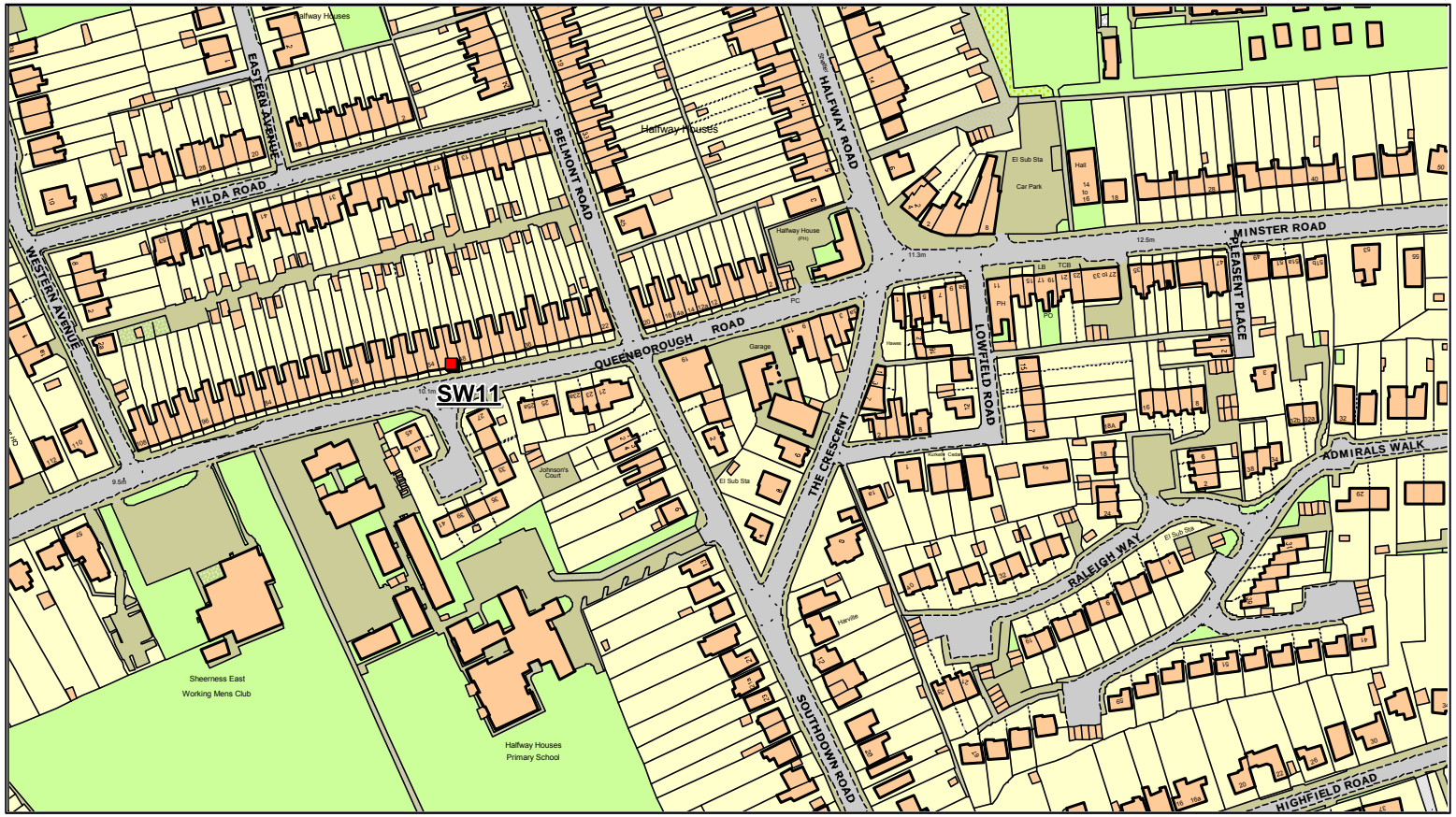


Figure 2-9 Map of Non-Automatic Monitoring Sites - Harty

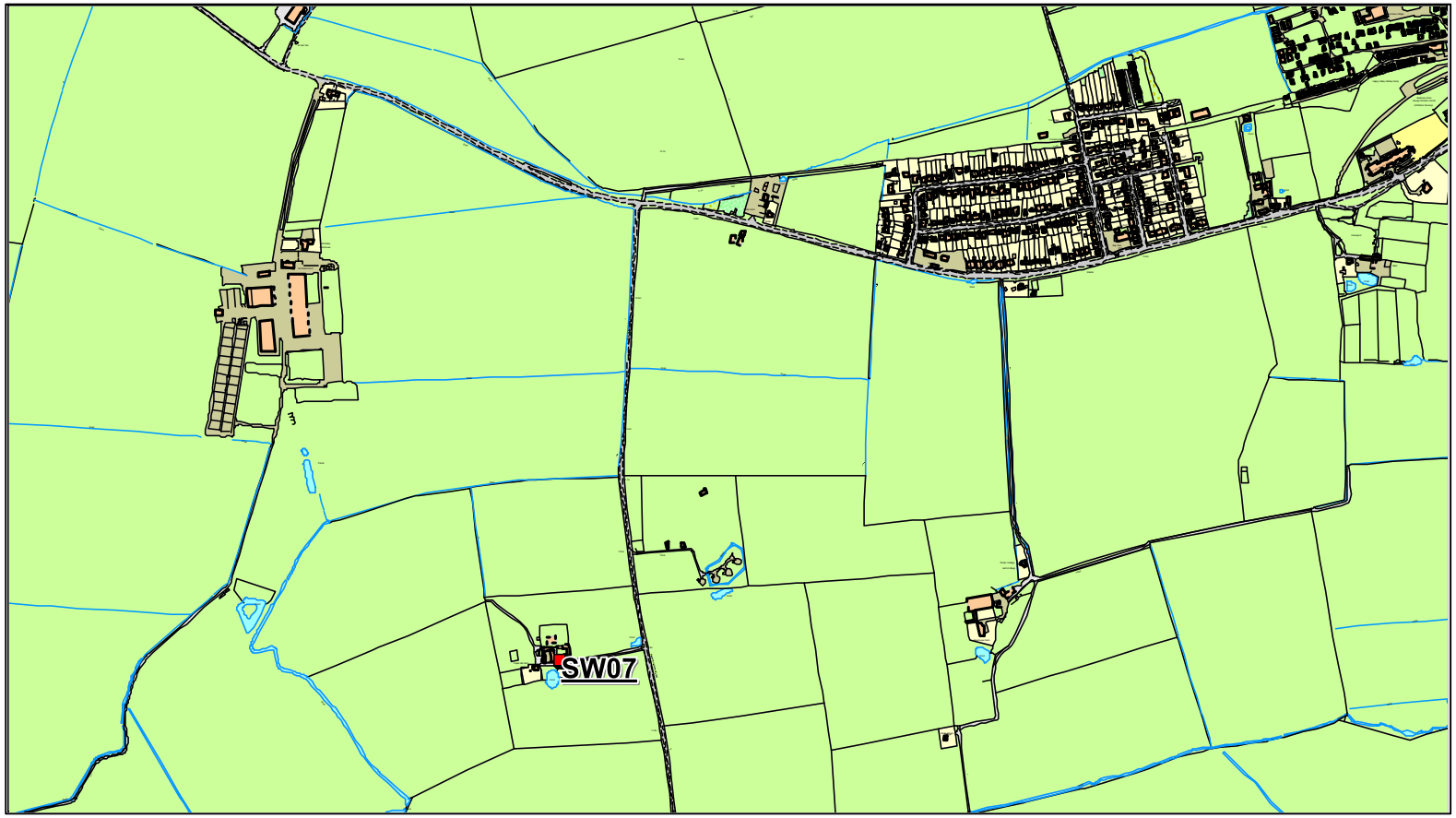


Table 2-2 Details of Non- Automatic Monitoring Sites

Site Name	Site Type	X OS Grid Reference	Y OS Grid Reference	Site Height (m)	Pollutants Monitored	In AQMA?	Is Monitoring Co-located with a Continuous Analyser (Y/N)	Relevant Exposure?	Distance to Kerb of Nearest Road (m)	Does this Location Represent Worst-Case Exposure?
Sheerness										
SW06	K	596379	171546		NO_2	N	N	N	N/A	N
SW07	B	600745	169572	1.5	NO_2	N	N	N	N/A	N
SW84	R	591725	175045	1.85	NO_2	N	N			
SW85	R	591751	175009	1.9	NO_2	N	N			
SW86	R	591723	175020	2.0	NO_2	N	N			
SW11	R	593002	172853	1.75	NO_2	N	N	Y-0 3.5	5.5	N
SW14	R	591170	172087	2.45	NO_2	N	N	Y-1.4 2.8	1.7	N
SW13	R	591487	172048	1.9	NO_2	N	N	Y-1.4 1.6	3.8	N
SW12	R	592282	171498		NO_2	N	N	N	3.8	Y
Newington										
SW66	R	586083	164814	1.9	NO_2	Y	N	Y – 0	1.2	Y
SW45	R	585992	164772	2.3	NO_2	Y	Y	Y-0	1.2	N
SW35	R	585961	164779	2.4	NO_2	Y	Y-0.5	1.4	1.4	Y-0.5
SW42 x 3	R	585936	164788	2.2	NO_2	Y	Y	Y-1.4	1.3	Y
SW19	R	585918	164790	2.4	NO_2	Y	Y	Y-0	2.3	N
SW37	R	585867	164801	2.3	NO_2	Y	Y-0	4	1.7	Y-0
SW38	R	585781	164834	2.0	NO_2	Y	Y-1.7	1.6	2.4	Y-1.7

Site Name	Site Type	X OS Grid Reference	Y OS Grid Reference	Site Height (m)	Pollutants Monitored	In AQMA?	Is Monitoring Co-located with a Continuous Analyser (Y/N)	Relevant Exposure?	Distance to Kerb of Nearest Road (m)	Does this Location Represent Worst-Case Exposure?
SW20 x 3	R	585846	164820	2.3	NO_2	Y	Y	Y-0	1.6	N
SW36	R	585928	164798	2.2	NO_2	Y	Y-2.2	<1	3.1	Y-2.2
SW63	R	585958	164832	2.1	NO_2	N	N	Y-0	2.7	N
SW64	R	585962	164882		NO_2	N	N	Y-0	4.6	N
SW78	R	585960	164787	1.9	NO_2	Y	Y	Y – 0.9	2.2	N
Faversham										
SW21	R	595277	162420		NO_2	N	N	Y-0.9	3.8	N
SW28	R	600223	160889	2.4	NO_2	Y	N	Y-0	1.5	N
SW27	R	600241	160894	2.0	NO_2	Y	N	Y-0	2.5	N
SW30 x 3	R	600358	160869	1.9	NO_2	Y	Y-0	1.7	2.3	Y-0
SW31	R	600444	160848	2.4	NO_2	Y	Y-1.4	<1	1.5	Y-1.4
SW32	R	600420	160845	2.0	NO_2	Y	Y1.2	1.3	2.3	Y1.2
SW22	R	600307	160863	2.0	NO_2	Y	N	Y-0	2.7	N
SW29	R	600274	160871	2.07	NO_2	Y	Y-0	3	2.4	Y-0
SW34	B	606624	161110	1.9	NO_2	N	N	N/A	N	N
SW79	R	594840	162566	1.6	NO_2	N	N	Y - 0	4.0	N
SW80	R	595160	162470	1.8	NO_2	N	N	Y – 0.6	1.5	N
Sittingbourne										
SW62	R	588178	164235	2.1	NO_2	N	N	Y-15	1.9	N
SW17	R	589799	163863		NO_2	N	N	N	9.9	N

Site Name	Site Type	X OS Grid Reference	Y OS Grid Reference	Site Height (m)	Pollutants Monitored	In AQMA?	Is Monitoring Co-located with a Continuous Analyser (Y/N)	Relevant Exposure?	Distance to Kerb of Nearest Road (m)	Does this Location Represent Worst-Case Exposure?
SW58	R	590365	163748	2.4	NO_2	N	N	N	2.0	Y
SW53	R	591401	163471	1.6	NO_2	Y	N	Y-0	5.1	N
SW56	R	591451	163465	1.85	NO_2	Y	N	Y-0	2.9	N
SW57	R	591449	163488	2.1	NO_2	Y	N	Y-0	4.3	N
SW87 x 3	R	591489	163472	1.7	NO_2	Y	Y			N
SW60	K	592012	162940		NO_2	N	N	Y-9.6	<1	Y
SW61	K	591656	162788		NO_2	N	N	N	<1	N
SW18	B	587918	160134		NO_2	N	N	N 4.8	7.5	N
SW74	R	590983	163545	1.95	NO_2	N	N	Y-2.17	1.7	N
SW75	R	592026	163342	2.0	NO_2	N	N	Y-4.0	1.3	N
SW76	R	592194	163306	2.2	NO_2	N	N	Y-3.5	1.7	N
SW77	B	591035	166521	2.0	NO_2	N	N	N	4.4	N/A
SW81	R	591202	163705		NO_2	N	N	Y	8.5	
SW83	R	590375	163774	2.05	NO_2	N	N	Y	1.5	N
SW88	UB	589320	165047	1.9	NO_2	N	N			N
Milton										
SW50	R	590200	164386		NO_2	N	N	Y-0	1.8	N
SW52	R	590203	164409	2.25	NO_2	Y	N	Y-0.8	3.0	N
SW51	R	590235	164408	2.2	NO_2	Y	N	Y-0.5	2.0	N
SW39 x 3	R	590359	164408	2.6	NO_2	Y	N	Y-0	9.0	N

Site Name	Site Type	X OS Grid Reference	Y OS Grid Reference	Site Height (m)	Pollutants Monitored	In AQMA?	Is Monitoring Co-located with a Continuous Analyser (Y/N)	Relevant Exposure?	Distance to Kerb of Nearest Road (m)	Does this Location Represent Worst-Case Exposure?
SW65	R	590341	164558	1.85	NO_2	N	N	Y-0	2.4	N
SW70	R	590142	164425	2.5	NO_2	Y	N	Y-3.6	3.0	N
SW71	R	590096	164455	2.2	NO_2	N	N	Y-6.1	3.0	N
SW72	R	590094	164397	2.1	NO_2	N	N	Y-2	1.7	N
SW73	R	590122	164405	2.2	NO_2	Y	N	Y-2.8	3	N
SW82 x 3	R	590228	164396	2.3	NO_2	Y	N	N	1.65	N

Note: Sites highlighted green are those that closed in April 2013

2.2 Comparison of Monitoring Results with Air Quality Objectives

2.2.1 Nitrogen Dioxide

There are two Air Quality Objectives for NO_2, namely:

- the annual mean of 40µg/m^3, and
- the 1-hour mean of 200µg/m^3 not to be exceeded more than 18 times a year.

Automatic Monitoring Data

The Council monitored NO_2 at three locations during 2012. Data capture was greater than 90% at all the sites during 2012.

The Council installed a further air quality monitoring station in January 2013. This monitoring station will be included in the 2014 Progress Report.

The monitoring data for the other three monitoring locations can be seen in Table 2.3 and 2.4 below.

Results for 2012 indicate that both the annual mean objective and the 1-hour objective were met at all automatic monitoring locations.

Figure 2.3 shows the trend in NO_2 concentration from 2008 through to 2012 at the monitoring locations. This shows that annual mean concentrations have shown an increase at both the Newington and Canterbury Roadside sites, with the Ospringe Roadside location showing a reduction in annual mean concentration compared to the 2011 monitoring result.

Table 2-3 Results of Automatic Monitoring for NO_2: Comparison with Annual Mean Objective

Site ID	Site Type	Within AQMA?	Valid Data Capture for Monitoring Period %	Valid Data Capture 2012 %	Annual Mean Concentration (µg/m^3)				
					2008	2009	2010	2011	2012
Ospringe Roadside	Roadside	Y	97.3	97.3	34	31	38.6	38.8	34.8
Newington (3)	Roadside	Y	99.2	99.2	-	-	-	28.5	30.4
Canterbury Road	Roadside	Y	90.4	90.4	-	-	-	36.9	37.4

Figure 2-10 Trends in Annual Mean NO_2 Concentrations Measured at Automatic Monitoring Sites

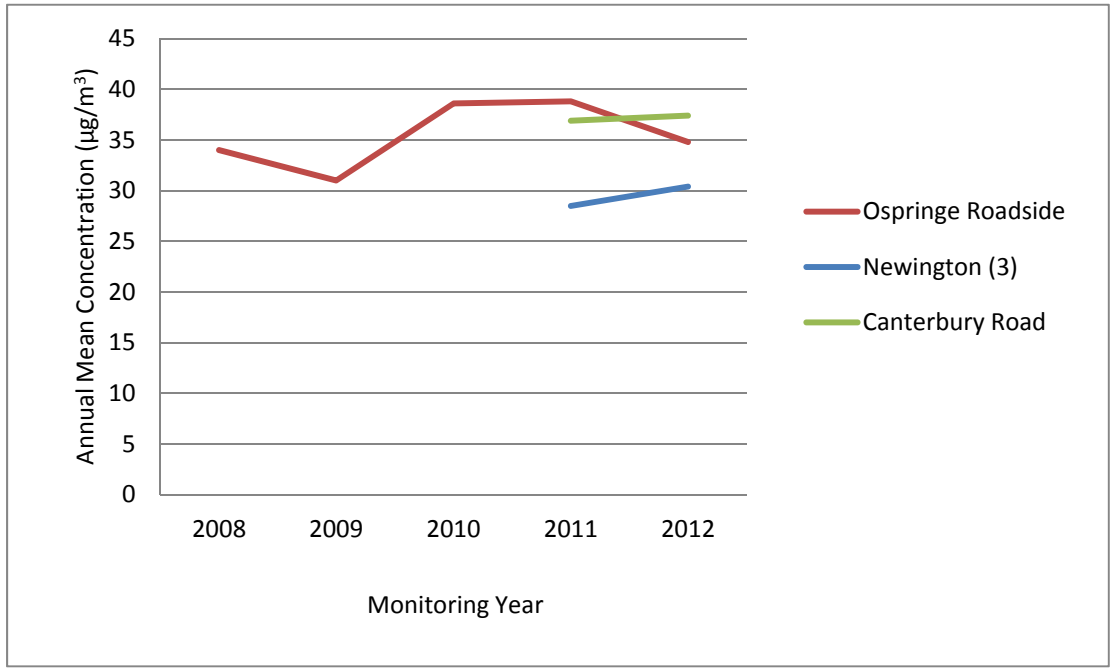


Figure 2.3 shows the trend in annual mean concentration at the continuous monitoring locations. This shows that whilst both Newington and Canterbury Road have shown an increase in the annual mean concentration from 2011, the annual mean has decreased at the Ospringe Roadside location. All continuous monitoring sites remain below the annual mean objective across the monitoring period.

Table 2-4 Results of Automatic Monitoring for NO_2: Comparison with 1-hour Mean Objective

Site ID	Site Type	Within AQMA?	Valid Data Capture for Monitoring Period %	Valid Data Capture 2012 %	Number of Hourly Means > 200µg/m^3				
					2008	2009	2010	2011	2012
Ospringe Roadside	Roadside	Y	97.3	97.3	0	0	0	0	0
Newington (3)	Roadside	Y	99.2	99.2	-	-	-	0	0
Canterbury Road	Roadside	Y	90.4	90.4	-	-	-	0 (107)	0

If the period of valid data is less than 90%, the 99.8th percentile of hourly means is included in brackets

Diffusion Tube Monitoring Data

The NO_2 diffusion tube data are summarised in Table 2.5. The full dataset (monthly mean values) are included in Appendix A. A number of sites had data capture of less than 75% and were annualised. The details of the annualisation can be found in Appendix A.

Please note that the diffusion tube annual mean results have been corrected using the bias correction factor of 0.80, as calculated from local colocation studies. Swale Borough Council also participates in the Kent and Medway Air Quality Monitoring Network and as such the diffusion tube data is reported in the annual report. This report has used the national bias correction factor of 0.79; as such there may be slight differences in the reported annual means between the two reports.

Please note that Tube SW30 has been previously reported as being located at 3 Ospringe Street; however the actual location of this tube is 18/19 Ospringe Street. The monitoring location has not changed, only the name of the location.

For the 2012 data set there were sixteen sites where the annual mean AQS objective was exceeded. Of those sites showing an exceedence, thirteen were located within existing AQMAs.

Those sites that were outside of existing AQMAs are listed below:

- SW80 – Michaels Hairdressers;
- SW62 – Key Street, Sittingbourne; and
- SW76 – 155 Canterbury Road, Sittingbourne.

The 2012 USA reported that there had been an exceedence at the SW79 monitoring location. It has been noted that this was incorrect and the exceedence was at the SW80 monioring location. The past monitoring data has been corrected for these two sites in this report.

With the corrected monitoring information it is the second year that an exceedence has been observed at the SW80 monitoring location. Sites SW79 and SW21, which are located on the same section of the road, recorded concentrations below the objective for 2012. As the diffusion tube is located close to relevant exposure, and further analysis indicatives that the objective is likely to be exceeded at relevant locations, it is recommended that a Detailed Assessment of concentrations in this area is undertaken.

Site SW62, Key Street, Sittingbourne has an annual mean of 42.2 µg/m^3 and SW76 had an annual mean of 40.7 µg/m^3 for the 2012 period. These sites have been distance corrected to give an indication of what the annual mean is likely to be at relevant receptor locations. This indicates that there is no exceedence at the façade of the relevant exposure at either monitoring location. Full details of the distance correction are provided in the Appendix.

The annual mean for Site SW82, The Conservative Club, St Pauls Street was 62.3 µg/m^3 for 2012, this has shown a reduction from the 2011 result, however the annual mean remains above 60 µg/m^3. This result was based on triplicate exposure and good data capture, with no requirement for annualisation. There are no relevant receptors at this location with regards to the annual mean objective. An annual mean concentration greater than 60 µg/m^3 is considered to show potential to exceed that short term 1-hour objective. Swale Borough Council have installed a continuous monitor on St Paul's Street in 2013. It is recommended the results from this monitoring location are investigated in terms of the short term objective in the next progress report. It is also recommended that monitoring continues in this location. Swale Borough Council should also look to install additional diffusion tubes along St Pauls Street, particularly in locations where there are receptors for the annual mean objective.

Table 2-5 Results of NO_2 Diffusion Tubes 2012

Site ID	Location	Site Type	Within AQMA?	Triplicate or Co-located Tube	Full Calendar Year Data Capture 2012 (Number of Months)	2012 Annual Mean Concentration ($\mu g/m^3$) - Bias Adjustment factor = 0.80
Sheerness						
SW06	Lower Rd, Brambledown	K	N	N	3	22.2
SW07	Harty, Sheerness	B	N	N	11	13.3
SW84	Sheerness College 1	R	N	N	11	30.0
SW85	Sheerness College 2	R	N	N	8	29.5
SW86	Swale Foyer	R	N	N	7	28.9
SW11	Queenborough Rd, Halfway	R	N	N	11	24.3
SW14	Rushenden Road, Q/B	R	N	N	11	24.4
SW13	Main Road, Q/B	R	N	N	11	24.2
SW12	A249 Lay by Neat's Court	R	N	N	3	22.8
Newington						
SW66	96/94 High Street, Newington	R	Y	N	10	39.2
SW45	64 High Street, Newington	R	Y	N	9	**42.0**
SW35	60 High Street, Newington	K	Y	N	9	**46.1**
SW42	High Street, Opp Church Lane	K	Y	Triplicate	7	**47.9**

Site ID	Location	Site Type	Within AQMA?	Triplicate or Co-located Tube	Full Calendar Year Data Capture 2012 (Number of Months)	2012 Annual Mean Concentration (µg/m^3) - Bias Adjustment factor = 0.80
SW19	Newington Social Club	K	Y	N	5	28.8
SW37	32 High Street, Newington	K	Y	N	9	**41.5**
SW38	15a High Street, Newington	R	Y	N	11	34.7
SW20	Newington Co Op, A2, Newington	R	Y	Triplicate & co-located	8	34.2
SW36	49 High Street, Newington	R	Y	N	11	33.4
SW63	4 Church Lane, Newington	R	N	N	3	20.9
SW64	21 Church Lane, Newington	R	N	N	3	18.9
SW78	Vari Restaurant, High Street	R	Y	N	7	37.2
Faversham						
SW21	A2 London Road, Teynham	R	N	N	3	25.5
SW28	Mayors Arms, Ospringe Street	R	Y	N	11	**53.9**
SW27	44 Ospringe Street, Faversham	R	Y	N	11	25.2
SW30	18/19 Ospringe Street	R	Y	Triplicate & co-located	11	36.4
SW31	4 Ospringe Street	R	Y	N	11	**47.5**

Site ID	Location	Site Type	Within AQMA?	Triplicate or Co-located Tube	Full Calendar Year Data Capture 2012 (Number of Months)	2012 Annual Mean Concentration (µg/m^3) - Bias Adjustment factor = 0.80
SW32	11 Ospringe Street	R	Y	N	10	**45.5**
SW22	35 Ospringe Street	R	Y	N	11	**51.7**
SW29	43 Ospringe Street	R	Y	N	11	**52.8**
SW34	Hernehill Village Hall	B	N	N	11	13.1
SW79	Belle Friday Centre, A2 Teynham	R	N	N	10	20.2
SW80	Michaels Hairdressers A2 Teynham	R	N	N	11	**45.2**
Sittingbourne						
SW62	Key Street, Sittingbourne	R	N	N	11	**42.2**
SW17	Balmoral Terrace, A2 London Road	R	N	N	3	23.9
SW58	Dover Street Filling Station, Dover Street	R	N	N	11	31.1
SW53	114 East Street, Sittingbourne	R	Y	N	11	**41.0**
SW56	126 East Street, Sittingbourne	R	Y	N	11	39.8
SW57	169 East Street, Sittingbourne	R	Y	N	11	33.8
SW87	Canterbury Road AQ Station	R	Y	Triplicate and Co-located	11	36.0
SW60	72/74 Swanstree Ave, Sittingbourne	K	N	N	3	18.7

Site ID	Location	Site Type	Within AQMA?	Triplicate or Co-located Tube	Full Calendar Year Data Capture 2012 (Number of Months)	2012 Annual Mean Concentration (µg/m^3) - Bias Adjustment factor = 0.80
SW61	R/O Wadham Place	K	N	N	3	17.0
SW18	Parsonage Lane, Bredgar	B	N	N	6	14.7
SW74	Bell Road Retirement Apartments	R	N	N	10	29.2
SW75	109 Canterbury Road, Sittingbourne	R	N	N	9	26.9
SW76	155 Canterbury Road, Sittingbourne	R	N	N	11	**40.7**
SW77	Kemsley Fields, Swale Way	B	N	N	11	31.3
SW81	Lime Grove, Sittingbourne	R	N	N	3	21.8
SW83	Pembury Court, Dover Street	R	N	N	10	33.6
SW88	Sonara Way	UB	N	N	11	27.2
Milton						
SW50	Church Street, Milton	R	N	N	11	24.8
SW52	20/22 St Pauls Street, Milton	R	Y	N	11	**41.7**
SW51	14/16 St Pauls Street, Milton	R	Y	N	10	**42.2**
SW39	Giles Young Court, Milton	R	Y	Triplicate	9	31.9
SW65	5 Crown Road, Milton	R	N	N	11	30.9
SW70	Stumble Inn, St Pauls Street, Sittingbourne	R	Y	N	9	30.8

Site ID	Location	Site Type	Within AQMA?	Triplicate or Co-located Tube	Full Calendar Year Data Capture 2012 (Number of Months)	2012 Annual Mean Concentration (µg/m^3) - Bias Adjustment factor = 0.80
SW71	o/s 8 Staple Close, Staplehurst Road	R	N	N	10	37.0
SW72	o/s 1 Alexander Court, Chalkwell Road	R	N	N	11	32.7
SW73	Adj to 14 Chalkwell Road, Sittingbourne	R	Y	N	10	37.2
SW82	Conservative Club, St Pauls Street	R	Y	Triplicate	11	**62.3**

Table 2-6 Results of NO_2 Diffusion Tubes (2008 to 2012)

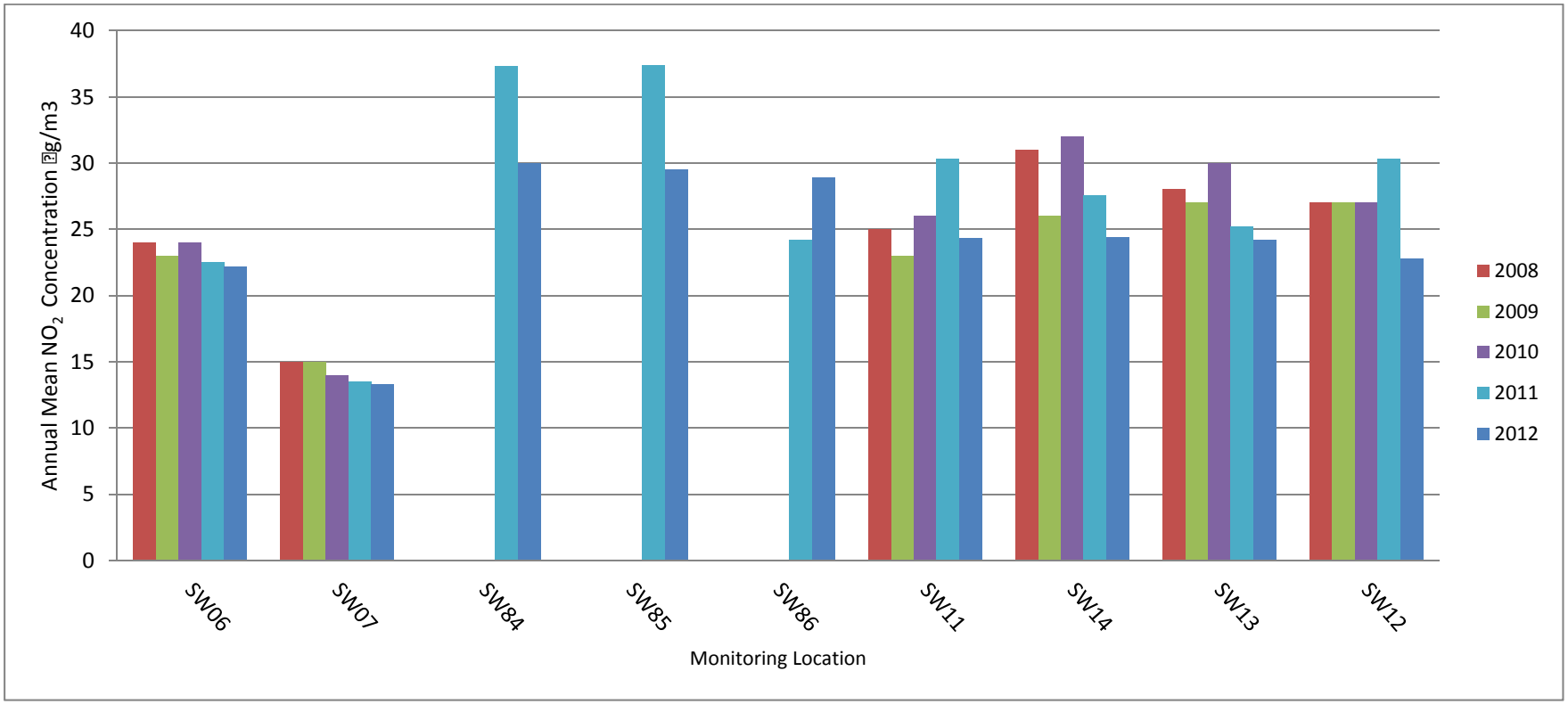
Site ID	Site Type	Within AQMA?	Annual Mean Concentration (µg/m^3) - Adjusted for Bias				
			2008 (Bias Adjustment Factor = 0.78)	2009 (Bias Adjustment Factor = 0.81)	2010 (Bias Adjustment Factor = 0.85)	2011 (Bias Adjustment Factor = 0.89)	2012 (Bias Adjustment Factor =0.80)
Sheerness							
SW06	K	N	24	23	24	22.5	22.2
SW07	B	N	15	15	14	13.5	13.3
SW84	R	N	-	-	-	37.3	30.0
SW85	R	N	-	-	-	37.4	29.5
SW86	R	N	-	-	-	24.2	28.9
SW11	R	N	25	23	26	30.3	24.3
SW14	R	N	31	26	32	27.6	24.4

Site ID	Site Type	Within AQMA?	Annual Mean Concentration (µg/m^3) - Adjusted for Bias				
			2008 (Bias Adjustment Factor = 0.78)	2009 (Bias Adjustment Factor = 0.81)	2010 (Bias Adjustment Factor = 0.85)	2011 (Bias Adjustment Factor = 0.89)	2012 (Bias Adjustment Factor =0.80)
SW13	R	N	28	27	30	25.2	24.2
SW12	R	N	27	27	27	30.3	22.8
Newington							
SW66	R	Y	-	**50**	**44**	**45.0**	39.2
SW45	R	Y	**41**	**50**	**49**	**44.4**	**42.0**
SW35	R	Y	**49**	**56**	**53**	**47.6**	**46.1**
SW42	R	Y	**50**	**51**	**52**	**47.9**	**47.9**
SW19	R	Y	29	30	31	29.7	28.8
SW37	R	Y	39	**40**	**42**	**40.7**	**41.5**
SW38	R	Y	37	35	**40**	35.4	34.7
SW20	R	Y	38	39	**41**	37.3	34.2
SW36	R	Y	34	36	**40**	38.9	33.4
SW63	R	N	-	23	25	24.8	20.9
SW64	R	N	-	18	21	21.3	18.9
SW78	R	Y	-	-	**46**	**42.1**	37.2
Faversham							
SW21	R	N	27	27	33	26.2	25.5
SW28	R	Y	**52**	**43**	**58**	**56.7**	**53.9**
SW27	R	Y	25	24	28	27.8	25.2
SW30	R	Y	35	30	39	**40.4**	36.4

Site ID	Site Type	Within AQMA?	Annual Mean Concentration (µg/m^3) - Adjusted for Bias				
			2008 (Bias Adjustment Factor = 0.78)	2009 (Bias Adjustment Factor = 0.81)	2010 (Bias Adjustment Factor = 0.85)	2011 (Bias Adjustment Factor = 0.89)	2012 (Bias Adjustment Factor =0.80)
SW31	R	Y	**46**	**41**	**55**	**46.5**	**47.5**
SW32	R	Y	**47**	**41**	**49**	**45.9**	**45.5**
SW22	R	Y	**54**	**48**	**60**	**59.6**	**51.7**
SW29	R	Y	**50**	**45**	**54**	**55.1**	**52.8**
SW34	B	N	12	13	13	14.9	13.1
SW79	R	N	-	-	30	**20.9**	20.2
SW80	R	N	-	-	39	45.0	**45.2**
Sittingbourne							
SW62	R	N	-	38	**44**	38.0	**42.2**
SW17	R	N	27	23	27	25.9	23.9
SW58	R	N	**46**	**43**	**45**	36.8	31.1
SW53	R	Y	**40**	**40**	**40**	38.8	**41.0**
SW56	R	Y	**50**	**47**	**48**	**46.5**	39.8
SW57	R	Y	38	36	**41**	33.9	33.8
SW87	R	Y	-	-	**-**	-	36.0
SW60	K	N	20	13	22	20.0	18.7
SW61	K	N	21	17	20	17.4	17.0
SW18	B	N	15	15	18	13.9	14.7
SW74	R	N	-	30	33	29.5	29.2
SW75	R	N	-	27	30	26.7	26.9

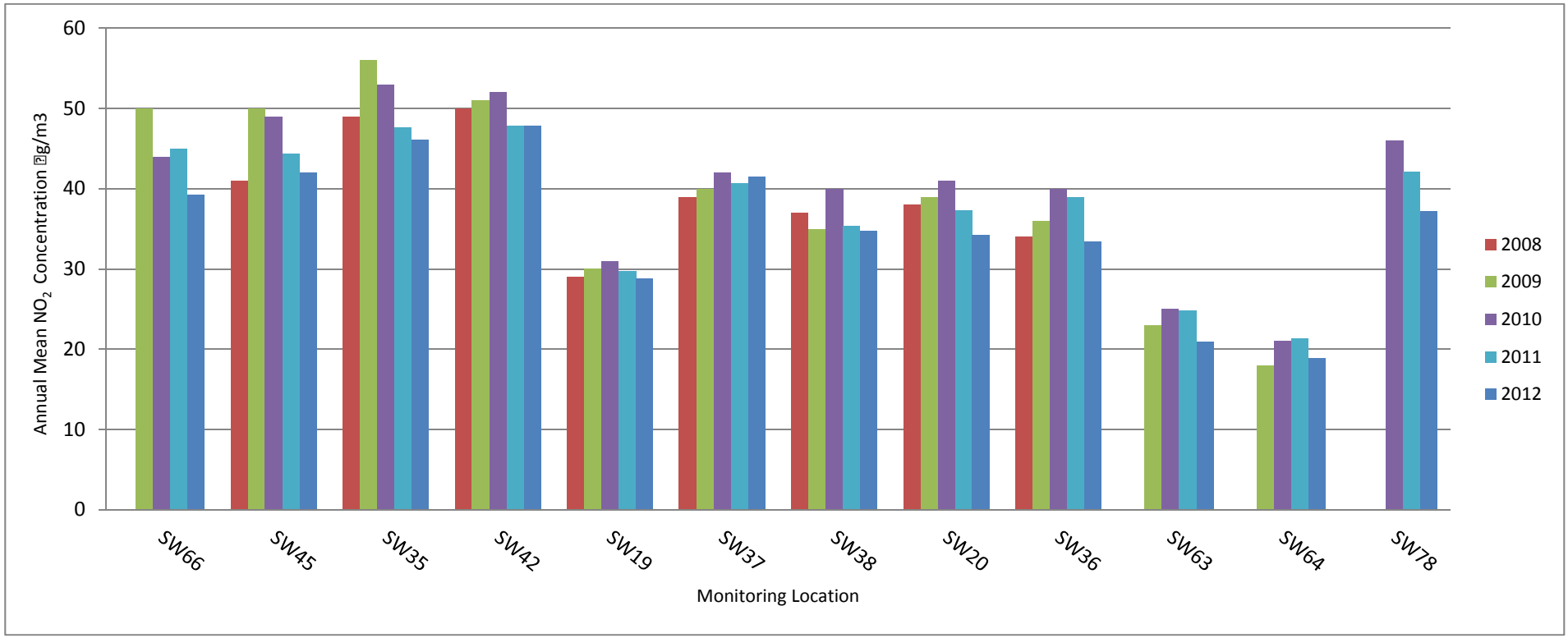
Site ID	Site Type	Within AQMA?	Annual Mean Concentration (µg/m^3) - Adjusted for Bias				
			2008 (Bias Adjustment Factor = 0.78)	2009 (Bias Adjustment Factor = 0.81)	2010 (Bias Adjustment Factor = 0.85)	2011 (Bias Adjustment Factor = 0.89)	2012 (Bias Adjustment Factor =0.80)
SW76	R	N	-	**41**	**43**	37.9	**40.7**
SW77	B	N	-	28	39	32.3	31.3
SW81	R	N	-	-	28	24.4	21.8
SW83	R	N	-	-	39	34.7	33.6
SW88	UB	N	-	-	-	-	27.2
Milton							
SW50	R	N	27	25	31	25.4	24.8
SW52	R	Y	**40**	38	**45**	**41.5**	**41.7**
SW51	R	Y	**49**	**49**	**56**	**46.3**	**42.2**
SW39	R	Y	36	36	39	36.1	31.9
SW65	R	N	-	-	-	-	30.9
SW70	R	Y	-	33	38	29.7	30.8
SW71	R	N	-	27	**40**	35.3	37.0
SW72	R	N	-	36	38	37.2	32.7
SW73	R	Y	-	39	**40**	31.6	37.2
SW82	R	Y	-	-	-	**68.2**	**62.3**

Figure 2-11 Trends in Annual Mean Nitrogen Dioxide Concentrations Measured at Diffusion Tube Monitoring Sites in Sheerness



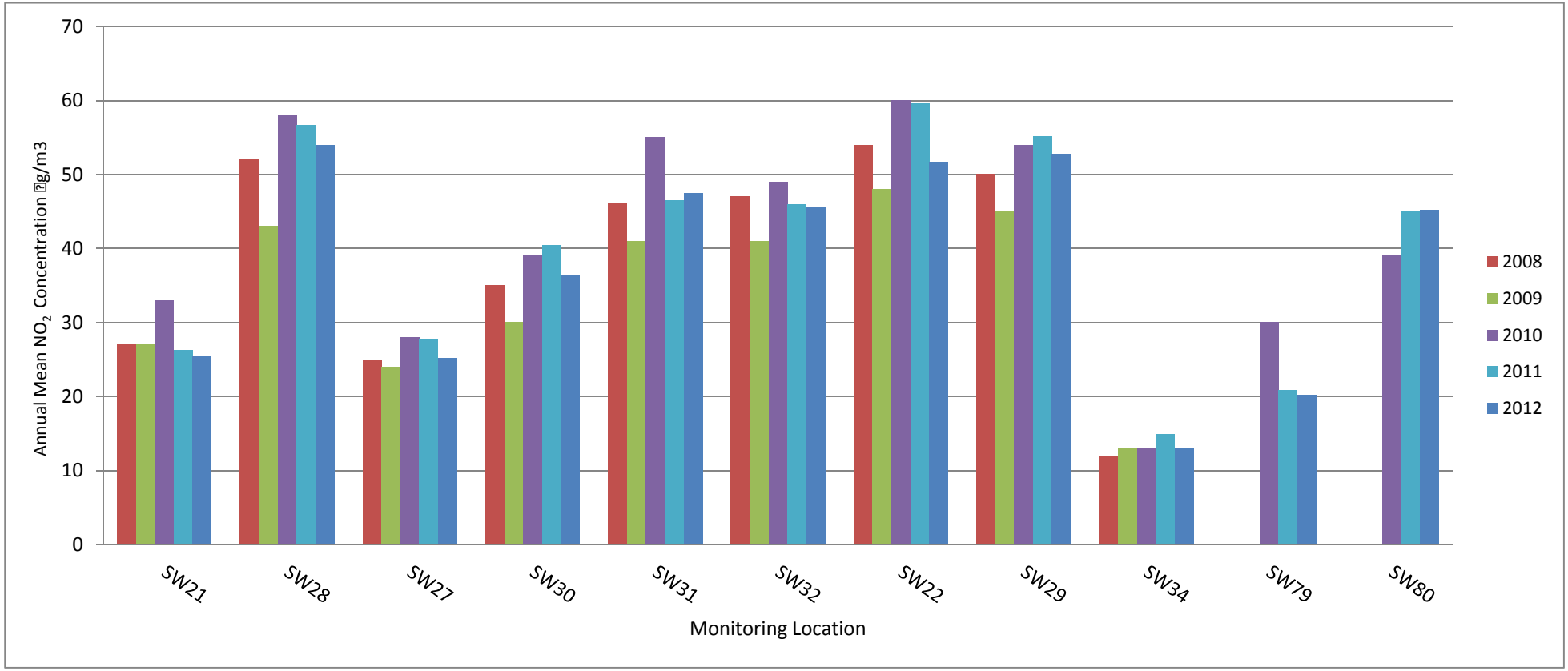
The above figure shows the trend in NO_2 concentration for those sites located in Sheerness. The majority of the monitoring locations have shown a decrease from the 2011, and for a number of sites this is the continuation of a decreasing trend observed over the past two years. There were no monitoring locations where the annual mean objective was exceeded in 2012 in the Sheerness area.

Figure 2-12 Trends in Annual Mean Nitrogen Dioxide Concentrations Measured at Diffusion Tube Monitoring Sites in Newington



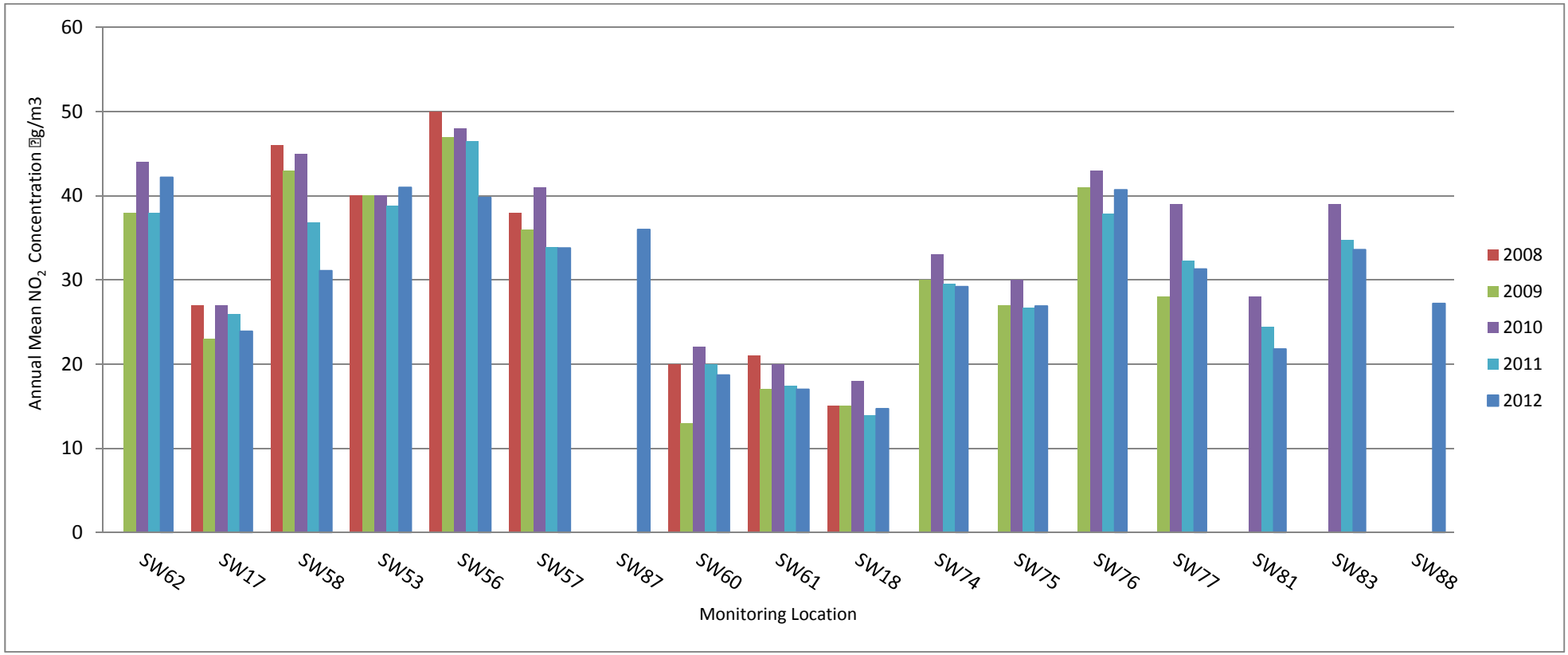
The above figure shows the trend in NO_2 concentration for those sites located in Newington. The majority of the monitoring locations have shown a decrease from the 2011, and for many sites this is the continuation of a decreasing trend observed over the past two years. There were four monitoring locations where the annual mean objective was exceeded in 2012 in the Newington area; all of these sites were located within existing AQMAs.

Figure 2-13 Trends in Annual Mean Nitrogen Dioxide Concentrations Measured at Diffusion Tube Monitoring Sites in Faversham



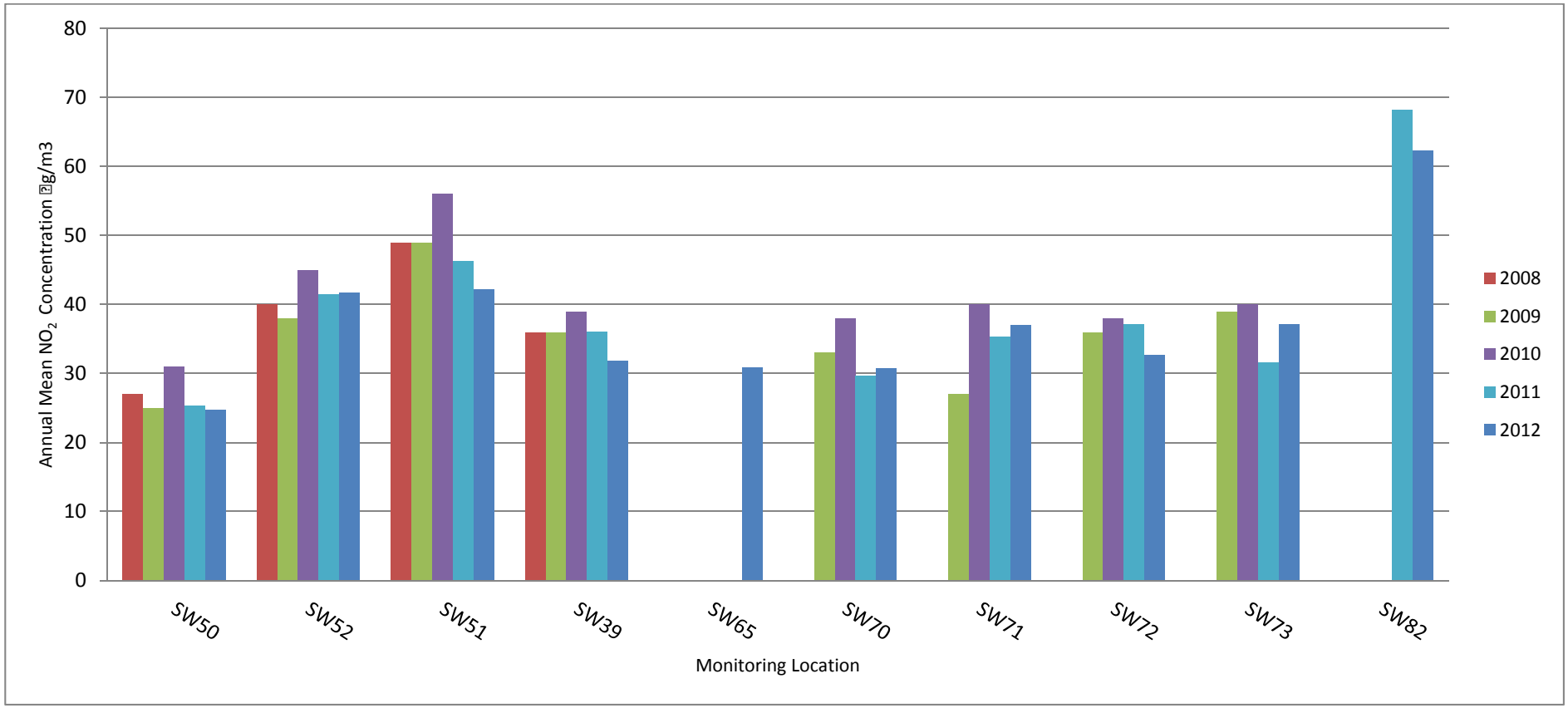
The above figure shows the trend in NO_2 concentration for those sites located in Faversham. The majority of the monitoring locations have shown a decrease from the 2011 concentrations, and for many sites this is the continuation of a decreasing trend observed over the past two years. There were six monitoring locations where the annual mean objective was exceeded in 2012 in the Faversham area, of these five of which are located within existing AQMAs.

Figure 2-14 Trends in Annual Mean Nitrogen Dioxide Concentrations Measured at Diffusion Tube Monitoring Sites in Sittingbourne



The above figure shows the trend in NO_2 concentration for those sites located in Sittingbourne. The majority of the monitoring locations have shown a decrease from the 2011, and for many sites this is the continuation of a decreasing trend observed over the past two years. There were three monitoring locations where the annual mean objective was reached in 2012 in the Sittingbourne area. Two of these sites are currently outside of any existing AQMAs.

Figure 2-15 Trends in Annual Mean Nitrogen Dioxide Concentrations Measured at Diffusion Tube Monitoring Sites in Milton



The above figure shows the trend in NO_2 concentration for those sites located in Milton. The majority of the monitoring locations have shown a decrease from the 2011, and for many sites this is the continuation of a decreasing trend observed over the past two years. There were three monitoring locations where the annual mean objective was exceeded in 2012 in the Milton area. All of the sites are within an existing AQMA.

2.2.2 Particulate Matter (PM_{10})

There are two Air Quality Objectives for PM_{10}, namely:

- the annual mean of 40µg/m^3; and
- the 24-hour mean of 50µg/m^3 not to be exceeded more than 35 times a year.

The Council undertook monitoring of PM_{10} using TEOM analysers at one location during 2012. The results presented are gravimetric equivalent. Ricardo-AEA undertake the QA/QC and data management for the Council, further details of this are presented in the appendix.

The 2012 results show that the annual mean and the 24-hour mean continue to be met at the monitoring location within the borough. The 2012 pollutant levels show a decrease in both the annual mean concentration and the number of daily means greater than 50 µg/m^3.

Table 2-7 Results of Automatic Monitoring for PM_{10}: Comparison with Annual Mean Objective

Site ID	Site Type	Within AQMA?	Valid Data Capture for Monitoring Period % [a]	Valid Data Capture 2012 % [b]	Confirm Gravimetric Equivalent (Y or N/A)	Annual Mean Concentration (µg/m^3)				
						2008	2009	2010	2011	2012
ZW3	Roadside	Y	99.5	99.5	Y	-	28	22	29	26.4

Figure 2-16 Trends in Annual Mean PM_{10} Concentrations

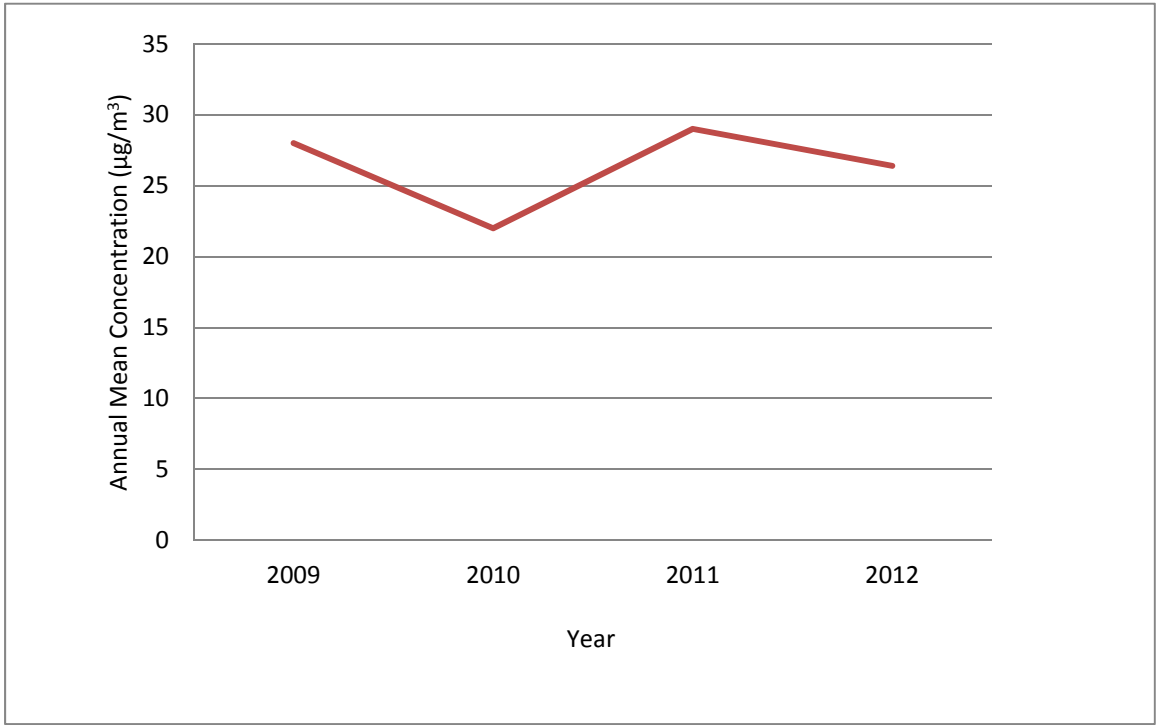


Figure 2.16 shows the trend in PM_{10} concentrations at the monitoring location. The graph shows that PM_{10} concentrations have varied over the four year period, with decreases observed in 2010 and 2012. Annual mean concentrations have remained below the annual mean objective for this period.

Table 2-8 Results of Automatic Monitoring for PM_{10}: Comparison with 24-hour Mean Objective

Site ID	Site Type	Within AQMA?	Valid Data Capture for Monitoring Period % [a]	Valid Data Capture 2012 % [b]	Confirm Gravimetric Equivalent (Y or N/A)	Number of Daily Means > 50µg/m^3				
						2008	2009	2010	2011	2012
ZW3	Roadside	Y	99.5	99.5	Y	-	1 (34)	3 (33)	34	12

[a] if data capture is less than 90%, include the 90th percentile of 24-hour means in brackets

2.2.3 Sulphur Dioxide (SO_2)

There is currently no Sulphur Dioxide monitoring undertaken by Swale Borough Council.

2.2.4 Benzene

There is currently no Benzene monitoring undertaken by Swale Borough Council.

2.2.5 Summary of Compliance with AQS Objectives

The continuous monitoring locations in the borough all recorded levels below the AQS objectives in 2012.

The diffusion tube network identified sixteen sites within the borough where the annual mean NO_2 objective was exceeded, thirteen of these locations where within existing AQMAs.

The annual mean objective was exceeded at the SW80, Michaels Hairdressers in Teyham. It is recommended that a Detailed Assessment is undertaken for this area.

Exceedence of the annual mean objective was recorded at sites SW82, with an annual mean concentration of 62.3 µg/m^3. At this location there is no relevant exposure with regards to the annual mean objective. An annual mean of greater than 60 µg/m^3 indicates the potential for exceedences of the short term objective. Swale Borough Council have installed a continuous monitor on St Paul's Street in 2013. It is recommended the results from this monitoring location are investigated in terms of the short term objective in the next progress report. Swale Borough Council should also look to install additional diffusion tubes along St Paul's Street, particularly in locations where there are receptors for the annual mean objective

Swale Borough Council has measured concentrations of NO_2 above the annual mean objective at relevant locations outside of the existing AQMAs, and **will need to proceed to a Detailed Assessment**, for the area around SW80 in Teynham.

3 New Local Developments

3.1 Road Traffic Sources

LAQM requires local authorities to consider the following:

- Narrow congested streets with residential properties close to the kerb;
- Busy streets where people may spend one hour or more close to traffic;
- Roads with a high flow of buses and/or HGVs;
- Junctions;
- New roads constructed since the last Updating and Screening Assessment;
- Roads with significantly changed traffic flows; and
- Bus or coach stations.

There is currently an application for a residential development in Ospringe, Barkaways. The proposed development is for eight residential units and associated parking. The development is not considered likely to have a significant impact upon existing traffic flows. The air quality assessment completed for the development included modelled predictions of the pollutant concentrations at the proposed residential locations and existing receptors. The modelling was completed using ADMS-Roads. The assessment concluded that annual mean concentrations in the completion year of 2015 are likely to be below the objective level for NO_2 at all but one location, located on the façade of A2 Ospringe Street. Mitigation measures have been identified for this residential area. No change in pollutant concentrations at existing receptor locations was predicted from the modelled outcome.

Swale Borough Council have received a planning application for a commercial development at land at Western Link in Faversham. The development includes creation of new access from Western Link and the construction of a new roundabout. Modelling of the operational phase of the development has been completed using Breeze Roads dispersion modelling tool. The model predicts that the impact with regards to NO_2 emission is negligible to slight adverse at receptor locations, with the objective being met at all modelled locations. With regards to PM_{10} the impact is considered to be of negligible significance and concentrations remain within the objective levels at all modelled receptors.

An air quality assessment has been completed as part of an application for ten residential dwellings at Vicarage Court, Newington with 19 car parking spaces. The assessment was completed using ADSM-Roads. The model predicted that there would be no exceedneces of

the air quality objectives for NO_2 or PM_{10} as a result of the development, with annual NO_2 concentration increases considered to be imperceptible.

Swale Borough Council have also identified the following applications which may impact air quality:

- SW/13/0680 Nicholls Development, Swale Way – this is an application for Nicholls Transport Depot to relocate to land north of Swale Way in Sittingbourne. The relocation would allow for a 15% increase in the size of the company. A planning decision has yet to be made as to this development;
- Residential Development: The Old Cold Store, Selling ME13 9RL – Planning application for 20 starter homes on old farm storage land;
- Neats Court Development, Isle of Sheppey – Request for outline planning permission for a 5.565 m^2 of B class employment space, associated car parking and landscaping. In addition full planning permission sought for retail foodstore of 5,130 m^2 plus petrol filling station, a family pub/restaurant of 734 m^2, a 'drive-thru' restaurant of 248 m^2, a retail terrace of 3,960 m^2 and trade counter units of 1,952 m^2 and associated parking of 664 spaces, access and landscaping. Phase 1 of the development is currently underway, including the foodstore and the 'drive-thru' restaurant.

These developments will be reviewed further in the next Updating and Screening Assessment.

3.2 Other Transport Sources

LAQM requires local authorities to consider the following:

- Airports;
- Locations where diesel or stream trains are regularly stationary for periods of 15 minutes or more, with relevant exposure within 15m;
- Locations with a large number of movements of diesel locomotives and long term relevant exposure within 30m; and
- Shipping ports.

Swale Borough Council confirms that of the above categories there have been no new or newly identified sources which have not been considered in previous rounds of review and assessment.

3.3 Industrial Sources

LAQM requires local authorities to consider the following:

- Industrial Installations: new or proposed;
- Industrial installations: existing where emissions have increased substantially or relevant exposure introduced;
- Major fuel storage depots;
- Petrol stations; and
- Poultry farms.

Swale Borough Council has identified 2 petrol station applications that have not been previously assessed; these are located in Sittingbourne and Sheppey. The petrol station in Sittingbourne was approved and a permit issued in April 2013, with the Sheppey permit approval imminent. There are no relevant receptors within 10m of either petrol station; therefore further assessment is not required.

3.4 Commercial and Domestic Sources

LAQM requires local authorities to consider the following:

- Biomass combustion plant – individual installations;
- Areas where the combined impact of several biomass combustion sources may be relevant; and
- Areas where domestic solid fuel burning may be relevant.

Swale Borough Council has identified the following biomass installations which have not been assessed previously:

- SW/13/0814 Rhode Court Barn, Selling ME13 9PS – installation of a domestic biomass boiler 130kW; and
- SW/10/1146 Countrystyle Recycling, Ridham Dock ME9 8SR – installation of a biomass power plant for the generation of renewable energy from low grade waste wood.

Further information is not currently available on these installations; as such a screening assessment cannot be completed at this time. These will be assessed further in the next Updating and Screening Assessment.

3.5 New Developments with Fugitive or Uncontrolled Sources

LAQM requires local authorities to consider the following:

- Landfill sites;
- Quarries;
- Unmade haulage roads on industrial sites;
- Waste transfer stations; and
- Any other potential sources of fugitive particulate emissions.

An application was approved in for a wood shredding and storage facility to be used at the Countrystyle Recycling centre at Ridham Dock, Sittingbourne. As part of the application, an air quality assessment was undertaken and a dust management plan has been produced. The air quality assessment concluded that the risk from fugitive dust emissions was negligible and the impact of these emissions should there be prolonged dry weather conditions be negligible as there are no residential receptors within 200m of the installation.

The dust management plan includes maintenance and cleaning requirements for the equipment and for the cessation of works should any dust be visible outside of the site.

Swale Borough Council has identified the following new or previously unidentified local developments which may impact on air quality in the Local Authority area.

- Residential development in Ospringe, Barkaways
- Nicholls Development, Swale Way
- Neats Court Development
- Biomass Installation Rhode Court Barn, Selling
- Biomass Installation Countrystyle Recycling, Ridham Dock

These will be taken into consideration in the next Updating and Screening Assessment

4 Local / Regional Air Quality Strategy

Swale Borough Council does not have a Local Air Quality Strategy. The Air Quality Action Plan for the declared AQMAs includes borough-wide air quality measures in addition to specific AQMA measures.

Swale Borough Council were successful in obtaining a Defra grant fund to work on the Swale Borough Council Freight Management Plan. Swale Borough Council have submitted a bid in 2013 for funding for the Clean Bus Initiative.

Kent County Council have produced the Kent Environment Strategy[1]. This is a three year strategy produced in 2011 representing the major challenges and opportunities facing Kent over the next 10-20 years.

The following are elements of the strategy which have particular reference to air quality:

Under the Living Well theme:

EF 2 – Low carbon, resource efficient new developments

Ensure new development has easy access to local services, public transport and broadband wherever possible

Under the Climate Change theme:

CC5 – Reduce future carbon emissions

Pilot low carbon framework for Kent, smart working and transport modal shift and support of renewable energy

The implementation plan for the strategy is currently under review; however the following is the progress to January 2013 with regards to sustainable travel choices and smarter working.

Personalised Travel Plans

- Smart Card Ticketing – ENCTS contracts (back office and smartcard production/fulfilment) have been successfully retendered. A project officer is now in post to pursue the wider multi-operator ticket products and 'Kent card'.
- Community Rail Engagement Officer – now in post (as of April 2012) and planning and initiating projects with Kent schools and businesses.
- Workplace and Schools engagement work – KCC have negotiated an expanded remit for LSTF work taking into account the local economic benefits of HS1 and Community Rail in

[1] Growing the Garden of England: A strategy for environment and economy in Kent, July 2011

close proximity of stations. This will enable more detailed engagement work with local employers and schools/further/higher education establishments.

Electric / Ultra Low Carbon Vehicles

KCC are exploring potential partnerships with District and Borough Councils to develop a 'blueprint' skeletal public charging infrastructure in one or more Kent towns. This dialogue is ongoing and some funding has been allocated in 2012/13 and 2013/14 to help move this forward.

KCC Officers and Members trialed the use of a Peugeot Ion electric car during Nov/Dec 2012 with generally positive feedback.

KCC will also publish a statutory Quality Partnership Scheme, which will set minimum standards for buses operating along the A2 corridor. The scheme, which will be branded and marketed, aims to improve air quality and increase the use of public transport on the corridor. Additionally £2.5M Section 106 funding has been secured to improve public transport on the corridor. This will be used to deliver infrastructure improvements, bus priority and ITS technology in addition to a new bus rail interchange at West Malling station.

5 Planning Applications

Swale Borough Council are not aware of any other planning applications, other than those mentioned in the previous sections, which may impact upon air quality.

6 Air Quality Planning Policies

As reported previously, The Kent and Medway Air Quality Partnership have produced an Air Quality and Planning Guidance (July 2011). The document gives general advice to developers, consultants and local authorities regarding air quality issues with respect to development proposals in Kent.

In addition to this Swale Borough Council also uses the guidance in the National Planning Policy Framework. The aim of this document is to ensure that development is sustainable. The document states that the planning system should contribute and enhance the natural and local environment by preventing new and existing development from contributing to or being put at an unacceptable risk from, or being adversely affected by unacceptable levels of soil, air, water or noise pollution. It also states that planning decisions should take into account the presence of AQMAs, and that any new development is consistent with the air quality action plan.

In addition to these documents Swale Borough Council are producing Development Plan Documents as part of the Local Development Framework[2]. The Draft Core Strategy has been produced and was available for consultation in 2012. Once adopted, this will guide development up to 2031.

The following policies are relevant to air quality within the Borough:

Policy CP5 – Transport Infrastructure

- Locating new development in a way which minimises the need to travel, ensuring that it is well located in relation to public transport links and to promote its use through improved access to existing or new services.
- Working in partnership with Kent County Council, transport operators and other partners to establish a Quality Bus Partnership for Swale which will deliver improved bus stop infrastructure and expansion of the bus network.
- Working in partnership with Kent County Council, Network Rail and Network South East (or other rail franchise operators) and developers to maximise use of rail services for passenger and commercial traffic. Improvement of station forecourts and

[2] Swale Borough Council, Bearing Fruits, Draft Core Strategy, March 2012

bus interchange facilities especially at Sittingbourne as part of the wider town centre regeneration initiatives.

- At Sheerness improvements to accessibility and use of this branch line will be supported.
- Working in partnership with Kent County Council, developers and cycling groups to develop integrated walking and cycling routes to link existing and new communities with local services and facilities, public transport and the Green Grid network of recreation routes.
- Working with the Port of Sheerness and other bodies to facilitate greater use of waterways for commercial traffic where this would not have an unacceptable adverse environmental impact which could not be satisfactorily mitigated.

Policy DM15 – Managing Transport Demand and Impact

- Development proposals generating a significant amount of transport movements will be required to support their proposal with the preparation of a Transport Assessment (including a Travel Plan), which will be based on the Council's strategic modelling work.
- Proposals should integrate air quality management and environmental quality into the location and design of and access to development, and demonstrate that proposals do not worsen air quality to an unacceptable degree.

Policy DM20 – Pollution

All development proposals will minimise and mitigate pollution impacts. Development proposals will not be permitted that would, individually or cumulatively, give rise to pollution leading to a significantly adverse effect.

7 Local Transport Plans and Strategies

As reported in previous LAQM reports, Kent County Council adopted its 3rd Local Transport Plan, covering the period 2011 to 2016. The LTP objectives related to *A Safer and Healthier County* "*Prioritise spending to tackle Countywide problem sites including Air Quality Management Areas, crash cluster sites, and areas with high levels of health deprivation*". The report also states that "*KCC will continue to work with the districts to assist in the development of Air Quality Action Plans (AQAPs) and consider appropriate mitigation measures which will then be put forward for inclusion in the annual Integrated Transport Programme*".

The Kent County Transport Strategy "Growth without Gridlock"[3] was published in December 2010. The document provides strategies for the whole of Kent, but also some which are directly aimed at transport improvement in the Borough of Swale.

Kent County Council have proposed several improvements to the current bus network in order to improve connectivity and promote the use of public transport. The following improvements have been outlined:

- Improvements in bus interchange;
- Bus Rapid Transport (BRT);
- Inter-urban coach service – to give all towns direct access to public transport;
- Local Bus Services – these will operate into the local communities with links to the inter-urban system; and
- Improvement to the rural bus network through rural interchange system.

The Kent Integrated Transport Strategy for Growth outlines the following key issues for Swale Borough Council:

- Securing infrastructure to encourage development of the area for housing and employment,
- Delivering capacity improvements on the strategic road network, and
- Regeneration of Sittingbourne town centre.

[3] Growth without Gridlock, A Transport Delivery Plan for Kent, December 2010

Kent County Council have proposed major road infrastructure improvements including Sittingbourne Northern Relief Road and extension to the A2, A2/M2 Junction 5 capacity improvement, A249 Grovehurst Interchange and Rushenden Relief Road. Expansion of Kent Science Park with possible new link to the M2 (south) and A2 (north) is also proposed.

8 Climate Change Strategies

Climate Local Kent, the Low Carbon Framework for Kent was launched in 2012. The Kent Forum signed up to the commitment in September 2012 and partners take the commitment and targets through their internal processes where applicable. In addition to the Kent Forum, Swale Borough Council has developed a Swale adaptation of Climate Local and has been adopted by Swale Borough Council's Locality Board and Cabinet on the 5th December 2012.

The following are details of where Swale Borough Council are working towards energy efficiency improvements:

- Supporting and promoting insulation measures through the Cold Busters Scheme – January 2013 onwards
- Leading the Sustainable Sheppey project to support the local community make greener choices and identify renewable energy sources
- Providing 'Green Doctors' to provide energy advice to local residents
- Swale Borough Council are a partner within the Kent and Medway Green Deal Partnership

Kent County Council have produced the Kent Environment Strategy. This is a three year strategy produced in 2011 representing the major challenges and opportunities facing Kent over the next 10-20 years.

Many of the priorities are linked to climate change, these include:

Under the **Living Well** theme:
EF 1 – Energy and water efficient homes and public buildings
Maximising energy and water efficiency of existing buildings, retrofit homes for energy and water efficiency and ensuring new buildings are energy and water efficient
EF 2 – Low carbon, resource efficient new developments
Ensure new development is resource efficient and has access to local services and public transport
EF3 – Turn Kent's waste into new resources
Reduce waste going to landfill

Under the **Climate Change** theme
CC5 – Reduce future carbon emissions
Pilot low carbon framework for Kent, smart working and transport modal shift and support of renewable energy

CC6 – Manage the impacts of Climate Change

Actions plans for top risk priorities and integrate climate change into support services

CC7 – Green jobs and business in Kent

The implementation plan for the strategy is currently under review; however the following is an example of the progress to January 2013 with regards to climate change:

- Feasibility study completed June 2012 for oil to gas or biomass boilers covering 20 buildings (mainly schools).
- £370k of potential street lighting projects expected during 12/13 with a further £2.9m + schemes being discussed for implementation in the next 2 years.
- Projects are widespread across partner organisations – further information is contained within the District Briefings.
- Solar PV – three projects on KCC estate completed in 2012.
- Biomass boilers -Feasibility study completed June 2012, now progressing to a pilot to include approximately 7 buildings (schools and non-schools sites) – procurement route still being investigated.
- £240k of low energy lamp street lighting projects delivered during 12/13. A further £3m+ schemes being discussed for implementation in the next 2 years.
- A key feature of FM contract about to be tendered is to ensure efficient energy use in buildings. Where appropriate it is intended to build sustainability targets into the contract.
- A Kent wide renewable energy study was completed in April 2012. Recommendations from the study have been prioritised and a draft action plan prepared and consulted on in September 2012. Following on from consultation the action plan will be finalised by March 2012. The final plan will form the basis of a delivery strategy for renewable energy in Kent.
- Continued development of the Kent Wind Energy Network to create links between offshore wind developers and Kent companies to expand local supply chain. Now over 350 members. Two networking events held in 2012.

In addition to this Swale Borough Council are producing Development Plan Documents as part of the Local Development Framework. The Draft Core Strategy has been produced and was available for consultation in 2012.

The following policy is related to addressing Climate Change:

Policy DM1 – Sustainable Design and Construction

All new developments should maximise opportunities to reduce carbon emissions and adapt to climate change, examples include use of district heating, efficient use of water, building orientation and promotion of recycling.

9 Implementation of Action Plans

Swale Borough Council has drafted an Action Plan for the Newington AQMA which has been submitted to Defra for approval. Following comments from Defra an amended Action Plan is being produced. A Quantitative appraisal was undertaken in 2012 for the measures in the action plan. The measures modelled and the outcomes are listed below:

- Reducing HGV traffic by 20% on the A2 due to diversion at Key Street would result in an average decrease of 0.6mg/m^3 annual mean NO_2 concentration. The overall impact of this measure would be slight beneficial.
- Reducing HGV traffic by 40% on the A2 due to diversion at Key Street would result in an average decrease of 1.2mg/m^3 annual mean NO_2 concentration. The overall impact of this measure would be slight to moderate beneficial.
- Reducing traffic by 10% on the A2 due to a bypass would result in an average decrease of 0.9mg/m^3 annual mean NO_2 concentration. The overall impact of this measure would be slight beneficial.
- Reducing traffic by 20% on the A2 due to a bypass would result in an average decrease of 1.9mg/m^3 annual mean NO_2 concentration. The overall impact of this measure would be slight to moderate beneficial.
- Reducing traffic by 30% on the A2 due to a bypass would result in an average decrease of 2.9mg/m^3 annual mean NO_2 concentration. The overall impact of this measure would be moderate to substantial beneficial. This measure shows the largest beneficial impacts among the modelled scenarios.
- Removing the pedestrian crossing from congested part of the High Street near Playstool Road would result in an average decrease of 0.4mg/m^3 annual mean NO_2 concentration. The overall impact of this measure would be slight beneficial.

In addition the draft Ospringe Action Plan is also being amended to take account of the changes to legislation and comments by steering group members. A Further assessment was completed in 2012 for this AQMA. The recommendation was that actions targeting HGVs would help reduce the NO_2 concentrations to a level below the AQS objective level, as they are the main contributors in overall NOx/NO_2 levels.

The following pages contain the current Action Plans in progress by Swale Borough Council.

Newington Air Quality Action Plan

Monitoring

Action	Who is leading or could lead?	Progress	Comments re Advantages & Benefits/Versus Disadvantages	Suggested Timescales	Relative Cost £ low <£10K **££** medium £10K-50K **£££** high >£50K	Relative Environmental benefit ☺ low ☺☺ medium ☺☺☺ high
Temporary continuous Monitoring location in Post Office, High Street	SBC	In place 2010. There have been practical difficulties with the location for this during 2009 - 10	Provides the most accurate baseline information regarding pollutants from traffic, daily and hourly information. Annual costs in calibration and servicing. Limited life as owner only given temporary permission.	Ongoing 2010-11	£	☺ ☺ ☺
Data analysis from the existing and new NOx diffusion tube monitoring locations	SBC	Completed. New monitoring tubes installed in 2009. Results reported in Further Assessment 2010	New Information about level of pollutants on roads adjacent to the declared AQMA. Tube data not as accurate as continuous monitoring	Ongoing 2010-2011	£	☺ ☺
Siting a new permanent continuous monitoring location at Co-op High Street Newington	SBC	Quotes obtained for Monitoring Cabinet New location found permission granted	Dependant on successful funding application to Defra and staff for LSO duties and budgets for 2010-11 for running costs	Winter 2010-Spring 2011 providing funding is available	££	☺ ☺ ☺

Traffic Reduction

Action	Who is leading or could lead?	Progress	Comments re Advantages & Benefits/Versus Disadvantages	Suggested Timescales	Relative Cost £ low ££ medium £££ high	Relative Environmental benefit ☺ low ☺☺ medium ☺☺☺ high
Discussions with the Co-op re lorry deliveries and emissions and use of parking behind the store as well as community schemes and food miles	SBC	Informal discussions held with staff at the Co-op. Emails sent to head office and Transport Manager. Corporate support for siting outdoor monitoring station agreed in principle. Operations Manager invited to Steering Group	The Co-op is environmentally aware. They have a community grant scheme, offer locally sourced produce and food miles policies as well as offering a site for the Swale BC a permanent monitoring station. They have improved the parking and vehicle delivery system in response to the requests for mitigation.	Commenced 2009- 2010 and ongoing support	£	☺ ☺
Promotion of public transport alternatives with quality bus and train services at enhanced frequencies	SBC	A local bus company has been approached and they are considering improvements to the vehicle fleet. Local train operator has been contacted but insufficient officer time to pursue this option.	The Further Assessment report considers the contribution from buses is far less than cars and HGVs. Action here both in Newington and in adjacent areas can reduce numbers of people driving through Newington	Summer 2011	£	☺ ☺
Car hire /share schemes	SBC	Preliminary investigation of beacon authority examples	No time to pursue yet. Dependant on funding being nationally available	Summer 2011	£	☺ ☺

Action	Who is leading or could lead?	Progress	Comments re Advantages & Benefits/Versus Disadvantages	Suggested Timescales	Relative Cost £ low ££ medium £££ high	Relative Environmental benefit ☺ low ☺☺ medium ☺☺☺ high
Investigation of impact from additional traffic from any proposed planning applications re housing and industry	SBC	Comments fed into Local Development Framework documents and representations provided on applications for planning permission.	Government planning guidance provides stronger influence over developments affecting an AQMA. The Planning Department will continue to liaise with Environmental Health colleagues on applications for planning permission that may affect air quality in the AQMA	Winter 2010-Spring 2011	£	☺ ☺ ☺
Church Lane Residents Parking Survey	SBC				£	☺
Pay car park at Newington Station	Railways				£	☺

Traffic Management

Action	Who is leading or could lead?	Progress	Comments re Advantages & Benefits/Versus Disadvantages	Suggested Timescales	Relative Cost £ low ££ medium £££ high	Relative Environmental benefit ☺ low ☺☺medium ☺☺☺ high
Reclassification of A2 through Newington	KCC	This has been considered, but Medway Unitary Authority object to this	All funding for traffic schemes is awaiting prioritisation in line with the transport strategy	Not yet known	££	☺ ☺
Diversion of HGV traffic (time/weight or other restriction)	KCC	Considered and unlikely at present	Ditto		££	☺ ☺
Work with Satellite Navigation companies to amend appropriate (HGV) routes	KCC	In progress by KCC	The intention is to ensure the desirable route for through traffic is the M2, though this will not be used by local companies	2010-11	£	☺ ☺
Amended signage to direct traffic away from Newington	KCC	In progress by KCC	All funding for traffic schemes is awaiting prioritisation in line with the transport strategy		££	☺ ☺

Traffic Flow

Action	Who is leading or could lead?	Progress	Comments re Advantages & Benefits/Versus Disadvantages	Suggested Timescales	Relative Cost £ low ££ medium £££ high	Relative Environmental benefit ☺ low ☺☺medium ☺☺☺ high
Average speed cameras in village (replacing single fixed camera)	KCC and K & M Road Safety Partnership	Government has stated that they will not fund new fixed safety cameras. Kent has decided that no new cameras will be installed until a review of all sites has taken place and this is in progress.	Residents are concerned drivers slow up for the camera and speed up again once passed	Dependant on funding	££	☺
Redirection of traffic options • **Close Bull Lane to vehicles** • **Diversion of HGV traffic at Key Street**	KCC	Traffic counts have been undertaken in 2010 and were reported in the Further Assessment and Action Plan above.	Information to assess sources of pollutants and times of peak traffic NB the comment was made that this may impact on The Bull public house But redirection of traffic is dependant upon prioritisation criteria for funding from KCC	Dependant on funding	£££	☺ ☺
Low emission zones (LEZ)	SBC / KCC	Completed as far as possible. Principles of the LEZ scheme in London were investigated in 2009	The CCTV would need to be upgraded and there are currently no funds for this. Newington is essentially a through route not an area. LEZs work best in towns and cities.	Funding potential for LEZ to be investigated 2011-12	£££	☺ ☺ ☺

Local

Action	Who is leading or could lead?	Progress	Comments re Advantages & Benefits/Versus Disadvantages	Suggested Timescales	Relative Cost £ low ££ medium £££ high	Relative Environmental benefit ☺ low ☺☺ medium ☺☺☺ high
Ideas such as NOx absorbing paint, tarmac, roofing etc	SBC	Pilot projects in the UK reported results are successful thus far but NO_X paint is only temporary. Note: Canterbury CC applied for Defra grant for this in 2009 but were unsuccessful so will be reapplying in 2010. May not be available for conservation area buildings	May be useful if funding is available from Defra or HCA. Could be used to match fund community project fund application, the community would need to apply. Housing could be encouraged to include this in their policy for private housing grants and loans as a cross cutting environmental issue. Costs and potential short term benefits	2011	££	☺ ☺
Community trees and planting projects	Parish Council and some steering group members	Community led and funded jointly	Community Funding £600 agreed for the Parish Council and project started	Ongoing 2010 - 2012	£	☺
Co-op: Encourage improvements to car park, delivery off A2, etc	SBC/ Co-op	The co-op were approached and pledged support see 2a above		2009 -2011 ongoing	££	☺ ☺ ☺

Action	Who is leading or could lead?	Progress	Comments re Advantages & Benefits/Versus Disadvantages	Suggested Timescales	Relative Cost £ low ££ medium £££ high	Relative Environmental benefit ☺ low ☺☺ medium ☺☺☺ high
Industry: Encourage consideration of alternative routes/times for traffic	SBC	Letters were sent to invite industries to the public meeting before the AQMA was declared and contact with the businesses via the SBC newsletter	No staff time to develop this yet. It will be essential to address traffic issues	Summer 2011-2012 depending on staff time and resources	£	☺ ☺ ☺
School: Promote alternative routes for access and journeys. Work with school's School Travel Plan OPAL project-NO**x** monitoring involvement Stagger school times.	KCC / SBC	Contact made with the Head Master and Chair of School Governors (latter attends the AQMA Steering Group) and they have taken part in the OPAL project and KCC "change your world" campaigns during 2009-10. Working with Amicus for permanent solution to access through Vicarage Court site.	Parents did not want a walking bus when this was trialled before "*Walk on Wednesday Project* " Will need community development time. School involvement in AQMA project work links with education. Changing school times is unlikely to be easy, dependant on parental cooperation	2009-2012 ongoing	£	☺ ☺
Promotion of public transport e.g. Ride on the train, green taxis and bus schemes	SBC / SE rail	Discussions with South East Rail needed but due to High Speed rail link the trains will now only be stopping hourly. Railway Representative was invited to attend the steering group but has not done so yet	Only applicable to residents who are able to travel by train. Limited parking at the station and also any cars would need to travel through the AQMA to get to the station	2012-2013	£	☺ ☺

Action	Who is leading or could lead?	Progress	Comments re Advantages & Benefits/Versus Disadvantages	Suggested Timescales	Relative Cost £ low ££ medium £££ high	Relative Environmental benefit ☺ low ☺☺ medium ☺☺☺ high
Working through the planning process to require and encourage action to minimise impact of new developments affecting the High Street :	SBC	Comments fed into Local Development Framework documents and representations provided on applications for planning permission	Future development in the High Street could have an adverse effect on local air quality because of narrowing of road to form a street canyon, reported in Further Assessment 2010. The Planning Department will continue to liaise with Environmental Health colleagues on applications for planning permission that may affect air quality in the AQMA	Ongoing	£	☺ ☺
Reduction of Traffic	KCC	Road signage and classification being considered	Unlikely to be agreed as the route is part of the A2 Advantages are wider implications climate change as well as air quality however alternative routes may be much longer and so still impact on actual emissions to air although not in Newington	Ongoing by KCC	££	☺ ☺ ☺
Supporting reduction in traffic impact **Promotion of more efficient vehicles** (especially Council owned or supported bus services) **Tyre inflation and smart driving campaigns** **Plug in points for electric**	KCC	National and Local campaign involvement	National campaigns may provide funding opportunities for these in the future		££	☺ ☺ ☺

Action	Who is leading or could lead?	Progress	Comments re Advantages & Benefits/Versus Disadvantages	Suggested Timescales	Relative Cost £ low ££ medium £££ high	Relative Environmental benefit ☺ low ☺☺ medium ☺☺☺ high
cars and bikes in village car parks, local employers and at the station						
Bypass/Diversion	KCC	Funding priorities are elsewhere so this is unlikely to happen however not ruled out at this stage	Costs are likely to be prohibitive	Unlikely to be an option without government funding	£££	☺ ☺ ☺
Experiment with one way traffic in 30 mph zone and Church Lane Breech Lane, Lower Halstow	KCC		Feasibility study and modelling needed		£	☺
Average speed camera in 30 mph zone	KCC	Government has stated that they will not fund new fixed safety cameras. Kent has decided that no new cameras will be installed until a review of all sites has taken place and this is in progress.			££	☺

Ospringe Draft Action Plan

Option Proposal	Comments of steering group 2012	Further Action By	Relative cost	Realistic	Timescale
Diversion of HGV traffic to avoid Ospringe	KCC need to look at signage. The M2 is shorter route but it will depend on the time of day. Junction 5 can be congested. A Junction 5A proposal or the Southern Relief Road at Sittingbourne are not in the current LDF but likely to be in a future one. Junction 5A may be dependent on the expansion of the Kent Science Park.	Highways to follow up this suggestion re better signage for HGVs	LOW	MAYBE	2015
Work with Satellite Navigation companies to amend appropriate HGV routes. To ensure the desirable route for through traffic is the M2	There is a 'Lorry Officer' being employed at KCC who will need to work with the Satellite Navigation companies.	Highways to Liaise with KCC Officer who deals with this county wide	LOW	YES	0ngoing by KCC 2013-2015
Divert Western Link traffic more evenly east and west	KCC to look at signage with respect to encourage using the Western Link for West Faversham traffic	Highways to follow this up	LOW	YES	2013-2014
Bypass/Diversion	See comments above				
Reduce traffic at peak times initiatives by Highways and other agencies	Could consider a congestion charge, but would need an alternative route	None	MED	YES	2014-2016
Traffic count and	Compares with count and	Need to look at daily	LOW	YES	2014

Option Proposal	Comments of steering group 2012	Further Action By	Relative cost	Realistic	Timescale
modeling at junction with Water Lane, Ospringe Street and Ospringe Road	modeling published in Swale Borough Council's Detailed Assessment on air quality 2007. However we need to look at the daily levels at the same time.	trends – previous traffic counts were in 2008 -9. Cost of doing more being considered. AQ assessments submitted with planning applications for development proposals could inform			
20 mph speed limit through Ospringe Street to ease traffic flow	If people already do 30-35 mph motorists are unlikely to stick to 20. A lot of additional measures would be required such as humps etc, but the Highway Authority would not do that on the A2. Any speed limit needs to be self-enforcing.	Highways to follow this up	LOW	NO	Not applicable on the A2
	A roundabout by the Ship was suggested, as a new item to be investigated by KCC.	Highways to investigate	HIGH	MAYBE	2014
Promote Park and Stride Walk to school and Healthy Schools	This has been tried but there are safety issues. The School has concerns as there have been problems with lorries going to the pallet site.	Started in partnership with New KM schools education projects now called BUG and WOW schools in Swale participating	LOW	YES	2013 ongoing

Option Proposal	Comments of steering group 2012	Further Action By	Relative cost	Realistic	Timescale
Promote Swale in Bloom for Ospringe	Fine to promote	Officer at Swale contacted – could invite to steering group	LOW	YES	2013
Explore Abbey School bus scheme	They use the Freedom Pass which gives a big discount on fares (some £100 over a year) so could encourage wider use. Pointed out that bus times are not always helpful e.g. the bus through Oare is not until 9.20am and other rural routes may be similar.	Needs further investigation and discussions with bus companies	MEDIUM	YES	2014
Connect Western Link to Lower Road for use by local traffic	This would reduce A2 traffic however, it could upset local residents on that road. Perceived that it would help the A2 but could create a problem elsewhere. It could be used as a bus link and Highways will check with the local bus companies.	Highways to follow this up	HIGH	MAYBE	2014-2016
Roundabout at A251/A2 to reduce bottleneck there	There is some KCC funding to explore a traffic light system for this junction which would include The Mall.	Highways to follow this up	MEDIUM	YES	2014-2016
Traffic lights on Western Link / A2 roundabout	The idea to send traffic through Ospringe in batches to clear quicker	On hold			
Controlled Parking	The problem is residents parking.	highways to follow	LOW	YES	2014

Option Proposal	Comments of steering group 2012	Further Action By	Relative cost	Realistic	Timescale
Zone in Water Lane	CPZ's are best used for no-residents. The school tries to enforce parking by parents. It was agreed to look at putting parking restrictions closer to the junction where two cars cannot pass each other	this up			
Put a yellow box on the junction of Water Lane and Ospringe Street	To aid traffic flow when pedestrian lights at red. It was agreed to keep this in although there was doubt as to how well it will be used	On hold	LOW	NO	
Change the school hours	The School is looking into this for 2013/14 as the school is expanding. With the expansion, they will have to draw up a Travel Plan	Await action / information by school	LOW	YES	2014
Car sharing schemes	There are signs erected for the Kent Wide Scheme and it is thought that it is best to promote the scheme. It was felt that it could work for schools	Highways to follow this up	NIL	YES	2014
Community trees and planting projects	Groundwork have a target to plant a batch of trees in the area. There is one Green wall at the flats. All the buildings in the AQMA are privately owned.	Contact Groundwork	LOW	YES	2014

10 Conclusions and Proposed Actions

10.1 Conclusions from New Monitoring Data

The continuous monitoring locations in the borough all recorded levels below the AQS objectives in 2012.

The diffusion tube network identified sixteen sites within the borough where the annual mean NO_2 objective was exceeded, thirteen of these locations were within existing AQMAs.

The annual mean objective was exceeded at the SW80, Michaels Hairdressers in Teyham. It is recommended that a Detailed Assessment is undertaken for this area.

Exceedence of the annual mean objective was recorded at sites SW82, with an annual mean concentration of 62.3 µg/m^3. At this location there is no relevant exposure with regards to the annual mean objective. An annual mean of greater than 60 µg/m^3 indicates the potential for exceedences of the short term objective. Swale Borough Council have installed a continuous monitor on St Paul's Street in 2013. It is recommended the results from this monitoring location are investigated in terms of the short term objective in the next progress report. Swale Borough Council should also look to install additional diffusion tubes along St Paul's Street, particularly in locations where there are receptors for the annual mean objective

10.2 Conclusions relating to New Local Developments

Swale Borough Council has identified the following local developments which have not been previously assessed.

The following have the potential to impact upon traffic flows in the area of the development:

- Nicholls Development, Swale Way – relocation of a transport depot with increased capacity
- Neats Court Development, Isle of Sheppey – mixed use development, with phase one works currently underway

These will be assessed further in the next Updating and Screening Assessment.

Swale Borough council have also received an application for a residential development in Ospringe. The air quality assessment completed for the application states that the pollutant

concentrations for NO_2 are below the objective levels at all but one of the receptor locations. The receptor is one of the new residential units. Mitigation measures were identified in the assessment.

Where Swale Borough Council believes a new development will impact upon local air quality they ask developers for an air quality assessment.

Two new biomass installations have also been identified:

- SW/13/0814 Rhode Court Barn, Selling ME13 9PS – installation of a domestic biomass boiler 130kW
- SW/10/1146 Countrystyle Recycling, Ridham Dock ME9 8SR – installation of a biomass power plant for the generation of renewable energy from low grade waste wood.

Further information on the emissions form these sources is not available, as such they will be assessed in the next Updating and Screening Assessment.

10.3 Proposed Actions

Proposed actions arising from the 2013 Annual Progress Report are as follows:

- Continue NO_2 diffusion tube and continous monitoring in the district to identify future changes in pollutant concentrations;
- Consider installating additional diffusion tube monitoring locations along St Paul's Street, particualry where there are relevant receptors to the annual mean objective;
- Proceed to a Detailed Assessment for the Teyham area; and
- Proceed to a Progress Report in 2014.

11 References

- 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
- Swale Borough Council 2012 Updating and Screening Assessment
- Swale Borough Council 2011 Annual Progress Report
- Growing the Garden of England: A strategy for environment and economy in Kent, July 2011
- Kent Environmental Strategy Implementation Plan, Monitoring Progress January 2013
- Swale Borough Council, Bearing Fruits, Draft Core Strategy, March 2012
- Local Transport Plan for Kent 2011-2016
- Growth without Gridlock, A Transport Delivery Plan for Kent, December 2010
- National Planning Policy Framework, Communities and Local Government, March 2012
- Air Quality Assessment Proposed Residential Development, Barkaways, Ospringe, Agrihyde, March 2013
- Jonathan Gale Architects Ltd, The Cold Store, Selling – Application Letter and Plans
- Land at Western Link, Faversham – Air Quality Assessment, Entran March 2012
- Prime Building Consultants Ltd, Residential Development at Vicarage Court, Newington – Air Quality Assessment, April 2011

12 Appendices

Appendix A: Quality Assurance / Quality Control (QA/QC) Data

Appendix A: QA:QC Data

Diffusion Tube Bias Adjustment Factors

Factor from Local Co-location Studies

There are three co-location studies in Swale Borough Council. The local bias correction factor is presented below.

Location	Diffusion Tube Data capture	Continuous Monitor Data Capture	Diffusion Tube Annual Mean ($\mu g/m^3$)	Continuous Monitor Annual Mean ($\mu g/m^3$)	Ratio
Canterbury Road	92%	92%	44	35	0.80

Location	Diffusion Tube Data capture	Continuous Monitor Data Capture	Diffusion Tube Annual Mean ($\mu g/m^3$)	Continuous Monitor Annual Mean ($\mu g/m^3$)	Ratio
Newington	75%	99%	43	30	0.68

Location	Diffusion Tube Data capture	Continuous Monitor Data Capture	Diffusion Tube Annual Mean ($\mu g/m^3$)	Continuous Monitor Annual Mean ($\mu g/m^3$)	Ratio
Ospringe	92%	97%	46	37	0.81

Diffusion Tube Bias Adjustment Factors

The diffusion tubes are supplied and analysed by Environmental Scientifics Group utilising the 50% Triethanolamine (TEA) in acetone preparation method. The bias adjustment factor for 2012 is 0.79 (based on 26 studies, version 03_13) as derived from the national bias adjustment calculator.

Discussion of Choice of Factor to Use

With regard to the application of a bias adjustment factor for the diffusion tubes, the technical guidance LAQM.TG (09) and LAQM Helpdesk[4] recommends use of a local bias adjustment factor where available and relevant to diffusion tube sites. The overall local bias factor of 0.80 has been calculated from the orthogonal regression of the two bias factors from Canterbury and Ospringe monitoring locations. It has been decided not to use the data from the Newington study as it is believed that the diffusion tubes are some distance from the inlet, therefore the results may not be representative.

[4] laqm.defra.gocv.uk

PM Monitoring Adjustment

The PM_{10} results have been gravimetrically corrected by Ricardo-AEA who undertake the data management of the continuous monitoring location.

Short to Long Term Adjustment

Data capture was good for all the continuous monitoring locations and no annualisation was required.

There were however a number of diffusion tube monitoring sites where annualisation was required, this is detailed in the below table.

Diffusion Tube Site	Canterbury Annualisation Factor	Chatham Luton Annualisation Factor	Thurrock Annualisation Factor	London Bexley Annualisation Factor	Average Annualisation Factor
SW06	0.692	0.752	0.714	0.744	0.725
SW85	0.875	0.876	0.886	0.909	0.887
SW86	0.868	0.856	0.880	0.919	0.881
SW12	0.692	0.752	0.714	0.744	0.725
SW42	0.932	0.923	0.937	0.955	0.937
SW42	0.978	0.950	0.970	1.001	0.975
SW42	0.932	0.923	0.937	0.995	0.937
SW19	0.928	0.864	0.874	0.941	0.901
SW20	0.991	0.969	0.945	0.963	0.967
SW20	0.967	0.940	0.920	0.950	0.944
SW63	0.692	0.752	0.714	0.744	0.725
SW64	0.692	0.752	0.714	0.744	0.725
SW78	0.983	1.002	0.990	0.965	0.985
SW21	0.692	0.752	0.714	0.744	0.725

QA/QC of Automatic Monitoring

Swale Borough Council calibrates the monitoring sites every two weeks and ETi services the stations twice per year.

Further QA/QC AQMS Network Manager

Ricardo-AEA have proven systems of Quality Assurance and Quality Control (QA/QC) for ambient air quality measurements. Ricardo-AEA designed and evolved many of the QA/QC procedures adopted within UK monitoring networks and currently carry out all QA/QC functions for the UK AURN monitoring network.

Ricardo-AEA undertake Initial screening of data this allows rapid fault identification and resolution is a key aspect of ensuring high data capture and quality levels.

Quality Assurance Measures

QA relates to the process of monitoring, whilst QC is primarily concerned with the checking of outputs and is the control of operational factors affecting data quality. In the context of the KMAQMN, these include:

- Provide a clear LSO manual
- Ensuring LSOs are suitably trained
- Undertake accredited audit procedures and calibration gas standards

Quality Control Measures

QA stage – this is quality control. Within the context of the KMAQMN, QC includes:

- Data ratification and review by more senior ratifiers
- Information management

Ricardo-AEA's data ratification approach follows practices used in the AURN, this approach assumes all data are correct unless there is good evidence to suggest otherwise, preventing erroneously removing any important air pollution episode data.

QC Audits

Ricardo-AEA is accredited to ISO17025 for the field calibration of ambient air quality analysers. The Ricardo-AEA auditors carry out the annual audits to rigorously evaluate analysers to obtain an assessment of performance level. This information, in conjunction with the full analyser data set and calibration and service records, help ensure data quality specifications have been met during the preceding period. Additionally an assessment of the station calibration cylinder concentrations provide an indication that the cylinder concentrations remain stable and therefore suitable for data scaling purposes.

Annual audits provide essential input to the data management process, ensuring data from the network are harmonised, consistent in quality and traceable to a recognised gas calibration standard.

QA/QC of Diffusion Tube Monitoring

Environmental Scientifics Group (ESG) is a UKAS accredited laboratory and participates in the Workplace Analysis Scheme for Proficiency (WASP) for NO_2 diffusion tube analysis and the Annual Field Inter-Comparison Exercise. These provide strict performance criteria for participating laboratories to meet, thereby ensuring NO_2 concentrations reported are of a high calibre. The lab follows the procedures set out in the Harmonisation Practical Guidance. In the latest available WASP results, rounds 116 through to 119 (January to

December 2012) ESG have scored 100%. The percentage score reflects the results deemed to be satisfactory based upon the z-score of < ± 2. The tube precision for the NO_2 Annual Field Inter-comparison at Marylebone Road was rated as 'Good'.

Results of Distance Correction of Diffusion Tubes Showing an Exceedence outside of Existing AQMAs

Site ID	Distance to Kerb from Monitoring Location	Distance from Kerb to Receptor	Annual Mean Background	Measured Annual Mean Concentration	Predicted Annual Mean at Receptor
SW62	1.9	16.9	21.77	42.2	31.9
SW80	1.5	2.1	14.21	45.2	42.9
SW76	1.7	5.2	19.29	40.7	35.3
SW53	5.1	5.1	23.12	41.0	41.0

Monthly Diffusion Tube Results

Site Ref	NO_2 Concentrations µg/m^3											
	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
SW06	38.6	34.0	42.4									
SW07	22.8	20.8	22.6	13.4	10.5		12.3	11.2	12.2	16.3	17.9	22.5
SW84	46.2	49.1	46.9	37.7	29.5		22.7	26.5	32.4	32.5	42.6	46.1
SW85	46.6	41.3	45.4	35.8			33.8			44.6	38.2	46.7
SW86	56.8	29.1	60.5					27.4	33.6	34.1		46.0
SW11	38.6	38.5	38.5	22.7	22.9		24.8	19.7	28.1	29.7	32.0	38.4
SW14	42.0	37.5	40.4	20.8	26.7		21.5	19.5	26.3	31.1	31.2	38.0
SW13	39.5	39.5	39.2	28.3	23.9		19.5	19.5	23.9	27.0	32.1	41.0
SW12	38.0	35.9	43.7									
SW66	20.8	59.1	61.0	41.6	39.3		46.6		50.4	50.8	59.4	61.6
SW45	63.6	61.9		60.7	46.1		38.2		51.1	49.0	49.6	52.1
SW35	67.0		68.1	42.2	48.7		52.3		62.9	56.7	58.3	62.9
SW42	70.1		76.9	50.8			60.1		62.3	63.9	62.7	60.6
SW42	78.6			49.6			54.7		61.7	57.3	65.1	63.0
SW42	66.9		82.3	45.5			53.4		64.8	66.8	64.4	71.6
SW19	48.8			30.6					33.5		37.3	49.5
SW37	58.7	58.5	64.4	39.5	41.2			37.6		50.2	54.5	62.4
SW38	58.1	52.9	58.5	34.0	32.4		29.1	29.4	38.3	44.4	38.2	61.7
SW20	54.8	51.2	61.1	41.6	41.0		29.3	31.4				53.3
SW20	55.8	47.4	51.3	33.7			26.8	31.9	36.3			56.4
SW20	57.8	51.1	57.2	35.6	32.5		30.4	32.5	39.5	42.2	48.9	59.9
SW36	39.2	54.1	55.7	36.4	38.1		30.4	27.5	39.3	42.4	45.4	51.1
SW63	37.6	33.9	36.7									
SW64	36.8	30.2	30.5									
SW78		58.4	55.9	46.2			37.9	35.7	44.0		52.5	
SW21	40.9	44.9	45.8									
SW28	50.2	81.5	76.2	62.8	67.9		57.3	63.4	71.1	61.9	65.6	82.9
SW27	36.1	41.5	34.5	27.2	26.4		20.6	24.4	29.2	28.2	34.1	44.9
SW30	49.3	54.1	56.9	38.9	42.2		32.4	45.1	47.5	42.1	47.5	53.9
SW30	52.5	57.5	58.6	38.6	41.4		35.6	34.9	45.5	42.1	47.9	49.4
SW30	49.6	45.4	57.5	40.2	42.0		34.7	38.9	45.3	42.2	50.2	43.0
SW31	66.9	73.7	71.0	61.5	62.4		42.2	45.2	60.7	59.5	63.7	46.5
SW32	60.7	66.2	62.8	42.9	51.0		51.7	58.4	56.8	55.5		63.3

SW22	69.3	80.2	65.9	63.6	63.9		65.0	67.8	73.3	62.2	21.0	78.2
SW29	69.1	79.0	70.5	57.0	59.5		52.9	66.5	74.0	63.8	67.0	66.7
SW34	21.2	23.8	21.2	11.8	11.6		8.4	10.0	19.1	13.9	17.1	21.5
SW79	31.0	31.9		21.2	21.2		15.3	20.8	21.2	18.3	20.1	51.1
SW80	65.1	73.9	78.2	47.7	52.3		40.4	37.6	52.4	53.2	62.0	58.7
SW62	76.1	60.6	56.6	42.7	37.1		38.1	36.5	56.5	45.4	59.9	70.1
SW17	43.7	39.2	40.8									
SW58	50.7	49.1	54.2	39.9	38.1		32.7	34.7	35.8	18.9	10.0	64.2
SW53	48.4	47.8	53.2	46.2	40.3		47.5	52.0	54.7	54.1	59.8	59.9
SW56	60.6	57.9	52.3	53.0	41.7		38.0	44.9	42.9	45.3	46.6	64.5
SW57	50.5	51.7	55.8	44.2	41.8		29.7	26.7	35.6	39.9	39.8	48.7
SW87	48.9	49.7	57.4	47.4	41.0		34.1	28.4	36.3	44.3	48.1	53.6
SW87	58.4	56.2	58.1	45.4	41.1		28.2	28.6	38.5	42	40	46.6
SW87	55.5	57.1	59.9	47.9	42		33.1	31.2	43	42.9	47.2	54.7
SW60	34.8	30.3	31.7									
SW61	28.9	32.1	26.7									
SW18	22.9	27	27	15.3	13.2		10.8					
SW74	53.2	43.6	42.3	32.7	29.1		29		29.1	25.3	42.3	38.4
SW75	42.3	41.9	39.1	27.6	22.5		18.6			30	39.4	41.4
SW76	64.4	61.9	56.2	44.3	34.5		53.9	39.8	44.1	45.2	48.8	66.8
SW77	55.3	41.5	52.2	40.6	35.3		27.4	21.2	33.1	35.5	39.4	49.1
SW81	32.4	42	38.4									
SW83	49.1		50.7	42.2	36.2		32	36.1	38.4	38.6	45.3	51.6
SW88	49.8	36.6	36.4	59.1	18.8		17.4	30.8	25.4	26.7	31.1	41.6
SW50	40	39.9	38.3	27.4	23.4		17.3	21.7	30.1	26	31.8	45.3
SW52	66.4	67.9	67.2	49.8	46		39.1	38	40.8	47.2	49.9	61.6
SW51	53.9	56.7	62	56.6	58.2		42.2	35.2	48		60.4	54.7
SW39	53.2	52.6		40.6	32.6		29.6	27.9	33.9	37.5	37.2	50.5
SW39	58	46.2	46.1	40.1	34.2		29.8	30.4	35.2	38.2	45.8	
SW39	44	43.5		51.1	36.9		33.6	28.8	34.4	39.7	44.5	
SW65	51.3	48.6	45.6	36.6	27.6		21.8	18.4	38.9	35	45.5	56.2
SW70	48.5	41.7	46	36.7	29.8			23.7	31.7	38.4		50.2
SW71	55.8	52.6	55.1	41.6	37.5		30.6	36.2	42		56.4	54.5
SW72	46.4	48.8	49.1	40.8	33.1		29.3	26.1	31.6	37.2	54.1	53.2
SW73	56.9	44.5	53.9	41	36.4			30.3	38.6	43.2	48.3	71.6
SW82	88.6	84.9	86.9	81	78.4		67.7	75.6	74	76.5	75.2	67.9
SW82	85.1	80.2	85	84.2	68.1		65.2	79.2	72.3	66.9	87.6	70.6

SW82	75	82	86.4	76	70		65.8	68.9	70.1	71	88.7	79.5

Monitoring sites shaded in green are those sites which were discontinued in April 2012.

Contacting Swale Borough Council

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