



2014 Air Quality Progress Report for Sevenoaks District Council

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

2014

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Report Reference number	SDC/PR/2014
Date	23 rd September 2014

Executive Summary

This Air Quality Progress Report has been prepared as part of the Local Air Quality Management (LAQM) system introduced in Part IV of the Environment Act 1995.

The Local Air Quality Management Technical Guidance LAQM.TG (09) has been closely followed in the preparation of this report.

Sevenoaks District Council hereafter referred to as the District Council has used monitoring information to assess and predict future air quality against the objectives prescribed by the Air Quality Regulations 2000 (as amended).

There are no new local developments of sources which are considered to have had a significant effect on the air quality of the district.

New AQMAs have been declared at the Birchwood Road Junction in Swanley (14) and AQMAs 5, 9, 11, and 12 have been combined to form a continuous AQMA (13)

A new monitoring station is in the process of being set up for use at the Sevenoaks Quarry site which will be used to provide information for a Detailed Assessment into possible fugitive particulate emissions from the quarry. The Council has encountered difficulties in arranging the services to this unit resulting in delay.

No significant improvement or deterioration in air quality has been observed. Most sites identified in 2012 as exceeding Nitrogen dioxide objectives continue to do so.

There diffusion tube data continues to suggest the likely exceedance of the 1-hour NO₂ objective at Sevenoaks High Street identified in the 2012 Progress Report. The Council now intends to undertake a detailed assessment with a view to declaring an additional AQMA for this likely exceedance.

Diffusion Tube data from the Bat and Ball, and Birchwood Road Junctions no longer indicate a likely exceedance of the 1-hour NO₂ objective.

The Council has now launched the Air Alert service to inform susceptible individuals and medical professionals of predicted episodes of poor air quality. Currently 107 individuals have subscribed to this service.

The District Council has made progress with undertaking an extensive variety of measures contained within the 2009 Air Quality Action Plan, with several assisted by Section 106 funding from planning developments and Defra air quality grants.

Future work is likely to be tempered though by the reductions in local authority funding arising from the national economic situation

Sevenoaks District Council

Under the Local Air Quality Management process, we will continue to monitor, review and assess air quality and undertake where possible appropriate action to ensure that the Air Quality Action Plan 2009 is delivered.

Table of Contents

1	Introduction	5
1.1	Description of Local Authority Area	5
1.2	Purpose of Progress Report	6
1.3	Air Quality Objectives	7
1.4	Summary of Previous Review and Assessments	9
	Monitoring Data	11
1.5	Summary of Monitoring Undertaken	11
1.6	Comparison of Monitoring Results with Air Quality Objectives	22
2	New Local Developments	61
3	Local / Regional Air Quality Strategy	62
4	Planning Applications	63
5	Air Quality Planning Policies	65
6	Local Transport Plans and Strategies	67
7	Climate Change Strategies	68
8	Implementation of Action Plans	69
8.1	Introduction	69
9	Conclusions and Proposed Actions	87
9.1	Conclusions from New Monitoring Data	87
9.2	Conclusions relating to New Local Developments	88
9.3	Other Conclusions	88
9.4	Proposed Actions	88
10	References	90

Appendices

Appendix A AQMA Maps

Appendix B QA/QC Data

1 Introduction

1.1 Description of Local Authority Area



Sevenoaks District is in West Kent, bordering Greater London, Surrey and East Sussex and covers an area of 142 square miles.

The main towns are Edenbridge, Sevenoaks and Swanley and there are many other small villages and settlements, of which the largest are Hartley, Hextable, New Ash Green, Westerham and West Kingsdown.

The primary source of air pollution is from traffic. The district is traversed by three major motorways and these have a considerable flow of continental HGVs using the port at Dover and the Channel Tunnel. Local journeys, school runs, commuting to London or connection with London contribute significantly to a number of hot spots in Sevenoaks, Swanley and Westerham.

Main communications and transport links

The M25, M20 and M26 motorways are easily accessible as they cross the District. Gatwick and Heathrow airports and the Channel Ports and Channel Tunnel Rail Link are all within easy reach.

The railway service to London is very good. The average journey time is 35 minutes.

A description of Sevenoaks District

All of Sevenoaks District is within the Green Belt. Much of the area is rural in character and it includes many picturesque villages and hamlets and large areas of beautiful countryside. The area is rich in historical sites including Penshurst Place, Hever Castle, Winston Churchill's former home at Chartwell, Lullingstone Castle and Roman Villa, and Knole Park.

Each of the major towns has its own character. Edenbridge is a popular point of call for visitors to the area, while Sevenoaks offers a range of small to medium sized shops in a traditional high street setting. Swanley's market attracts shoppers from a wide area.

Sevenoaks District is a popular place to live. Because of the close proximity to London, there is considerable pressure for development and local planning policies attempt to achieve a balance between legitimate development needs and conserving the District's environment.

There are a wide range of leisure facilities, including community sports and leisure centres at Edenbridge, Sevenoaks, Wilderness and Swanley. There are also sports grounds, recreation areas and scenic country walks.

There are no major industrial sources within the district or close to its boundary. There is one large sand quarry co-located with a landfill site. There are 32 authorised processes, mainly petrol stations and dry cleaners.

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 Air Quality Strategy for England, Scotland, Wales and Northern Ireland 2007 and the relevant Policy and Technical Guidance documents. The LAQM process places an obligation on all local authorities to regularly review and assess air quality in their areas, and to determine whether or not the air quality objectives are likely to be achieved. Where exceedences are considered likely,

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

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

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

1.3 Air Quality Objectives

The air quality objectives applicable to LAQM in **England** are set out in the Air Quality (England) Regulations 2000 (SI 928), The Air Quality (England) (Amendment) Regulations 2002 (SI 3043), and are shown in Table 1.1.

This table shows the objectives in units of microgrammes per cubic metre $\mu\text{g}/\text{m}^3$ (milligrammes per cubic metre, mg/m^3 for carbon monoxide) with the number of exceedances in each year that are permitted (where applicable).

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

Pollutant	Air Quality Objective		Date to be achieved by
	Concentration	Measured as	
Benzene	16.25 µg/m 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	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
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

Round 1

The first round of Air Quality Review and Assessment led to the designation of six AQMA.

AQMA 1	M20	Junction 3 of the M25 to the district boundary with Tonbridge and Malling Borough Council (6.9 miles).	For NO ₂
AQMA 2	M25	County border with Surrey to district border with Dartford, including Junctions 3, 4 and 5 and the extension of Junction 5 to connect with the A25 at Bessel's Green (13.5 miles).	For NO ₂
AQMA 3	M26	M26 - from junction 5 of the M25 to the district boundary with Tonbridge and Malling Borough Council (5.6 miles).	For NO ₂
AQMA 4	A20	(T) Swanley Bypass - from junction 3 of the M25 to the district boundary with the London Borough of Bromley (2.7 miles).	For NO ₂
AQMA 5	A25	Riverhead - between its northern and southern junctions with the A224 (155m).	For NO ₂
AQMA 6	M25	Junction 5 to Kent / Surrey border	For PM ₁₀

Round 2

In September 2006, following the second round of reviews, 5 further areas were designated for traffic-related exceedance of NO₂.

AQMAs 8 – 12

AQMA 8	B2173	Swanley – London Road (East); High Street; Bartholomew Way and parts of Central town area	For NO ₂
AQMA 9	A25	Seal – High Street	For NO ₂
AQMA 10	A225	Sevenoaks – High Street	For NO ₂
AQMA 11	A25	Westerham – High Street; Market Square; Vicarage Hill; London Road (A233)	For NO ₂
AQMA 12	A25	Sevenoaks – Bat & Ball junction with A225	For NO ₂

Please note: There is no AQMA 7

Round 3

Sevenoaks District Council

Detailed Assessment and Further Assessment concluded that the boundaries of existing AQMA's 1, 5 and 10 should be extended because of traffic related exceedance of NO₂.

AQMA 1	M20	Extended to include part of the A20 at Farningham.	NO ₂
AQMA 5A	A25	Extended AQMA 5 to include London Road from Riverhead to Dunton Green (to Join AQMA 3). Also extended to cover the properties where exceedances were predicted to the west of the London Road and Maidstone Road (Bradbourne Vale) roundabout (London Road, Riverhead).	NO ₂
AQMA 10A	A225	Extended AQMA 10 to include part of London Road, Sevenoaks and to include the properties surrounding the London Road and Pembroke Road junction.	NO ₂

Round 4

The 2009 USA identified a road junction in Swanley (Birchwood Rd / London Rd) as an area of potential NO₂ (annual) exceedance and also an area adjacent to a large quarry/landfill in Sevenoaks for potential fugitive PM₁₀ exceedance.

In December 2011, a Detailed Assessment confirmed the likely exceedance of NO₂ in Swanley (Birchwood Rd/London Rd) and the need to declare an AQMA.

Round 5

The 2012 Updating and Screening Assessment confirmed continuing exceedances outside of the current AQMAs along the A25. The Council therefore extended and joined up the existing four AQMAs along this road to form one AQMA corridor.

The AQMA for Birchwood Road junction, Swanley was also designated.

AQMA 13	A25	Replaces AQMA 5, 9, 11 and 12	For NO ₂
AQMA 14	B2173	Birchwood Road junction, Swanley	For NO ₂

PM₁₀ monitoring was required to be undertaken by the Sevenoaks quarry to inform the Detailed Assessment. Unfortunately there have been significant delays in obtaining permission from Kent County Council to install monitoring equipment on their land.

A new monitoring station has been installed however the unit is still not fully operational owing to power supply difficulties.

See Appendix B: Maps of current AQMA's

Monitoring Data

1.5 Summary of Monitoring Undertaken

1.5.1 Automatic Monitoring Sites

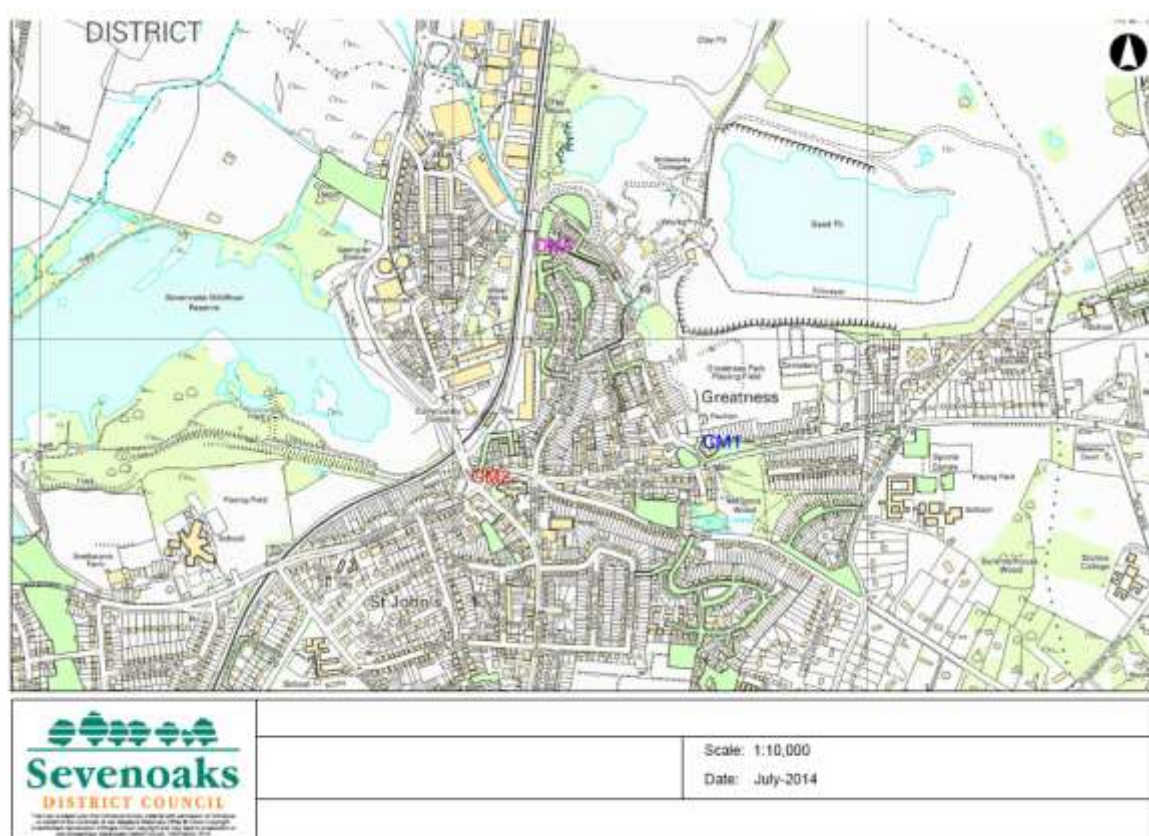
The District Council currently has two operating continuous automatic monitoring sites (CMS) both in the Sevenoaks town urban area.

The Greatness background site has monitored 3 pollutants (NO_x, PM₁₀ & O₃) since 1997. The Bat & Ball roadside site has monitored NO_x and PM₁₀ since 2006.

The District Council is currently in the process of commissioning a third continuous automatic monitoring site (CM 3) at Greatness Quarry to monitor PM₁₀. It is intended that information from this site will be used by the council to perform a detailed assessment of particulate in this area. Unfortunately the District Council continues to encounter difficulties in setting up CM3 and is currently in negotiations with UK Power Networks to get this unit connected to an electricity supply.

Table 2.1 shows details of the three sites.

Figure 2.1 Map(s) of Automatic Monitoring Sites



Local site operations and routine calibration/maintenance are carried out under contract by ERG Kings College London with service contract work by Supporting U. The sites are audited twice a year by NPL and the data collected, validated and ratified by ERG.

Annual reports are published and all data including current concentrations are available via the London Air Quality Network web site. The site is operated to the same standards as the rest of the London Air Quality Network.

2008 and earlier PM₁₀ Data measured by TEOM has been corrected by applying a 1.3 factor.

From 2009 data has been corrected by ERG using their volatile correction model.

Table 2.1 Details of Automatic Monitoring Sites

Site ID	Site Name	Site Type	X OS Grid Reference	Y OS Grid Reference	Inlet Height (m)	Pollutants Monitored	In AQMA?	Monitoring Technique	Relevant Exposure? (Y/N with distance (m) from monitoring site to relevant exposure)	Distance to Kerb of Nearest Road (m) (N/A if not applicable)	Does this Location Represent Worst-Case Exposure?
CM1	Greatness	Urban background	553603	156774	3.0	NO _x , NO, NO ₂ , PM ₁₀ , O ₃	N	TEOM	Y	46m	N
CM2	Bat & Ball	Roadside	553044	156690	2.0	NO _x , NO, NO ₂ , PM ₁₀	Y	TEOM	N (30m)	8m	N
CM3	Sevenoaks Quarry	Roadside	553195	157248	2.0	PM ₁₀	N	FDMS	N (6m)	1m	Y

1.5.2 Non-Automatic Monitoring Sites

There are currently 55 diffusion tube sites.

Table 2.2 gives details of these sites

NO₂ diffusion tubes are supplied and analysed by ESG Scientifics (formerly Harwell Scientifics at Didcot). This laboratory is UKAS accredited.

The tubes were prepared by spiking acetone: triethanolamine (50:50) on to grids prior to the tubes being assembled.

The laboratory confirms it follows the procedures set out in the Harmonisation Practical Guidance and that it is ranked 'Good' in the WASP inter-comparison scheme.

The tubes have been compared with the reference method by a triplicate co-location study with the chemiluminescent NO_x analysers at Greatness Park, Sevenoaks.

The nationally derived Bias Factor for 2013 was 0.81

The locally derived Bias Factor from the above co-location study for 2013 was 0.86

The National Bias Factor for 2012 was 0.79

The Local Bias factor has been used.

Please refer to Appendix 2 for details of data used to calculate bias

Table 2.2 Details of Non- Automatic Monitoring Sites

Site ID	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? (Y/N with distance (m) from monitoring site to relevant exposure)	Distance to Kerb of Nearest Road (m) (N/A if not applicable)	Does this Location Represent Worst-Case Exposure?
DT2	High Street South 1 (Guitar) Sevenoaks	Roadside	553141	154263	2m	NO2	Y	N	Y	1m	Y
DT3	Garvock Drive Sevenoaks	Urban Background	552467	154167	2m	NO2	N	N	Y	0m	N
DT27	High Street South 2 (Sev School) Sevenoaks	Roadside	553139	154259	2.5m	NO2	Y	N	Y	3m	Y
DT28	High Street North 2 (Sev Sennockian) Sevenoaks	Kerbside	552045	154883	2.5m	NO2	Y	N	N (2m)	0.5m	Y
DT29	High Street North 3 (Water Trough) Sevenoaks	Roadside	553073	155026	2.5m	NO2	Y	N	N (3m)	2m	N
DT48	73 London Road (Brunch) Sevenoaks	Roadside	552867	154863	2m	NO2	Y	N	Y	1.5m	Y
DT49	20 London Road (Butchers) Sevenoaks	Roadside	553018	154654	2m	NO2	Y	N	Y	2m	Y

Sevenoaks District Council

Site ID	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? (Y/N with distance (m) from monitoring site to relevant exposure)	Distance to Kerb of Nearest Road (m) (N/A if not applicable)	Does this Location Represent Worst-Case Exposure?
DT51	130 London Road (Opp Car Sales) Sevenoaks	Kerbside	552662	155153	2.5m	NO2	Y	N	N (3m)	0.5m	Y
DT52	142 London Road (Lulworth) Sevenoaks	Roadside	552506	155272	2.5m	NO2	Y	N	N (6m)	2m	Y
DT77	Montreal Road/ Amherst Hill Sevenoaks	Roadside	551529	155967	2.5m	NO2	N	N	N (4m)	2m	Y
DT87	Bradbourne Vale Road South	Roadside	551640	156335	2.5m	NO2	Y	N	N (10m)	2.5m	Y
DT88	Bradbourne Vale Road North	Roadside	552963	156583	2.5m	NO2	Y	N	N (20m)	1.5m	Y
DT89	133 London Road (Showroom) Sevenoaks	Kerbside	552677	155117	2.5m	NO2	Y	N	N (3m)	0.5m	N
DT90	4a St Johns Hill Sevenoaks	Roadside	553140	155898	2.5m	NO2	N	N	N (4m)	1.5m	Y
DT91	Egden Walk St Johns Sevenoaks	Roadside	553123	155709	2.5m	NO2	N	N	N (5m)	1.5m	N
DT23	Bat & Ball 1 Sevenoaks (Ferrari)	Roadside	553059	156624	2.5m	NO2	Y	N	Y	4m	N
DT30	Bat & Ball 2 Otford Road Sevenoaks	Roadside	553019	155692	2.5m	NO2	Y	N	N (7m)	3m	N

Sevenoaks District Council

Site ID	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? (Y/N with distance (m) from monitoring site to relevant exposure)	Distance to Kerb of Nearest Road (m) (N/A if not applicable)	Does this Location Represent Worst-Case Exposure?
DT31	Bat & Ball 3 Seal Road Sevenoaks	Roadside	553154	156685	2.5m	NO2	Y	N	N (1.5m)	1.5m	Y
DT32	Bat & Ball 4 St Johns Sevenoaks	Roadside	553151	156558	2.5m	NO2	Y	N	Y	1.5m	Y
DT5	Riverhead 2 (Laundry) North West	Kerbside	551414	156197	2.5m	NO2	Y	N	N (1.5m)	0.5m	Y
DT6	Riverhead 3 (Opp shops) East	Roadside	551440	156165	2.5m	NO2	Y	N	N (6m)	3m	Y
DT42	62 London Road Riverhead	Roadside	551318	156373	2.5m	NO2	Y	N	N (2m)	2m	Y
DT76	Worships Hill/ Witches Lane, Riverhead	Roadside	551026	155710	2.5m	NO2	Y	N	N (36m)	2m	Y
DT7	High Street East 1 (Road Sign) Seal	Roadside	555092	156694	2.5m	NO2	Y	N	Y	1m	Y
DT8	High Street West 1 (Garage) Seal	Roadside	554991	156726	2.5m	NO2	Y	N	N (3m)	3m	N
DT33	High Street East 2 (Pizza) Seal	Roadside	555068	156711	2m	NO2	Y	N	Y	1.5m	Y
DT34	High Street West 2 (Dorton House) Seal	Roadside	554637	156780	2.5m	NO2	Y	N	N (7m)	2m	Y
DT35	Seal Hollow Road/ A25	Roadside	554093	156798	2.5m	NO2	Y	N	N (18m)	2.5m	Y

Sevenoaks District Council

Site ID	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? (Y/N with distance (m) from monitoring site to relevant exposure)	Distance to Kerb of Nearest Road (m) (N/A if not applicable)	Does this Location Represent Worst-Case Exposure?
DT43	Miners Arms, London Road, Dunton Green	Roadside	551281	156860	2.5m	NO2	Y	N	N (2.5m)	2m	Y
DT54	57 London Road, Dunton Green	Roadside	551216	157007	2.5m	NO2	Y	N	N (8m)	2m	Y
DT57	193 London Road, Dunton Green	Roadside	551007	155585	2m	NO2	Y	N	N (1.5m)	2m	N
DT74	Westerham Road, (Devon Cott) Bessels Green	Roadside	550782	155585	2.5m	NO2	Y	N	N (8m)	2m	N
DT86	59 Westerham Road, Bessels Green	Roadside	550872	155585	2m	NO2	Y	N	Y	1.5m	Y
DT96	High Street Eynsford	Roadside	554007	165477	2.5m	NO2	N	N	Y	1m	N
DT71	204 Main Road, Sundridge	Roadside	548251	155354	2.5m	NO2	Y	N	N (1.5m)	1m	Y
DT92	8 Chevening Road, Sundridge	Roadside	548474	155424	2.5m	NO2	Y	N	N (8m)	1.5m	N
DT12	Station Road (M25) Brasted	Roadside	546815	155866	2m	NO2	Y	N	N (42m)	7m to M25	Y
DT84	West End Brasted	Roadside	546802	155000	2.5m	NO2	Y	N	Y	1m	Y
DT85	Chart Lane Brasted	Roadside	547097	155099	2.5m	NO2	Y	N	Y	1m	N

Sevenoaks District Council

Site ID	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? (Y/N with distance (m) from monitoring site to relevant exposure)	Distance to Kerb of Nearest Road (m) (N/A if not applicable)	Does this Location Represent Worst-Case Exposure?
DT24	High Street, (Wells Close) Westerham	Roadside	544415	153914	2.5m	NO2	Y	N	N (3m)	1m	N
DT25	Vicarage Hill, Westerham	Roadside	544770	154000	2.5m	NO2	Y	N	N (3m)	1m	N
DT36	Market Square, Westeham	kerbside	544594	154025	2.5m	NO2	Y	N	N (3m)	1m	Y
DT75	London Road 2, (Antique Shop) Westerham	Roadside	544600	154139	2.5m	NO2	Y	N	N (5m)	1m	Y
DT13	Wested Lane, Swanley	Roadside	552610	167700	2.5m	NO2	Y	N	N (14m)	5m	Y
DT14	Wadard Terrace, Button St Swanley	Roadside	553109	167880	2.5m	NO2	Y	N	N (15m)	115m to M25	N
DT39	Bartholomew Way, Swanley	Roadside	551492	168695	2.5m	NO2	Y	N	N (13m)	2m	Y
DT40	London Road 1 (traffic lights) Swanley	Kerbside	551592	168162	2.5m	NO2	Y	N	N (2m)	0.5m	Y
DT41	London Road 2 (Bus) Swanley	Roadside	552174	168162	2.5m	NO2	Y	N	N (6m)	1.5m	Y
DT81	Farningham Hill Road, Swanley	Urban	553416	167615	2.5m	NO2	Y	N	N (17m)	27m to M20	N
DT83	Jessamine Terrace, Birchwood Road Swanley	Roadside	550298	169582	2.5m	NO2	Y	N	N (0.5m)	1m	Y

Sevenoaks District Council

Site ID	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? (Y/N with distance (m) from monitoring site to relevant exposure)	Distance to Kerb of Nearest Road (m) (N/A if not applicable)	Does this Location Represent Worst-Case Exposure?
DT93	Pucknells, Birchwood Road, Swanley	Roadside	550283	169743	2.5m	NO2	N	N	N (10m)	2m	Y
DT94	Birchwood Road Junction London Road	Roadside	550258	169575	2m	NO2	Y	N	N (10m)	2m	Y
DT95	Malvern, Birchwood Road, Swanley	Roadside	550377	169479	2.5m	NO2	Y	N	N (20m)	2m	Y
DT26	Farningham Hill (A20)	Roadside	554217	167252	2m	NO2	Y	N	Y	5m to A20/ 90m to M20	N
DT67	Brands Hatch/Ash Road	Roadside	558033	164933	2m	NO2	Y	N	Y	0.5m	N
BC1	Greatness AQ Station 1	Urban Background	553603	156774	2m	NO2	N	Y	Y	46m	N
BC2	Greatness AQ Station 2	Urban Background	553603	156774	2m	NO2	N	Y	Y	46m	N
BC3	Greatness AQ Station 3	Urban Background	553603	156774	2m	NO2	N	Y	Y	46m	N
BC4	Bat & Ball AQ Station 1	Roadside	553044	156690	2m	NO2	Y	Y	N (30m)	8m	N
BC5	Bat & Ball AQ Station 2	Roadside	553044	156690	2m	NO2	Y	Y	N (30m)	8m	N
BC6	Bat & Ball AQ Station 3	Roadside	553044	156690	2m	NO2	Y	Y	N (30m)	8m	N

1.6 Comparison of Monitoring Results with Air Quality Objectives

1.6.1 Nitrogen Dioxide (NO₂)

Automatic Monitoring Data

Greatness Continuous Monitoring Station (CM1) is a suburban background monitoring site in a park and is approximately 46 meters away from the nearest busy road (A25). Greatness CMS shows a relatively steady background level of NO₂.

Bat & Ball Continuous Monitoring Station (CM2) is alongside a busy and congested junction which is within an AQMA and is approximately 8m from the roadside due to location difficulties. Since some housing in parts of the AQMA is only 1 m from the kerb, the site does not represent the worst case exposure.

There have been some very slight changes in some levels at Bat & Ball, which is probably due to metrological factors and/or economic recession.

Due to issues with CM1 at Greatness, data capture is below 90% for the year

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

Site ID	Site Type	Within AQMA?	Valid Data Capture for Monitoring Period % ^a	Valid Data Capture 2013 % ^b	Annual Mean Concentration (µg/m ³)				
					2009* ^c	2010* ^c	2011* ^c	2012* ^c	2013 ^c
Greatness CM1	Urban Background	N	84	84	21	21	19	19	20*
Bat & Ball CM2	Roadside	Y	94	94	33	31	30	29	31*

In bold, exceedance of the NO₂ annual mean AQS objective of 40µg/m³

*Data capture for the year at Greatness (CM1) has been affected by due to technical difficulties which left the monitoring station non-operational between the following dates:

24th April to 17th June 2013

Co-located diffusion tubes at the fixed monitors have recorded an annual mean of the following:

Greatness (CM1)	21 ug/m-3
Bat & Ball (CM2)	37 ug/m-3

Figure 2.3 Trends in Annual Mean NO₂ Concentrations Measured at Automatic Monitoring Sites

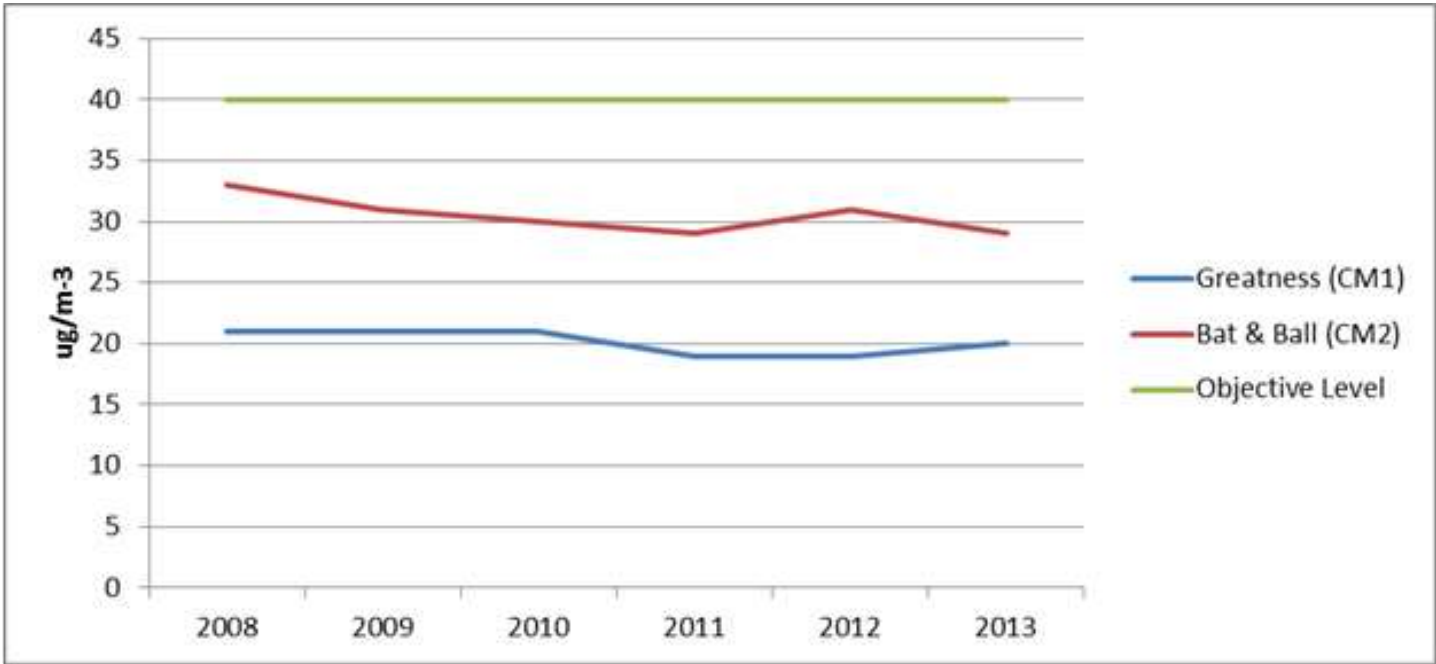


Table 2.4 Results of Automatic Monitoring for NO₂: Comparison with 1-hour Mean Objective

Site ID	Site Type	Within AQMA?	Valid Data Capture for Monitoring Period % ^a	Valid Data Capture 2013 % ^b	Number of Hourly Means > 200µg/m ³				
					2009* ^c	2010* ^c	2011* ^c	2012* ^c	2013 ^c
Greatness (CM1)	Urban Background	N	84	84	0	0	0	0	0
Bat & Ball (CM2)	Roadside	Y	94	94	0	0	0	0	0

Diffusion Tube Monitoring Data

Table 2.5 Results of NO₂ Diffusion Tubes 2013

Site ID	Location	Site Type	Within AQMA?	Triplicate or Co-located Tube	Full Calendar Year Data Capture 2013 (Number of Months or %) ^a	2013 Annual Mean Concentration (µg/m ³) - Bias Adjustment factor = 0.86 ^b
DT2	High Street South 1 (Guitar) Sevenoaks	Roadside	Y	N	12	<u>62.0</u>
DT3	Garvock Drive Sevenoaks	Urban Background	N	N	12	14.3
DT27	High Street South 2 (Sev School) Sevenoaks	Roadside	Y	N	12	41.8
DT28	High Street North 2 (Sev Sennockian) Sevenoaks	Kerbside	Y	N	11	49.8
DT29	High Street North 3 (Water Trough) Sevenoaks	Roadside	Y	N	12	32.5
DT48	73 London Road (Brunch) Sevenoaks	Roadside	Y	N	11	34.1
DT49	20 London Road (Butchers) Sevenoaks	Roadside	Y	N	12	38.5
DT51	130 London Road (Opp Car Sales) Sevenoaks	Kerbside	Y	N	11	38.9
DT52	142 London Road (Lulworth) Sevenoaks	Roadside	Y	N	12	42.7

Sevenoaks District Council

Site ID	Location	Site Type	Within AQMA?	Triplicate or Co-located Tube	Full Calendar Year Data Capture 2013 (Number of Months or %) ^a	2013 Annual Mean Concentration ($\mu\text{g}/\text{m}^3$) - Bias Adjustment factor = 0.86 ^b
DT77	Montreal Road/ Amherst Hill Sevenoaks	Roadside	N	N	12	46.5
DT87	Bradbourne Vale Road South	Roadside	Y	N	12	55.7
DT88	Bradbourne Vale Road North	Roadside	Y	N	11	36.8
DT89	133 London Road (Showroom) Sevenoaks	Kerbside	Y	N	12	33.2
DT90	4a St Johns Hill Sevenoaks	Roadside	N	N	12	40.9
DT91	Egden Walk St Johns Sevenoaks	Roadside	N	N	12	23.3
DT23	Bat & Ball 1 Sevenoaks (Ferrari)	Roadside	Y	N	12	43.9
DT30	Bat & Ball 2 Otford Road Sevenoaks	Roadside	Y	N	12	39.9
DT31	Bat & Ball 3 Seal Road Sevenoaks	Roadside	Y	N	12	54.1
DT32	Bat & Ball 4 St Johns Sevenoaks	Roadside	Y	N	12	55.9
DT5	Riverhead 2 (Laundry) North West	Kerbside	Y	N	12	50.2
DT6	Riverhead 3 (Opp shops) East	Roadside	Y	N	11	51.6
DT42	62 London Road Riverhead	Roadside	Y	N	12	41.9

Sevenoaks District Council

Site ID	Location	Site Type	Within AQMA?	Triplicate or Co-located Tube	Full Calendar Year Data Capture 2013 (Number of Months or %) ^a	2013 Annual Mean Concentration ($\mu\text{g}/\text{m}^3$) - Bias Adjustment factor = 0.86 ^b
DT76	Worships Hill/ Witches Lane, Riverhead	Roadside	Y	N	12	43.1
DT7	High Street East 1 (Road Sign) Seal	Roadside	Y	N	12	51.0
DT8	High Street West 1 (Garage) Seal	Roadside	Y	N	12	36.8
DT33	High Street East 2 (Pizza) Seal	Roadside	Y	N	12	48.4
DT34	High Street West 2 (Dorton House) Seal	Roadside	Y	N	11	37
DT35	Seal Hollow Road/ A25	Roadside	Y	N	12	40.3
DT43	Miners Arms, London Road, Dunton Green	Roadside	Y	N	12	36.8
DT54	57 London Road, Dunton Green	Roadside	Y	N	12	36.8
DT57	193 London Road, Dunton Green	Roadside	Y	N	12	57.7
DT74	Westerham Road, (Devon Cott) Bessels Green	Roadside	Y	N	12	41.9
DT86	59 Westerham Road, Bessels Green	Roadside	Y	N	12	42.7
DT96	High Street Eynsford	Roadside	N	N	12	31.5
DT71	204 Main Road, Sundridge	Roadside	Y	N	12	39.9
DT92	8 Chevening Road, Sundridge	Roadside	Y	N	12	34.1
DT12	Station Road (M25) Brasted	Roadside	Y	N	12	44.2
DT84	West End Brasted	Roadside	Y	N	12	41.2

Sevenoaks District Council

Site ID	Location	Site Type	Within AQMA?	Triplicate or Co-located Tube	Full Calendar Year Data Capture 2013 (Number of Months or %) ^a	2013 Annual Mean Concentration ($\mu\text{g}/\text{m}^3$) - Bias Adjustment factor = 0.86 ^b
DT85	Chart Lane Brasted	Roadside	Y	N	12	58.9
DT24	High Street, (Wells Close) Westerham	Roadside	Y	N	12	43.8
DT25	Vicarage Hill, Westerham	Roadside	Y	N	12	35.8
DT36	Market Square, Westeham	kerbside	Y	N	12	55.8
DT75	London Road 2, (Antique Shop) Westerham	Roadside	Y	N	12	29.7
DT13	Wested Lane, Swanley	Roadside	Y	N	12	40.7
DT14	Wadard Terrace, Button St Swanley	Roadside	Y	N	12	36.0
DT39	Bartholomew Way, Swanley	Roadside	Y	N	12	42.4
DT40	London Road 1 (traffic lights) Swanley	Kerbside	Y	N	12	51.6
DT41	London Road 2 (Bus) Swanley	Roadside	Y	N	12	43.5
DT81	Farningham Hill Road, Swanley	Urban	Y	N	12	36.1
DT83	Jessamine Terrace, Birchwood Road Swanley	Roadside	Y	N	12	51.8
DT93	Pucknells, Birchwood Road, Swanley	Roadside	N	N	12	32.4
DT94	Birchwood Road Junction London Road	Roadside	Y	N	12	36.5
DT95	Malvern, Birchwood Road, Swanley	Roadside	Y	N	12	36.6
DT26	Farningham Hill (A20)	Roadside	Y	N	12	46.3

Site ID	Location	Site Type	Within AQMA?	Triplicate or Co-located Tube	Full Calendar Year Data Capture 2013 (Number of Months or %) ^a	2013 Annual Mean Concentration ($\mu\text{g}/\text{m}^3$) - Bias Adjustment factor = 0.86 ^b
DT67	Brands Hatch/Ash Road	Roadside	Y	N	11	32.1
BC1	Greatness AQ Station 1	Urban Background	N	Y	12	21.7
BC2	Greatness AQ Station 2	Urban Background	N	Y	12	21.4
BC3	Greatness AQ Station 3	Urban Background	N	Y	12	20.6
BC4	Bat & Ball AQ Station 1	Roadside	Y	Y	12	37.8
BC5	Bat & Ball AQ Station 2	Roadside	Y	Y	12	36.4
BC6	Bat & Ball AQ Station 3	Roadside	Y	Y	12	36.6

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

Underlined, annual mean > 60 $\mu\text{g}/\text{m}^3$, indicating a potential exceedance of the NO₂ hourly mean AQS objective

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

^b If an exceedance is measured at a monitoring site not representative of public exposure, NO₂ concentration at the nearest relevant exposure should be estimated based on the “[NO₂ fall-off with distance](http://laqm.defra.gov.uk/tools-monitoring-data/no2-falloff.html)” calculator (<http://laqm.defra.gov.uk/tools-monitoring-data/no2-falloff.html>), and results should be discussed in a specific section. The procedure is also explained [in Box 2.3 of Technical Guidance LAQM.TG\(09\)](http://laqm.defra.gov.uk/technical-guidance/index.html?d=page=30) (<http://laqm.defra.gov.uk/technical-guidance/index.html?d=page=30>).

Table 2.6 Results of NO₂ Diffusion Tubes (2009 to 2013)

Site ID	Site Type	Within AQMA?	Annual Mean Concentration (µg/m ³) - Adjusted for Bias ^a			
			2010 (Bias Adjustment Factor = 0.83)	2011 (Bias Adjustment Factor = XX)	2012 (Bias Adjustment Factor = 0.91)	2013 (Bias Adjustment Factor = 0.86)
DT2	Roadside	Y	<u>63.7</u>	<u>64.1</u>	<u>64.6</u>	<u>62.0</u>
DT3	Urban Background	N	15.8	13.7	14.9	14.3
DT27	Roadside	Y	46.7	46.2	45	41.8
DT28	Kerbside	Y	50.4	48.2	51.8	49.8
DT29	Roadside	Y	31.6	31.2	33.6	32.5
DT48	Roadside	Y	35.5	37.6	35.8	34.1
DT49	Roadside	Y	36.5	36.4	33.3	38.5
DT51	Kerbside	Y	43.9	42.8	43.3	38.9
DT52	Roadside	Y	41.3	42.2	41.4	42.7
DT77	Roadside	N	47.3	48.1	44.8	46.5
DT87	Roadside	Y	53.7	58	56.7	55.7
DT88	Roadside	Y	41.5	40.1	39.8	36.8
DT89	Kerbside	Y	35.8	36.9	36.2	33.2
DT90	Roadside	N	40.8	41.4	41.0	40.9
DT91	Roadside	N	22.2	23.6	22.9	23.3
DT23	Roadside	Y	40.7	43.4	43.1	43.9
DT30	Roadside	Y	38.6	39.1	42.5	39.9
DT31	Roadside	Y	55.8	57.5	<u>60.2</u>	54.1
DT32	Roadside	Y	<u>61.9</u>	59.3	<u>60.8</u>	55.9
DT5	Kerbside	Y	50.6	54.7	53.5	50.2
DT6	Roadside	Y	53.2	51	51.5	51.6
DT42	Roadside	Y	44.4	46	47.1	41.9

Site ID	Site Type	Within AQMA?	Annual Mean Concentration ($\mu\text{g}/\text{m}^3$) - Adjusted for Bias ^a			
			2010 (Bias Adjustment Factor = 0.83)	2011 (Bias Adjustment Factor = XX)	2012 (Bias Adjustment Factor = 0.91)	2013 (Bias Adjustment Factor = 0.86)
DT76	Roadside	Y	38	39.5	45.3	43.1
DT7	Roadside	Y	51	53.3	56.5	51.0
DT8	Roadside	Y	38.6	36.2	38.2	36.8
DT33	Roadside	Y	51.9	50.2	53.8	48.4
DT34	Roadside	Y	38.8	37.4	39.7	37
DT35	Roadside	Y	41.1	41.7	44	40.3
DT43	Roadside	Y	38.7	36.1	36.2	36.8
DT54	Roadside	Y	40.7	39	43	36.8
DT57	Roadside	Y	33.7	38.3	32.8	Excluded
DT74	Roadside	Y	40.3	47.0	48.0	41.9
DT86	Roadside	Y	45.1	49.7	46.5	42.7
DT96	Roadside	N	29.8	30.4	31.2	31.5
DT71	Roadside	Y	36.3	40.4	38.8	39.9
DT92	Roadside	Y	33.9	32.6	33.7	34.1
DT12	Roadside	Y	50.1	50.5	53.7	44.2
DT84	Roadside	Y	35.7	35.3	38.7	41.2
DT85	Roadside	Y	52.2	56.7	56.2	58.9
DT24	Roadside	Y	46	46.5	39.2	43.8
DT25	Roadside	Y	34.8	33.9	36.3	35.8
DT36	kerbside	Y	51.8	55.2	55.3	55.8
DT75	Roadside	Y	33.5	34	33.9	29.7
DT13	Roadside	Y	48	42.4	40.1	40.7
DT14	Roadside	Y	38.8	43.3	41.9	36.0
DT39	Roadside	Y	44	45.8	42.3	42.4
DT40	Kerbside	Y	55.7	52.1	54.8	51.6
DT41	Roadside	Y	48.1	46.4	45.7	43.5
DT81	Urban	Y	34.8	40.9	40.5	36.1
DT83	Roadside	Y	56.9	59.7	62.1	51.8

Site ID	Site Type	Within AQMA?	Annual Mean Concentration ($\mu\text{g}/\text{m}^3$) - Adjusted for Bias ^a			
			2010 (Bias Adjustment Factor = 0.83)	2011 (Bias Adjustment Factor = XX)	2012 (Bias Adjustment Factor = 0.91)	2013 (Bias Adjustment Factor = 0.86)
DT93	Roadside	N	32.8	32.5	32.8	32.4
DT94	Roadside	Y	39	41.9	37.6	36.5
DT95	Roadside	Y	39.6	40.2	39.6	36.6
DT26	Roadside	Y	49.4	44.5	48	46.3
DT67	Roadside	Y	32.3	36.5	33.7	32.1
BC1	Urban Background	N				21.7
BC2	Urban Background	N				21.4
BC3	Urban Background	N				20.6
BC4	Roadside	Y				37.8
BC5	Roadside	Y				36.4
BC6	Roadside	Y				36.6

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

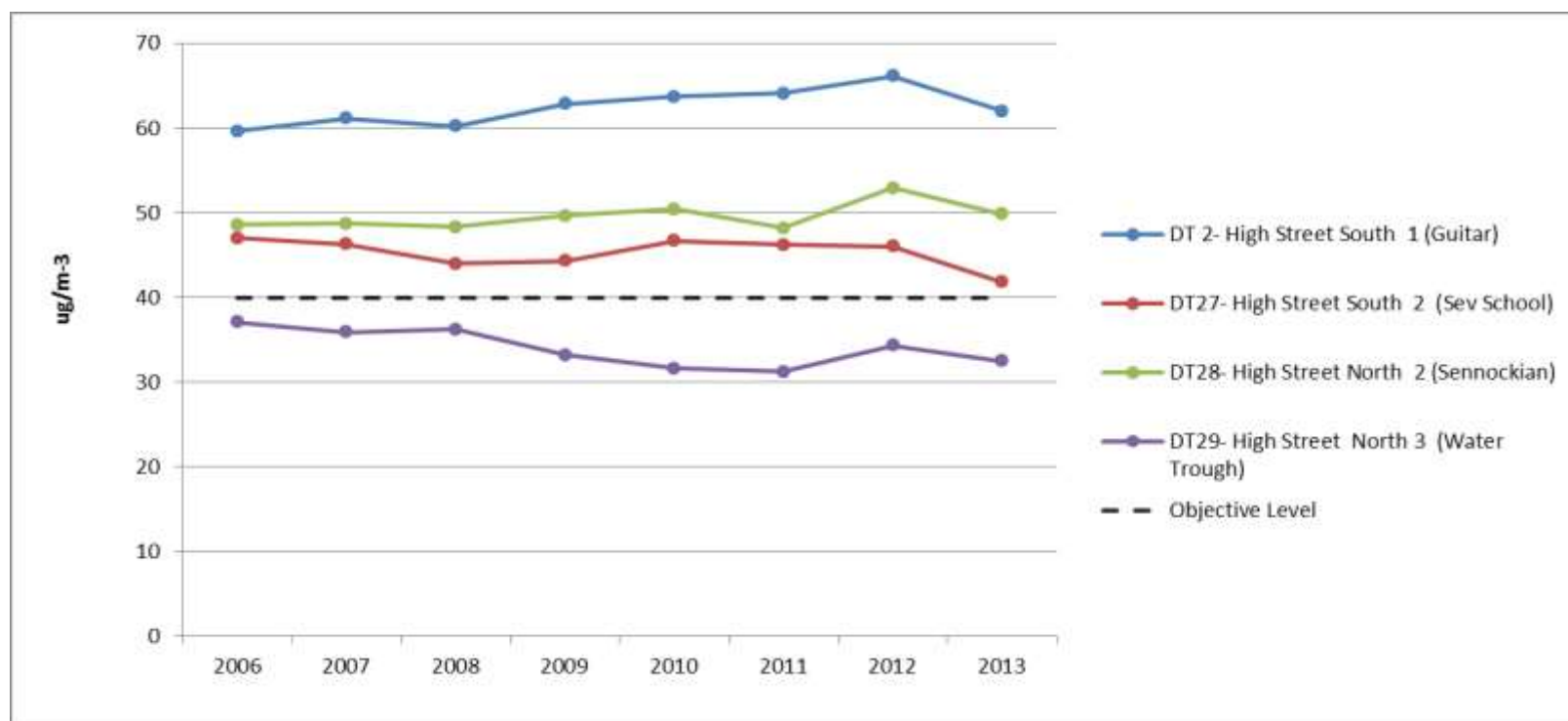
Underlined, annual mean > 60 $\mu\text{g}/\text{m}^3$, indicating a potential exceedence of the NO₂ hourly mean AQS objective

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

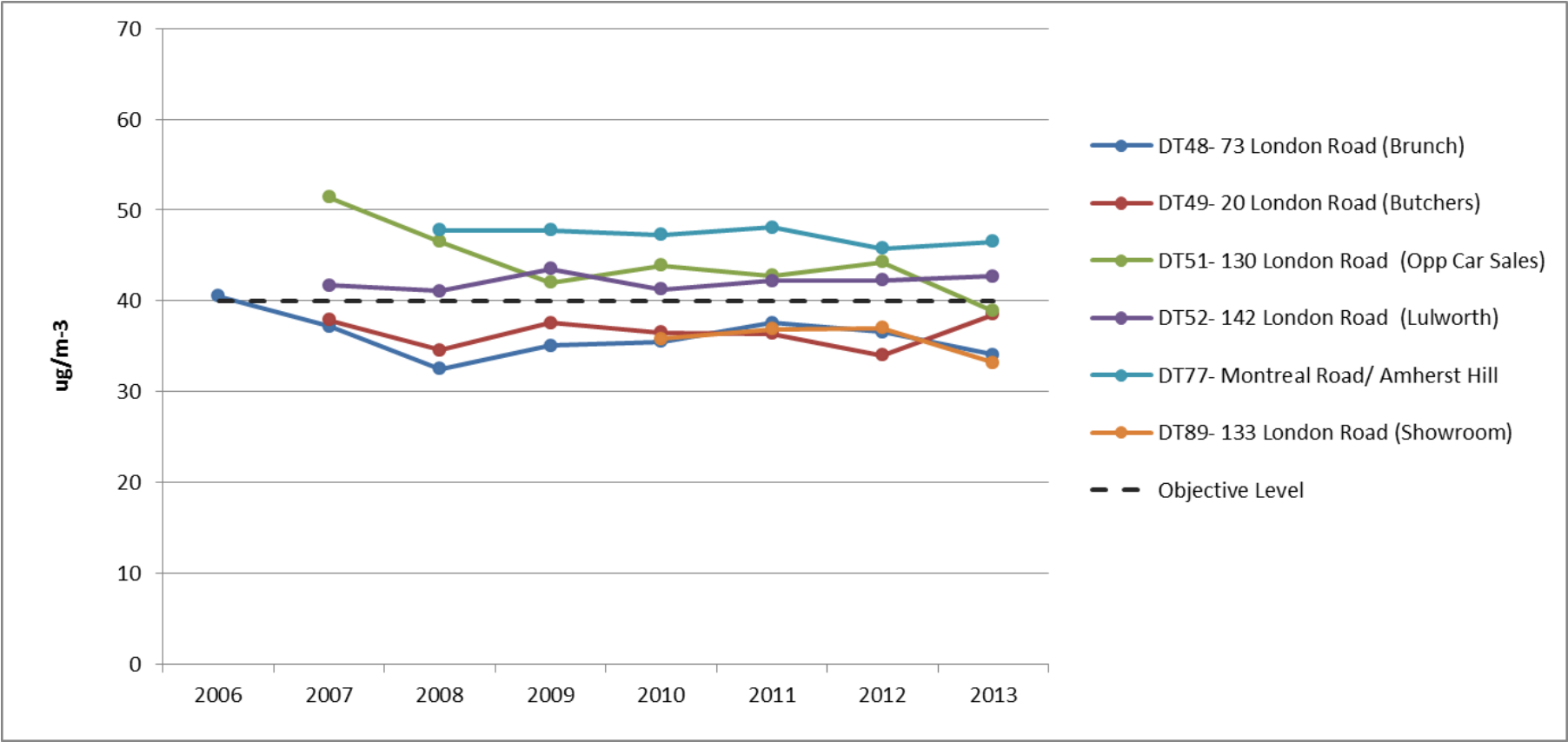
Figure 2.4 Trends in Annual Mean Nitrogen Dioxide Concentrations Measured at Diffusion Tube Monitoring Sites

A trend chart providing NO₂ annual mean results over the past 5 years (or more if available) may be inserted here. Please discuss any trends shown.

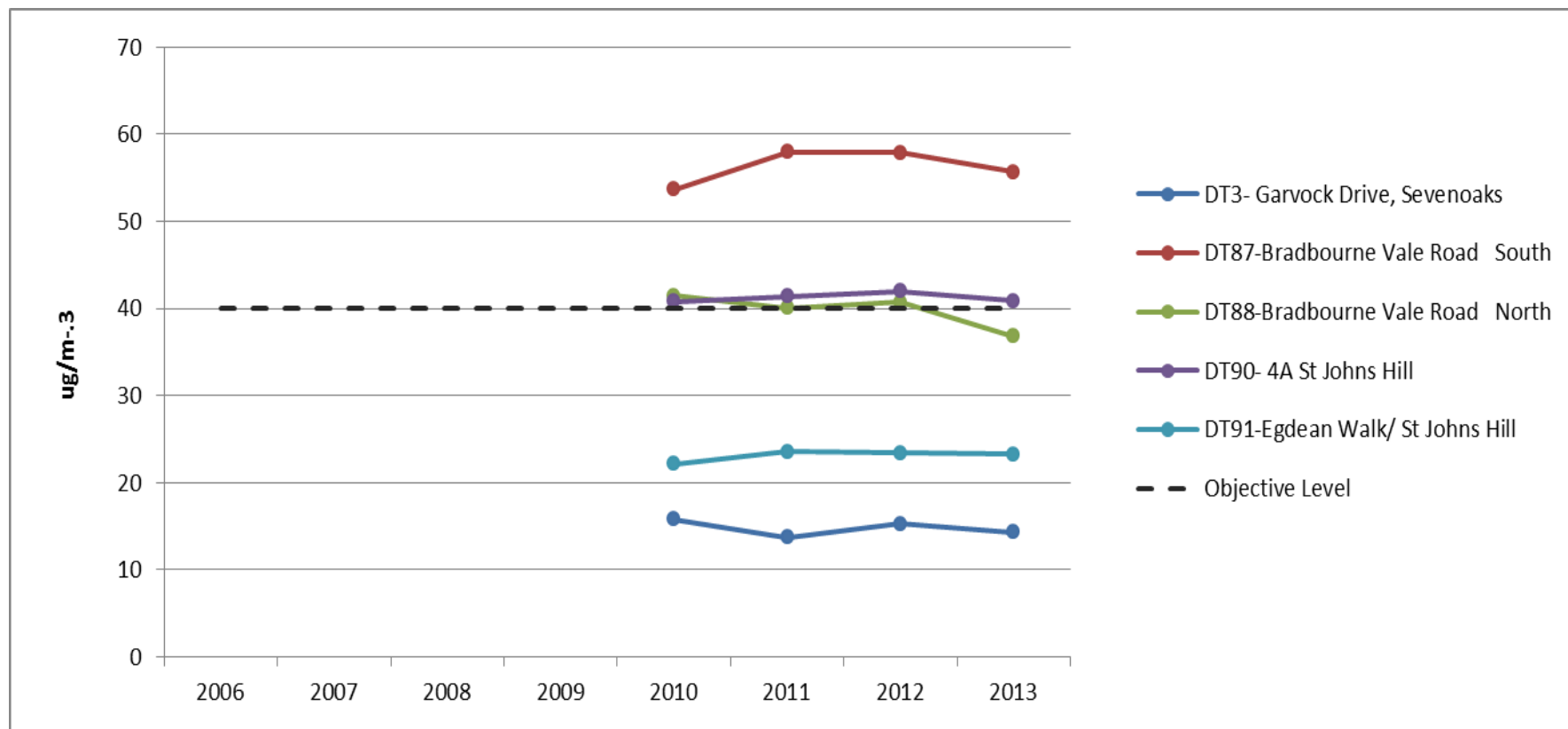
High Street, Sevenoaks



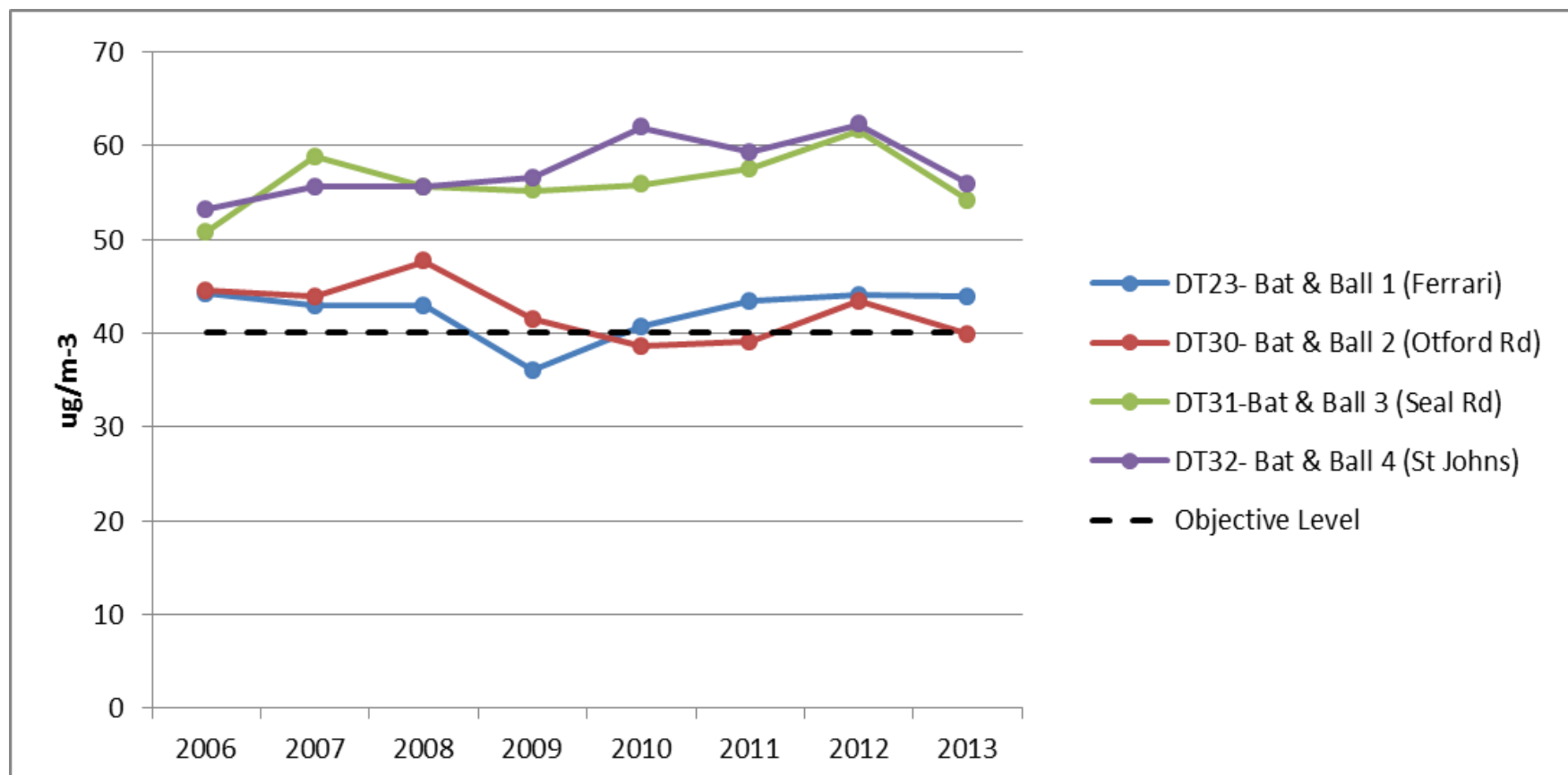
London Road, Sevenoaks



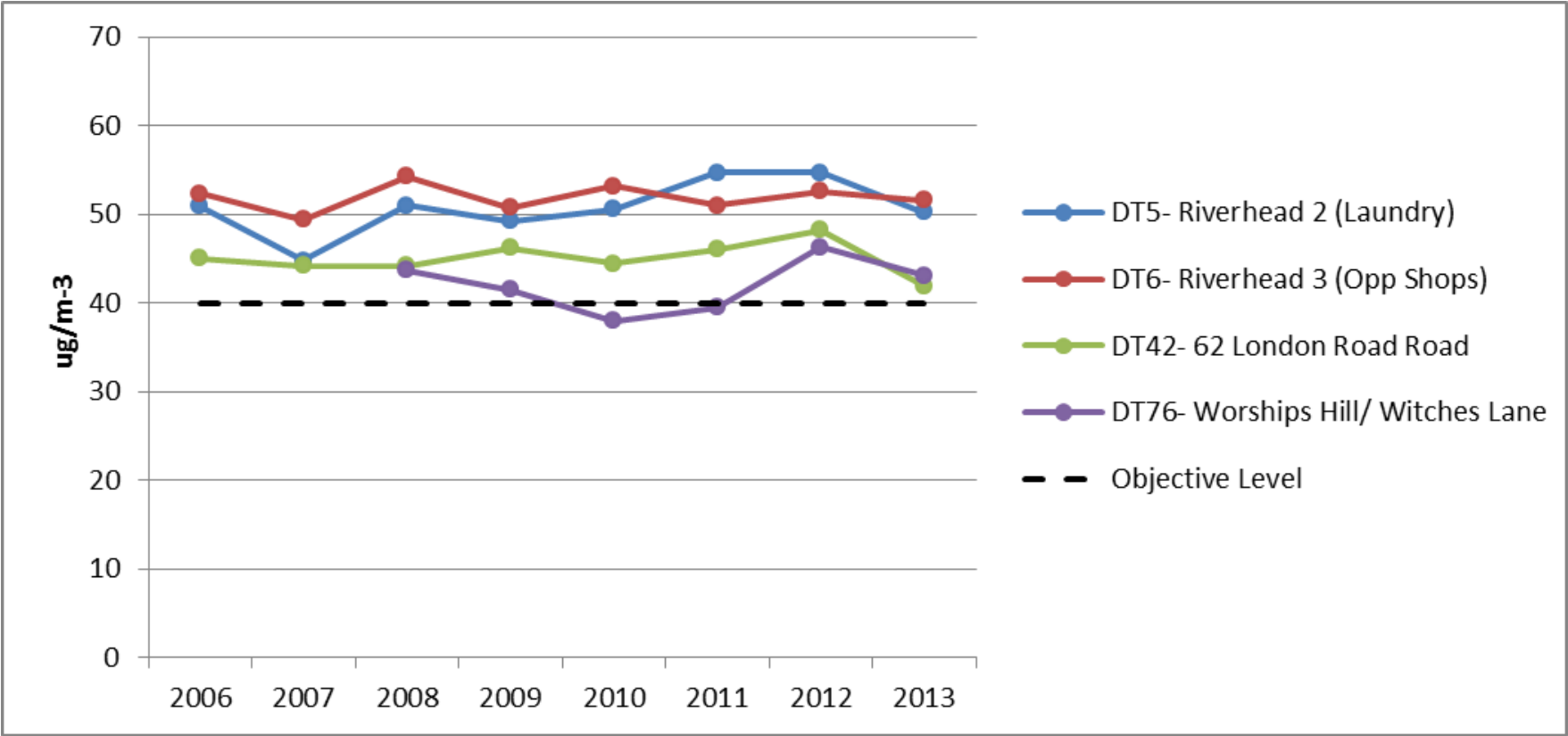
St Johns Hill, Bradbourne Vale Road and Garvock Drive (background)



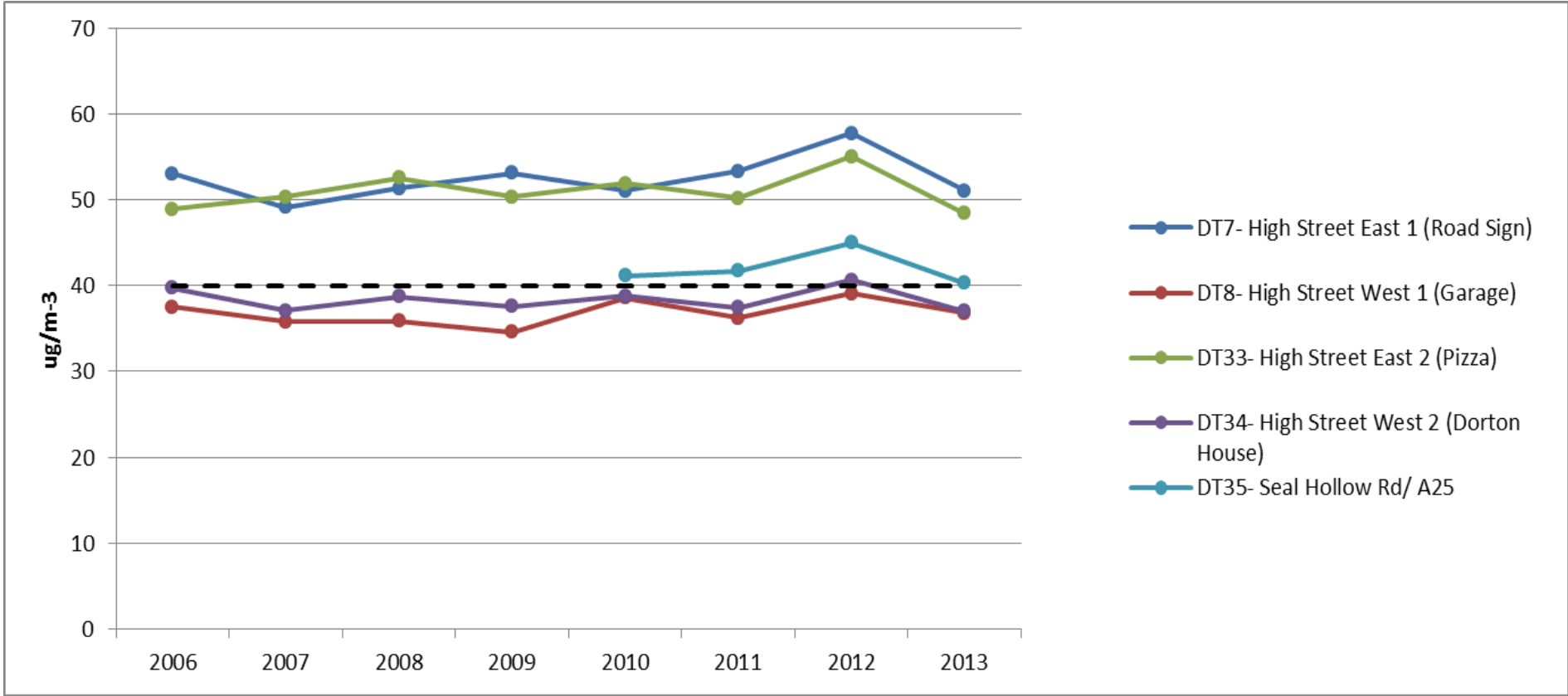
Bat & Ball Junction



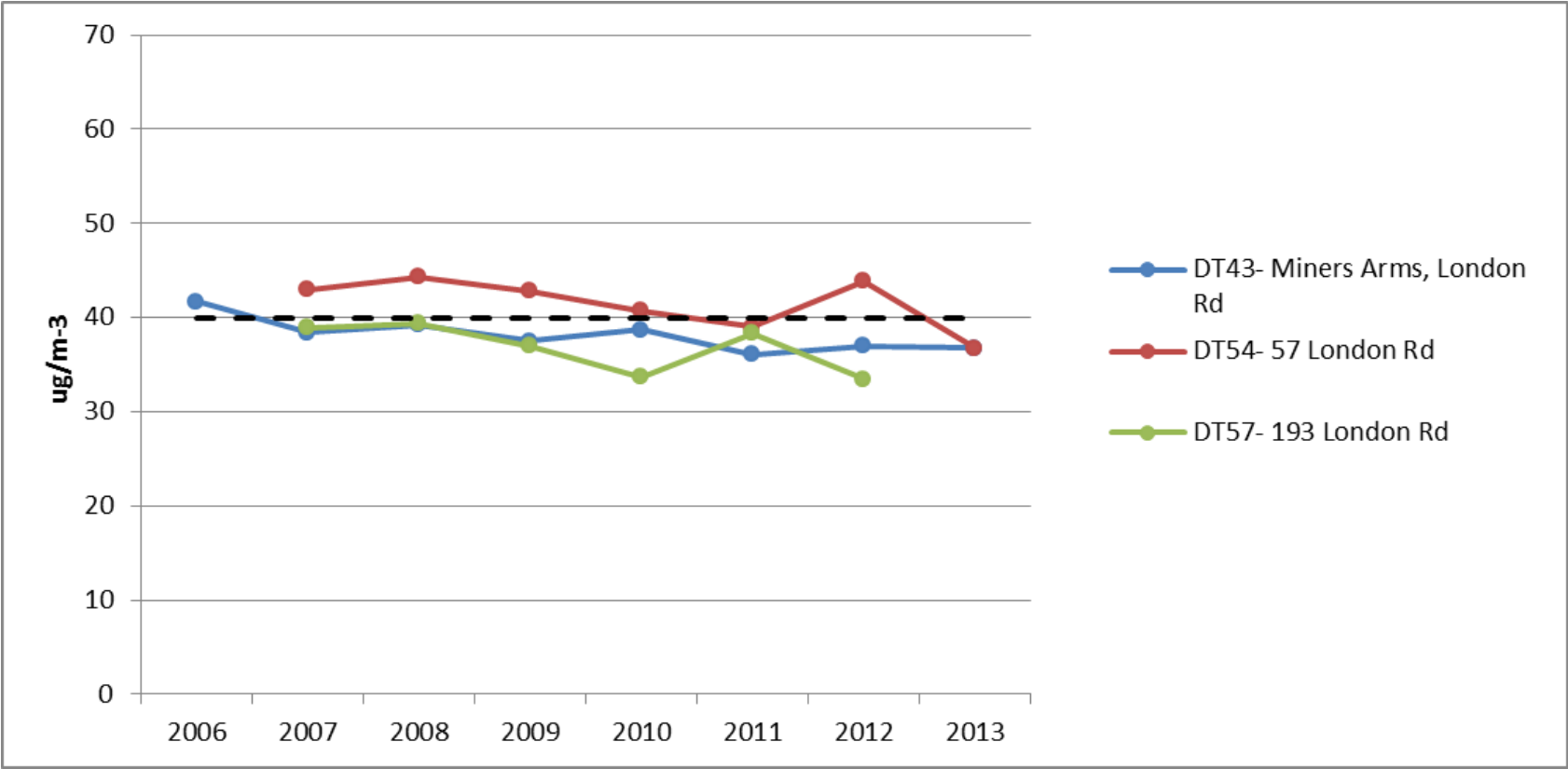
Riverhead



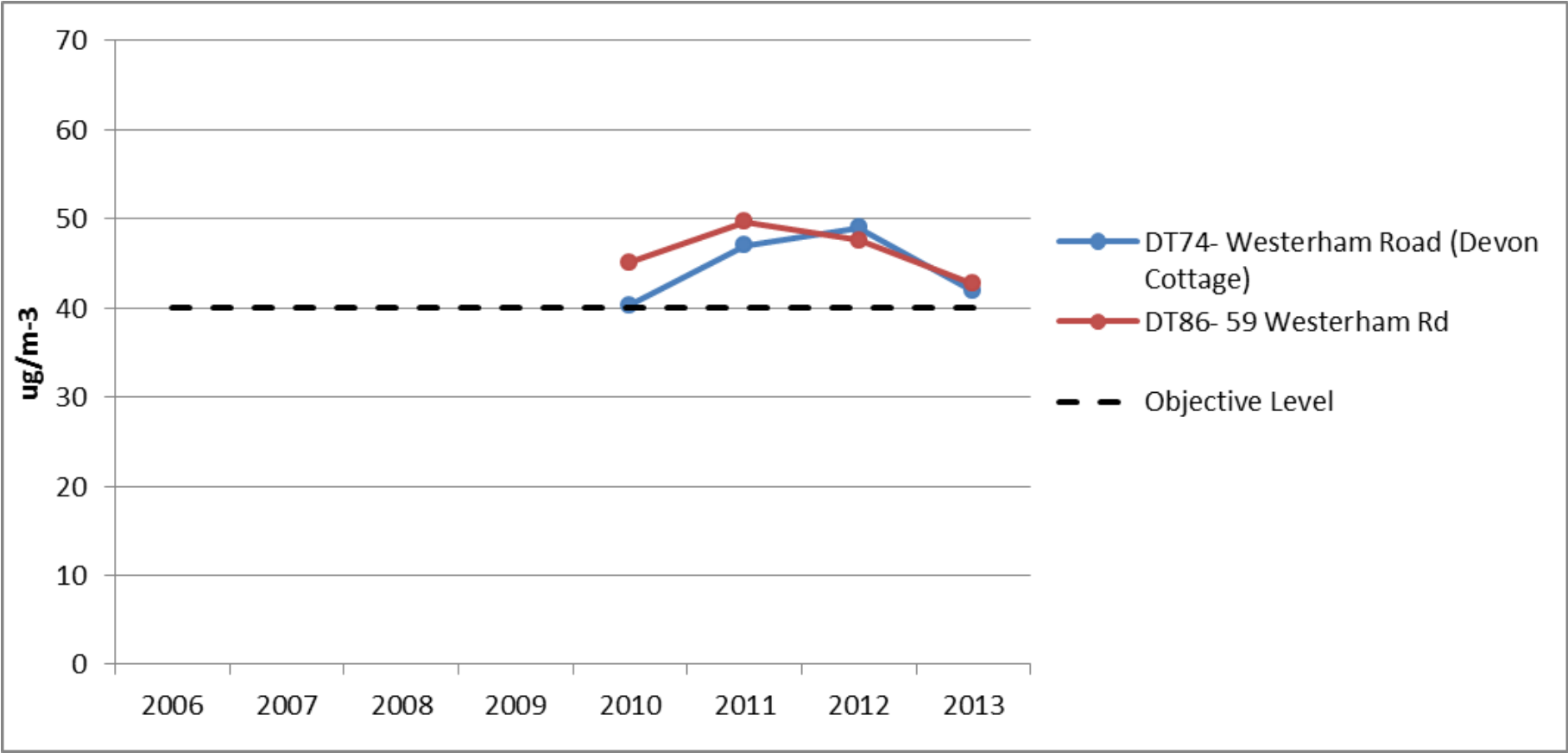
Seal



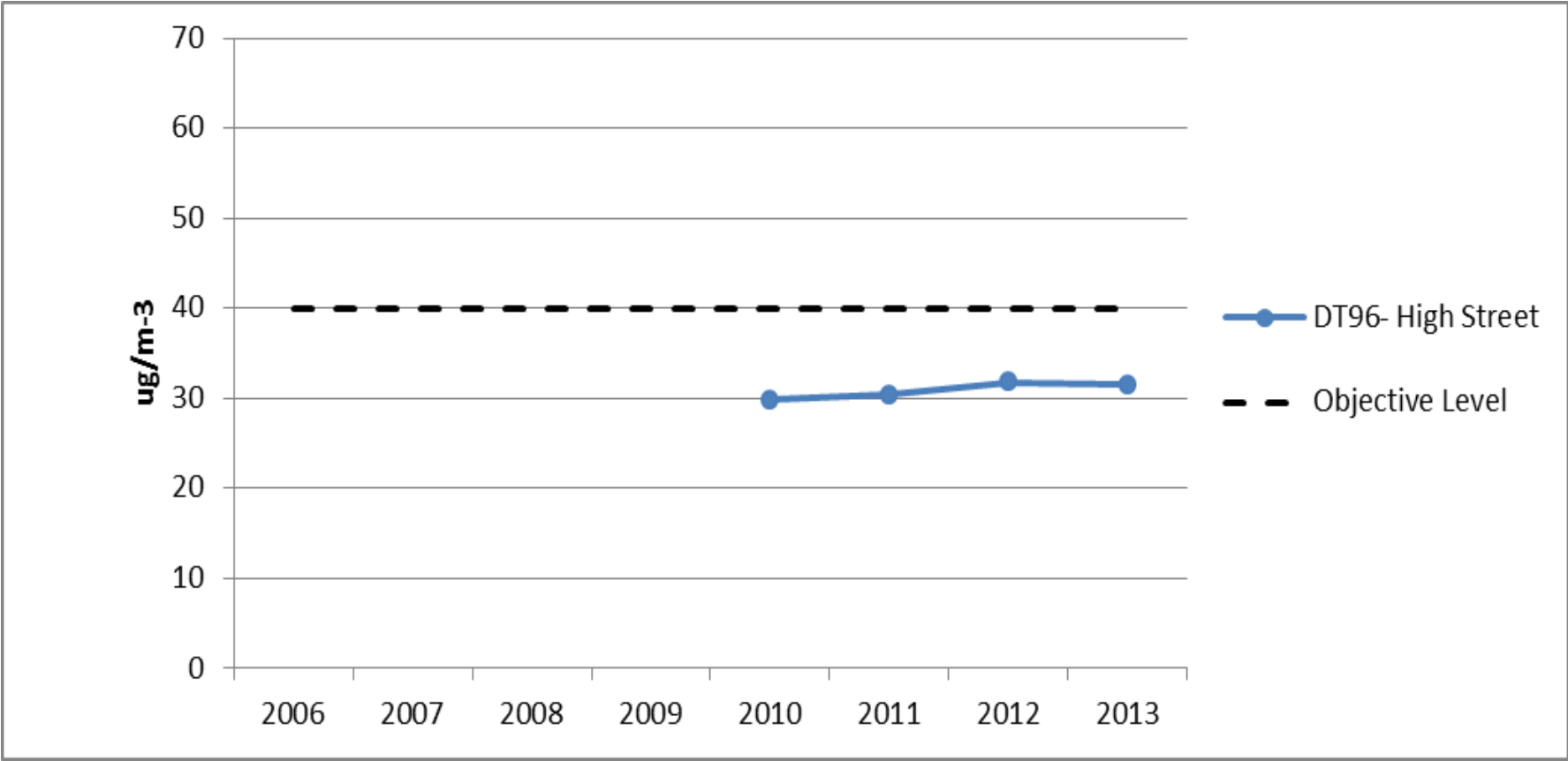
Dunton Green



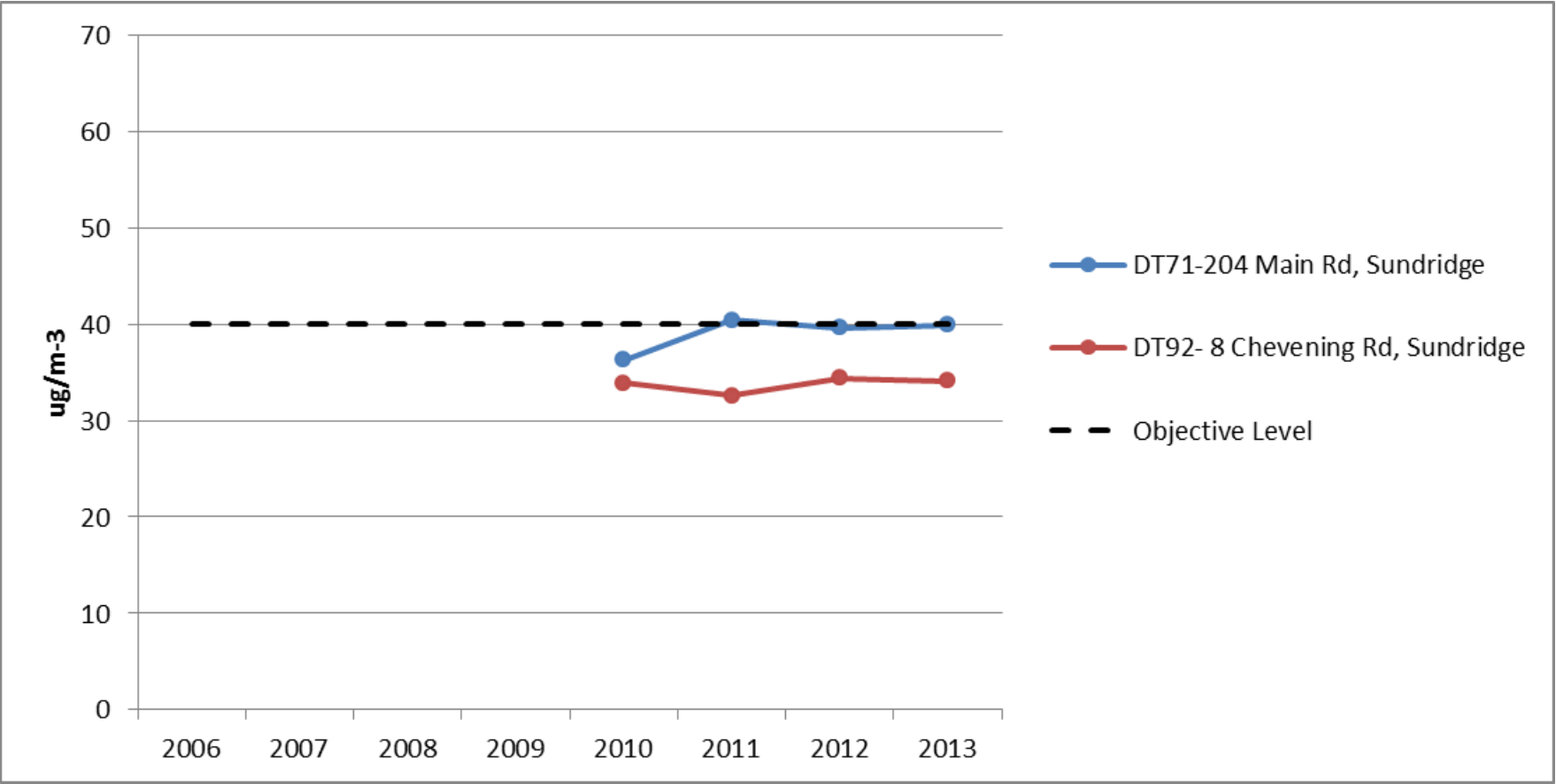
Bessels Green



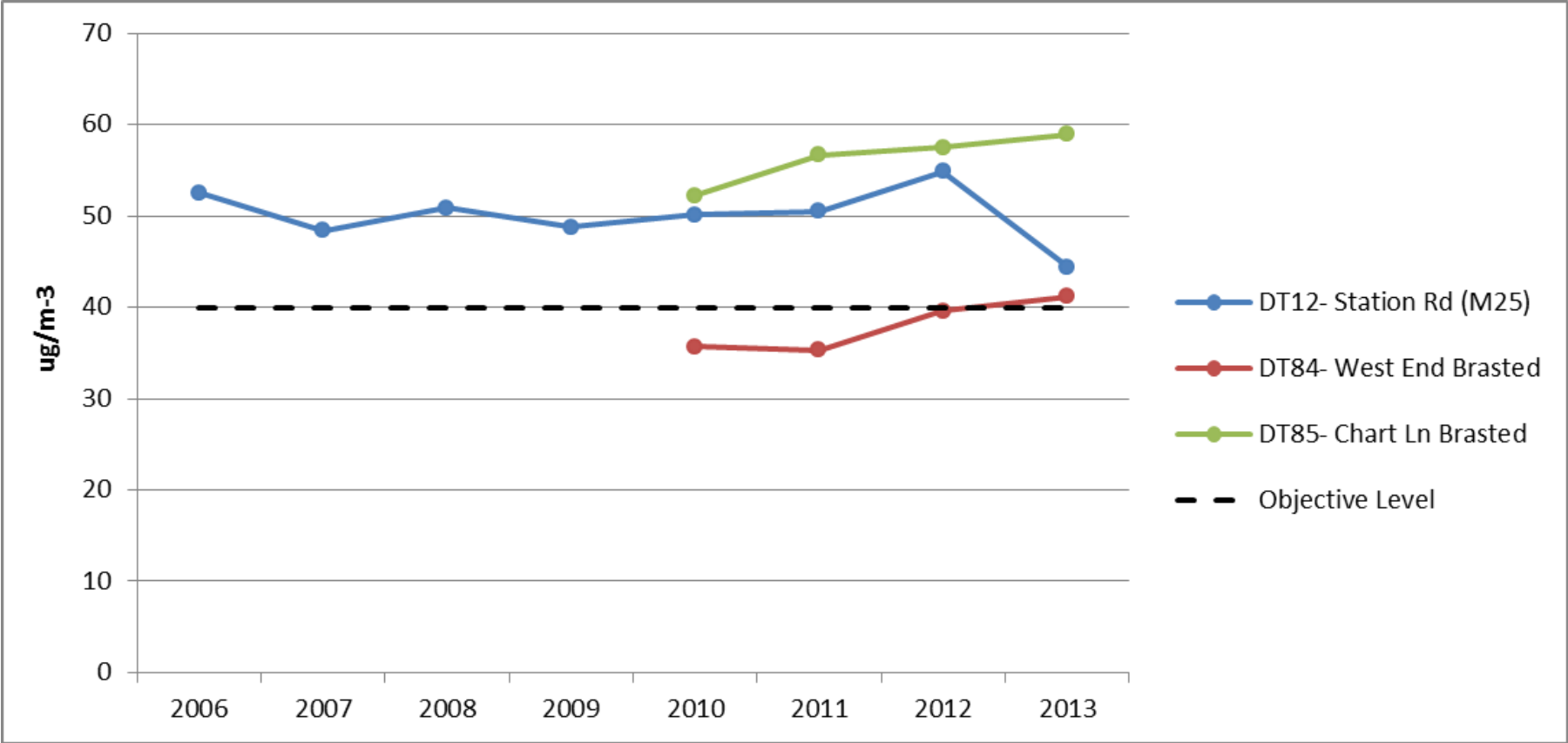
Eynsford



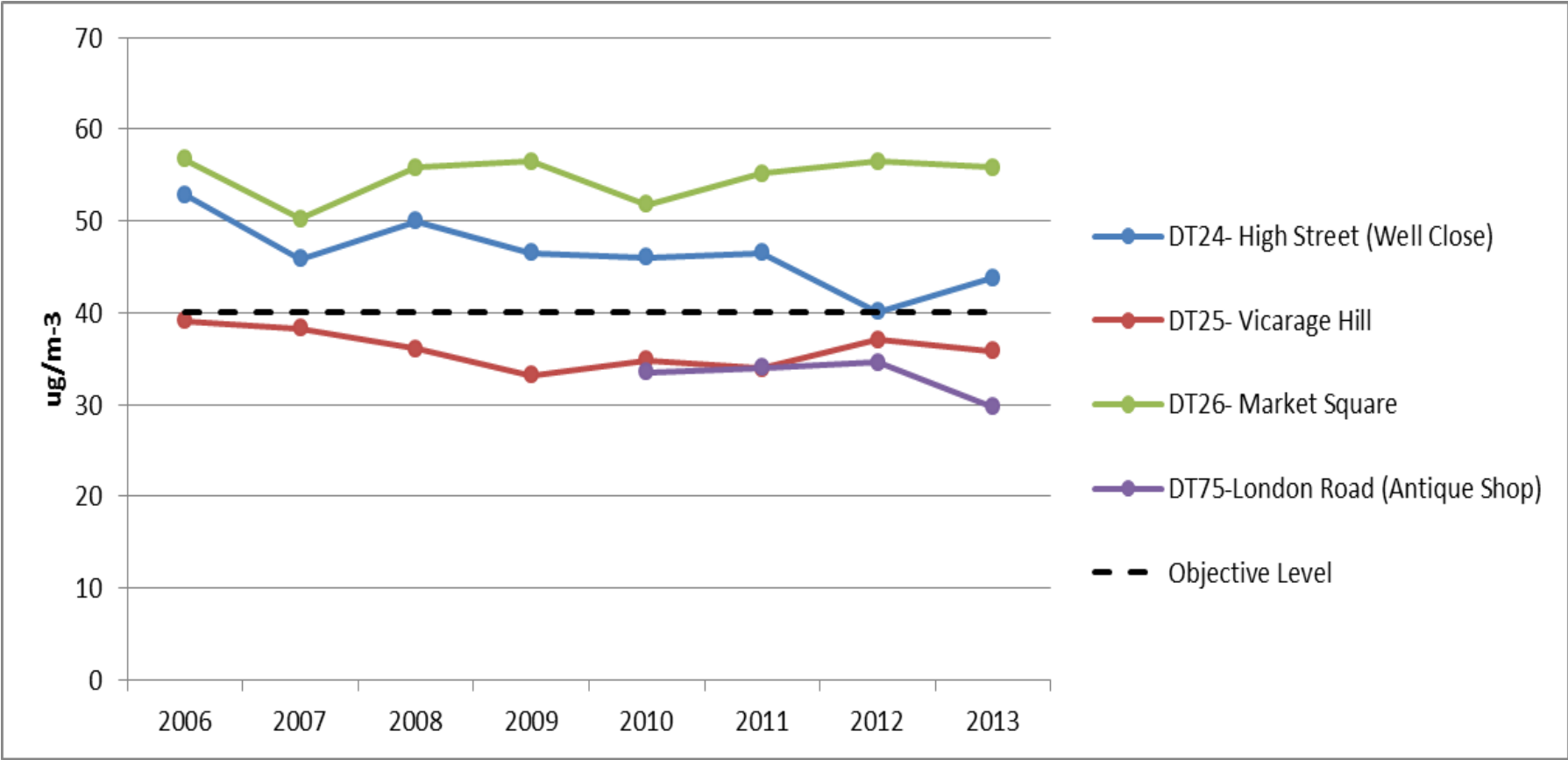
Sundridge



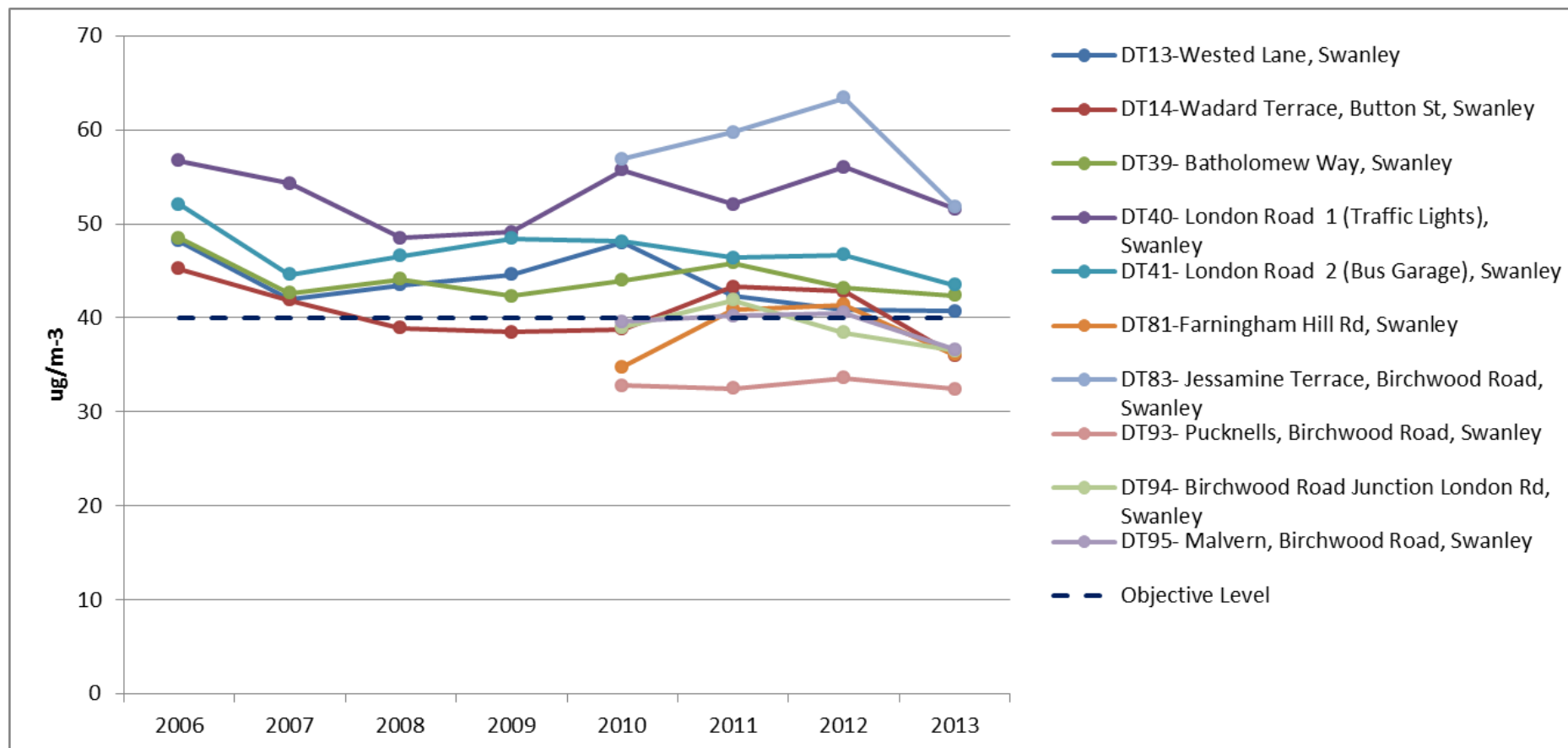
Brasted



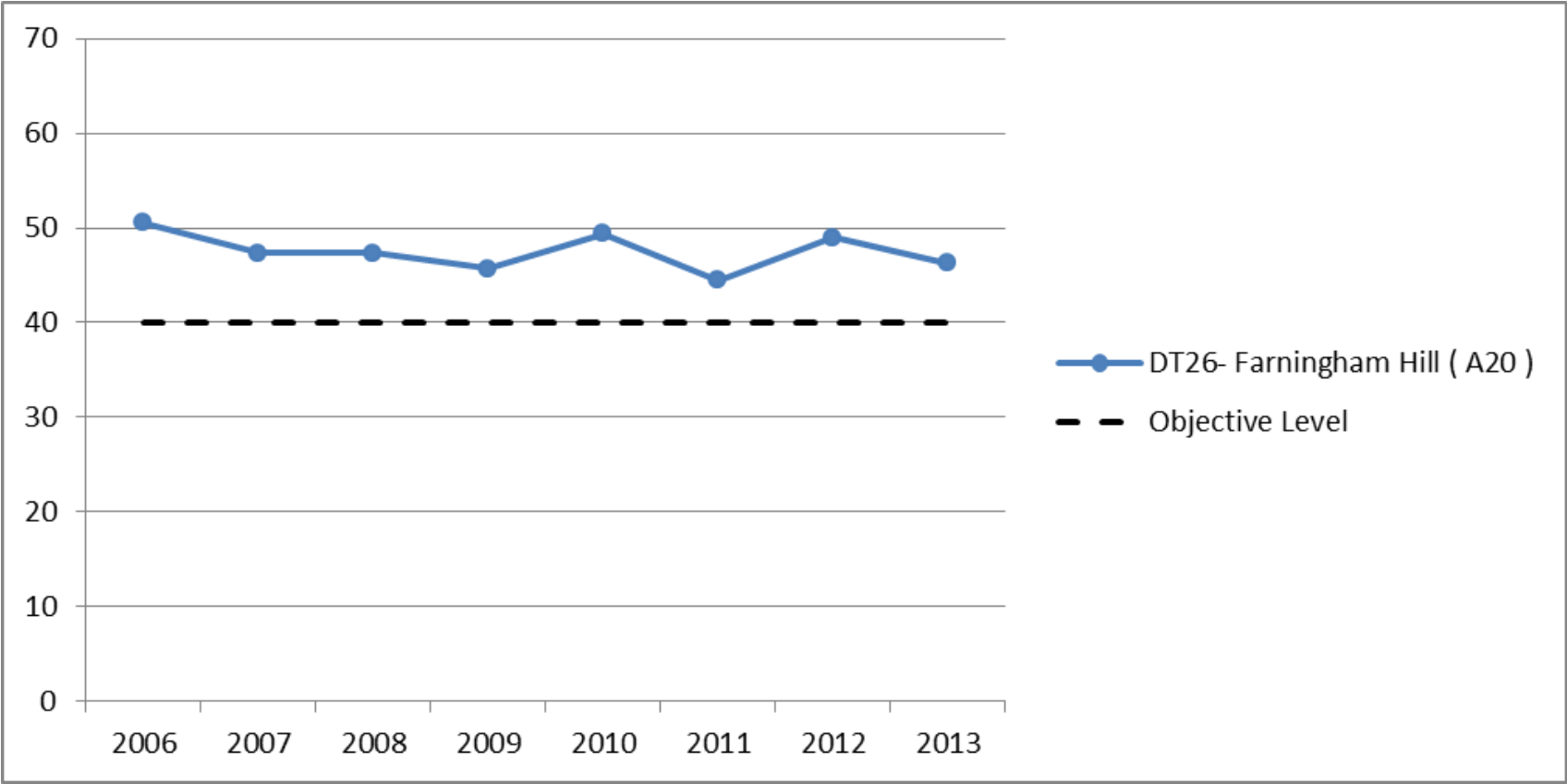
Westerham



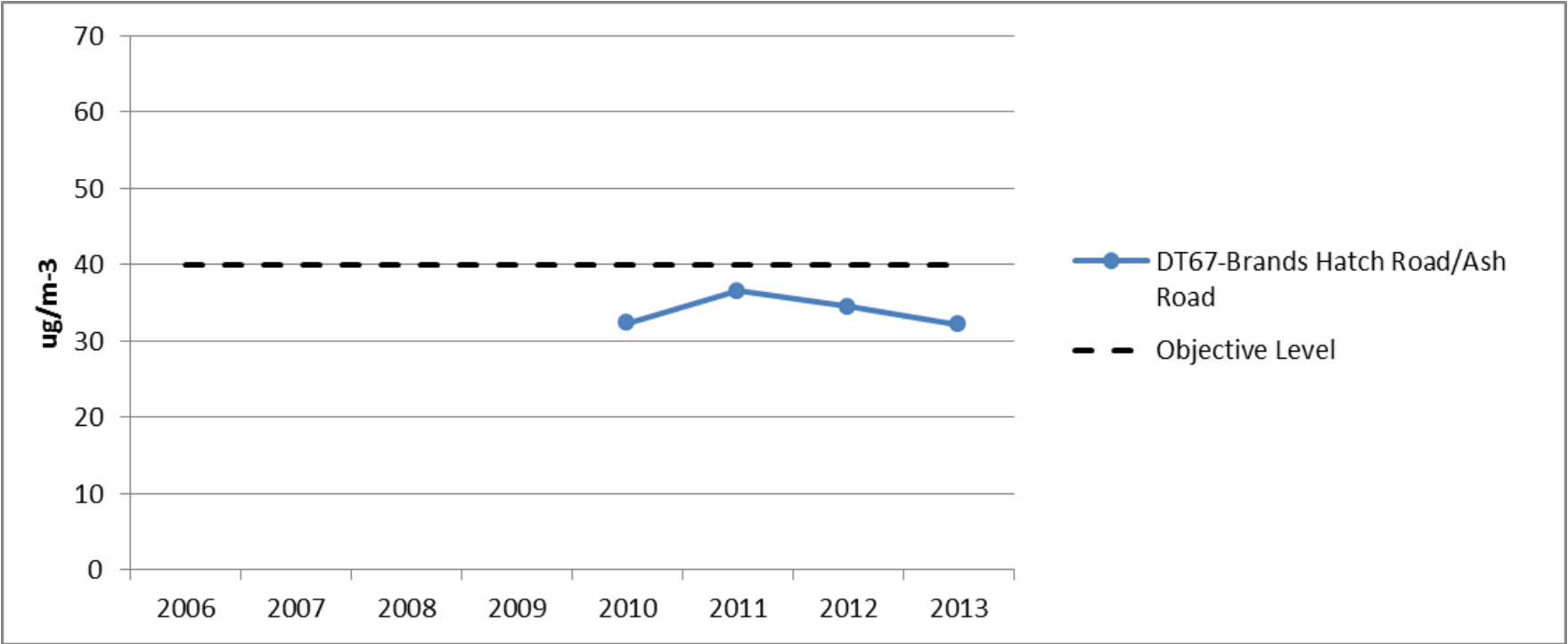
Swanley



Farningham



West Kingsdown



1.6.2 Particulate Matter (PM₁₀)Table 2.7 Results of Automatic Monitoring for PM₁₀: Comparison with Annual Mean Objective

Site ID	Site Type	Within AQMA?	Valid Data Capture for Monitoring Period % ^a	Valid Data Capture 2013 % ^b	Confirm Gravimetric Equivalent (Y or N/A)	Annual Mean Concentration (µg/m ³)				
						2009* ^c	2010* ^c	2011* ^c	2012* ^c	2013 ^c
CM1	Urban Background	N	97	97	Y	20	20	23	19	20
CM2	Roadside	Y	96	96	Y	23	23	25		22

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

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

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

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

* Annual mean concentrations for previous years are optional

Figure 2.5 Trends in Annual Mean PM₁₀ Concentrations

A trend chart providing PM₁₀ annual mean results over the past 5 years (or more if available) may be inserted here. Please discuss any trends shown.

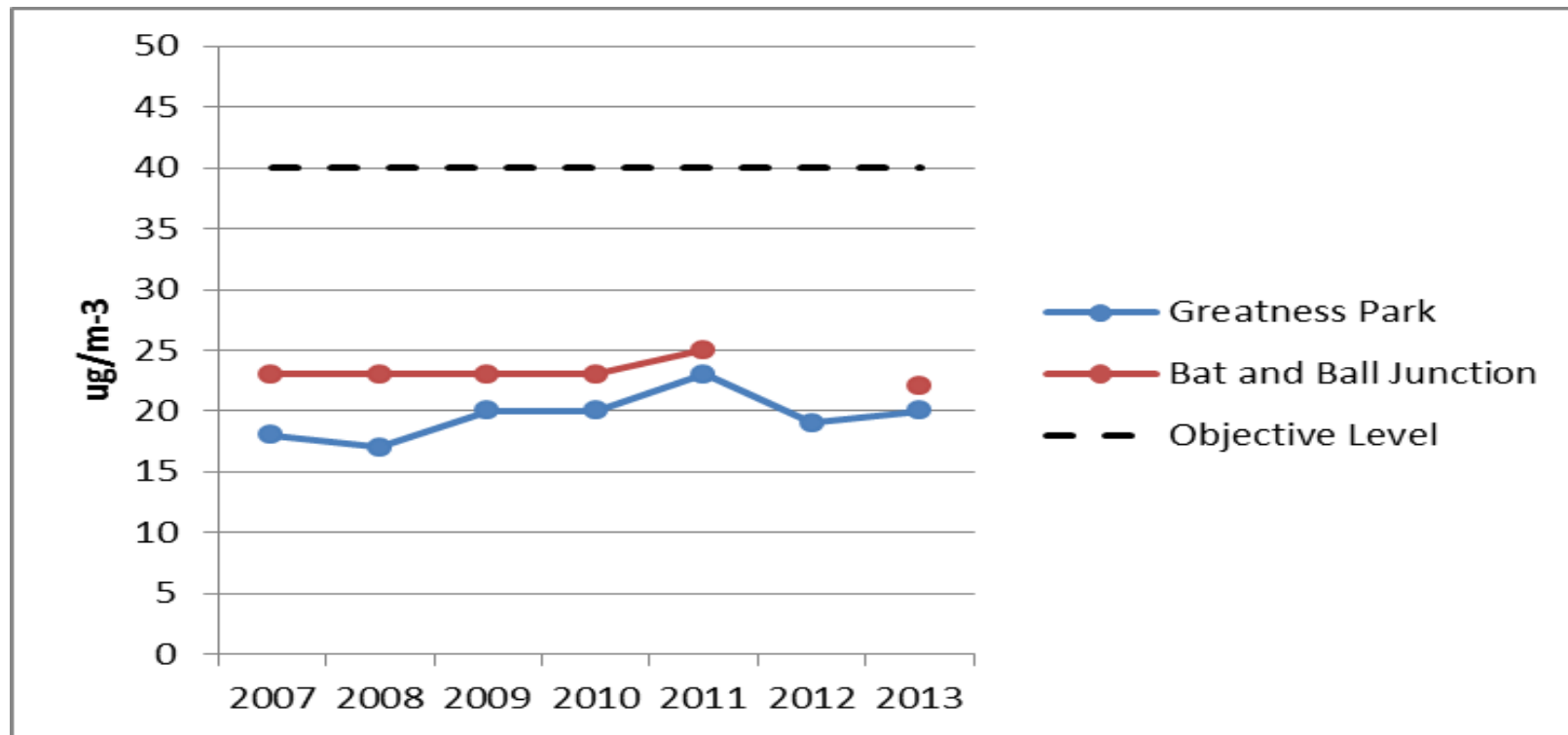


Table 2.8 Results of Automatic Monitoring for PM₁₀: Comparison with 24-hour Mean Objective

Site ID	Site Type	Within AQMA?	Valid Data Capture for Monitoring Period % ^a	Valid Data Capture 2013 % ^b	Confirm Gravimetric Equivalent (Y or N/A)	Number of Daily Means > 50µg/m ³				
						2009* ^c	2010* ^c	2011* ^c	2012* ^c	2013 ^c
CM1	Urban Background	N	97	97	Y	5	1	15	9	4
CM2	Roadside		96	96	Y	4	2	21		8

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

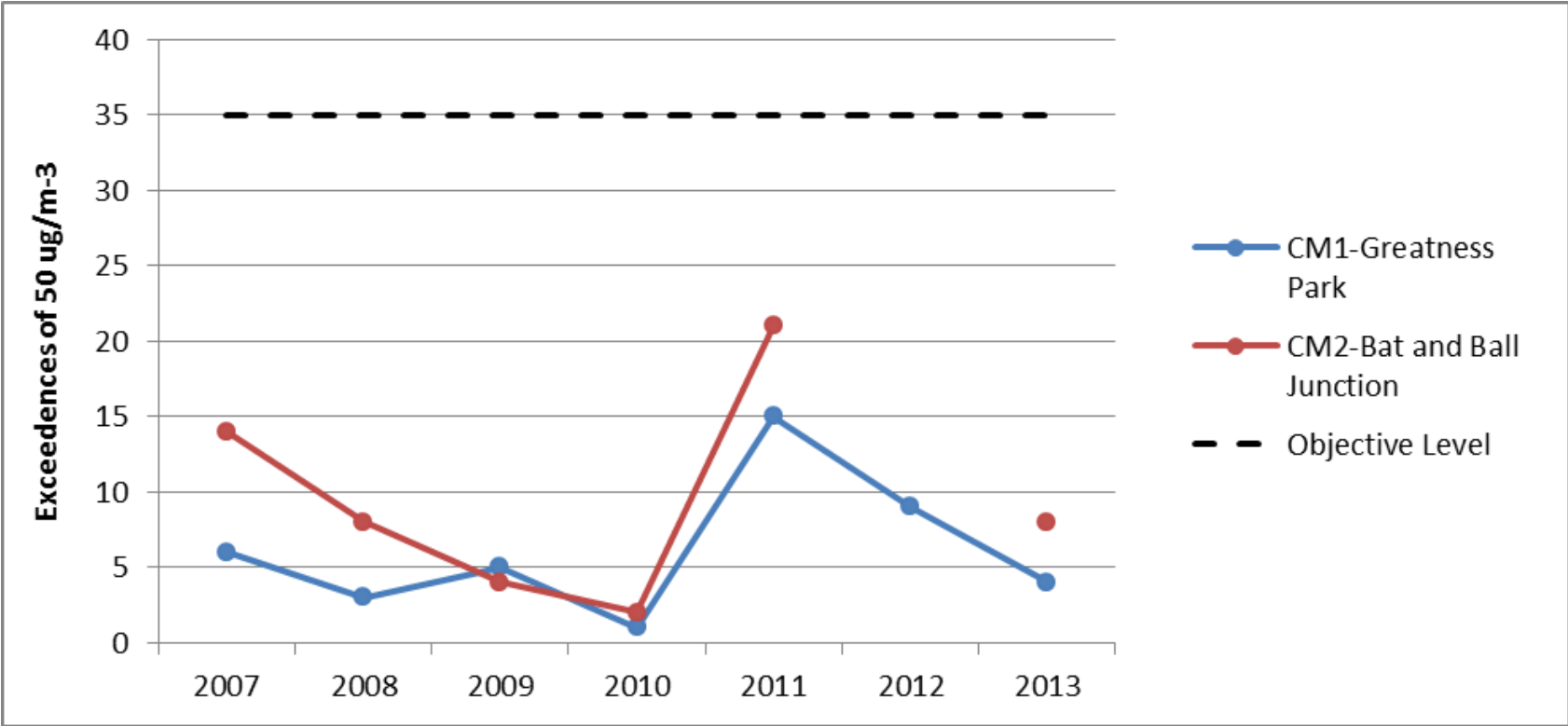
^a i.e. data capture for the monitoring period, in cases where monitoring was only carried out for part of the year

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

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

* Number of exceedences for previous years is optional

Figure 2.6 Trends in PM₁₀ Comparison with 24-hour Mean Objective



...

1.6.3 Other Pollutants Monitored

Ozone

This is monitored at Greatness Background Site (CM1) only.

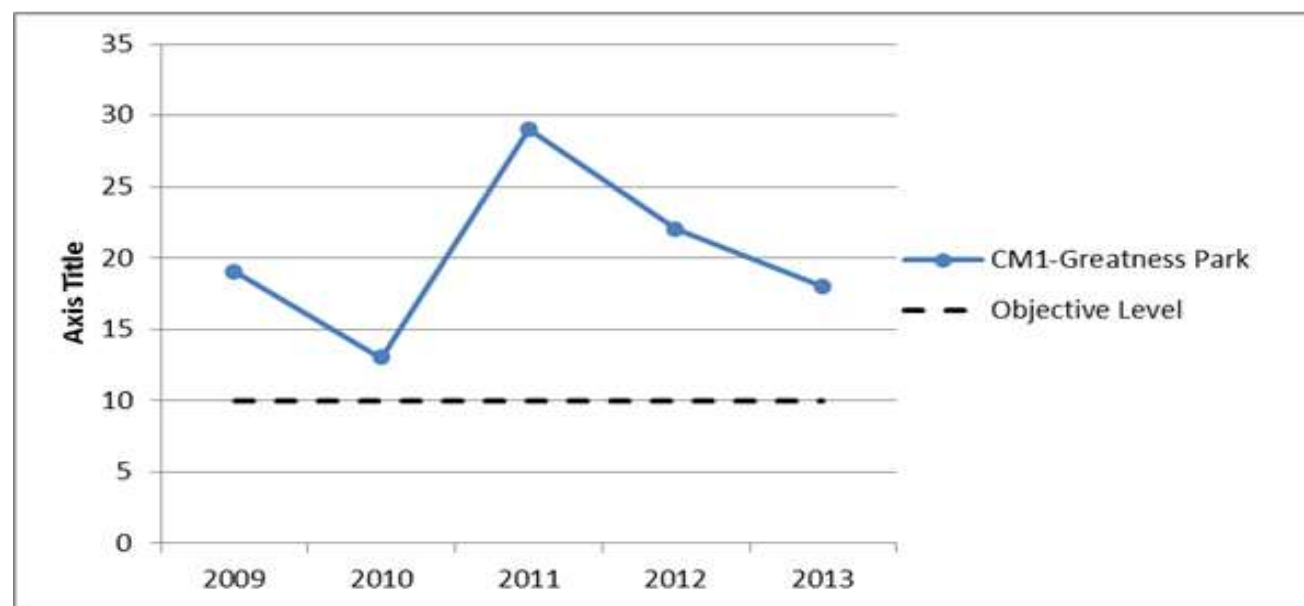
The air quality strategy objective is that the 8 hour mean $100 \mu\text{g}/\text{m}^3$ is not exceeded more than ten days per year.

In 2013 there were 18 days when the rolling 8 hour mean exceeded $100 \mu\text{g}/\text{m}^3$.

Table 2.9 Results of Automatic Monitoring for Ozone Comparison with 8-hour Mean Objective

Site ID	Site Type	Within AQMA?	Valid Data Capture for Monitoring Period % ^a	Valid Data Capture 2013 % ^b	8 hour mean exceeded (100 ug/m-3).				
					2009* c	2010* c	2011* c	2012* c	2013 ^c
CM1	Urban Background	N	83	83	19	13	29	22	18

Figure 2.7 Trends in Ozone Comparison with 8-hour Mean Objective



1.6.4 Summary of Compliance with AQS Objectives

AQMA 1- M20 (Junction 3 M25 to District Boundary with Tonbridge and Malling & part of A20)

The District Council has examined the results from monitoring along the M20 and A20 at Farningham. Concentrations within AQMA 1 still exceed the 40ug/m³ for NO₂ at Farningham Hill (DT26). Concentrations of NO₂ have in 2013 fallen below 40ug/m³ at Farningham Hill Road (DT81) and Wadard Terrace, Button Street (DT14). AQMA 1 shall remain.

AQMA 2- M25 (Kent/ Surrey Border to District Boundary with Dartford)

The results from monitoring along the M25 show that concentrations of NO₂ within AQMA 2 continue to exceed 40ug/m³. There has however been a reduction in the measured concentration of NO₂ thought to have resulted from works (including speed restrictions) being undertaken to introduce rapid widening in this section of the M25. AQMA 2 will remain in place.

AQMA 3- M26 (Junction 5 M25 to District Boundary with Tonbridge and Malling)

AQMA 3 will remain

AQMA 4- A20 (Swanley Bypass)

AQMA 4 will remain

AQMA 5A- London Road from Riverhead to Dunton Green

The District Council has examined the results from monitoring along the London Road from Riverhead to Dunton Green. Concentrations of NO₂ have in 2013 fallen below 40ug/m³ at 57 London Road (DT54). NO₂ concentrations remain below 40 ug/m³ at the Miners Arms, London Road (DT43).

Diffusion tube data from 193 London Road (DT57) has been excluded from the study owing to a number of inconsistent and suspicious results resulting in poor data capture for 2013.

AQMA 6- M25 (Junction 5 to Kent/ Surrey Border) PM₁₀

AQMA 6 will remain unchanged

AQMA 8- B2173 Swanley

Concentrations of NO₂ within AQMA 8 continue to exceed 40ug/m³ at Wested Lane (DT13), Batholomew Way (DT39), London Road 1 (DT40) and London Road 2 (DT83). Therefore AQMA 8 will remain.

AQMA10A- High Street and London Road, Sevenoaks

The District Council has examined the results from monitoring in High Street and London Road, Sevenoaks. Concentrations within AQMA 10A still exceed the 40ug/m³ for NO₂ at High Street South 1 (DT2), High Street South 2 (DT27) and High Street North 2 (DT28). Therefore AQMA 10 should remain. Concentrations of NO₂ have fallen below 40ug/m³ at 130 London Road (DT51).

Concentrations of NO₂ at 142 London Road (DT52), outside of the existing AQMA10A exceed 40ug/m³.

However this diffusion tube location is not representative of relevant exposure and when this data is corrected to predict the annual mean NO₂ concentration at the nearest receptor the annual NO₂ concentration was found to be below the action level (see figure 2.8)

Figure 2.8- Predicted NO₂ concentration at nearest receptor DT52.

This calculator allows you to predict the annual mean NO₂ concentration for a location ("receptor") that is close to a monitoring site, but nearer or further the kerb than the monitor. The next sheet shows your results on a graph.

Enter data into the yellow cells

Step 1	How far from the KERB was your measurement made (in metres)?	(Note 1)	2.74	metres
Step 2	How far from the KERB is your receptor (in metres)?	(Note 1)	9.62	metres
Step 3	What is the local annual mean background NO ₂ concentration (in µg/m ³)?	(Note 2)	16.20274	µg/m ³
Step 4	What is your measured annual mean NO ₂ concentration (in µg/m ³)?	(Note 2)	43	µg/m ³
Result	The predicted annual mean NO ₂ concentration (in µg/m ³) at your receptor	(Note 3)	34.5	µg/m ³

Note 1: In some cases the term "kerb" may be taken to be the edge of the trafficked road - see the FAQ at <http://laqm2.defra.gov.uk/FAQs/Monitoring/Location/index.htm> for further details. Distances should be measured horizontally from the kerb and assumes that the monitor and receptor have similar elevations. Each distance should be greater than 0.1m and less than 50m (In practice, using a value of 0.1m when the monitor is closer to the kerb than this is likely to be reasonable). The receptor is the location for which you wish to make your prediction. The monitor can either be closer to the kerb than the receptor, or further from the kerb than the receptor. The closer the monitor and the receptor are to each other, the more reliable the prediction will be. When your receptor is further from the kerb than your monitor, it is recommended that the receptor and monitor should be within 20m of each other. When your receptor is closer to the kerb than your monitor, it is recommended that the receptor and monitor should be within 10m of each other.

Note 2: The measurement and the background must be for the same year. The background concentration could come from the national maps published at www.airquality.co.uk, or alternatively from a nearby monitor in a background location.

Note 3: The calculator follows the procedure set out in Box 2.3 of LAQM TG(09). The results will have a greater uncertainty than the measured data. More confidence can be placed in results where the distance between the monitor and the receptor is small than where it is large.


Issue 4: 25/01/11. Created by Dr Ben Marner; Approved by Prof Duncan Laxen. Contact: benmarner@aqconsultants.co.uk

The District Council has identified a likely exceedance of the NO₂ hourly mean objective at Sevenoaks High Street 1 (DT2). A new AQMA will be declared to cover this exceedance.

The diffusion tube at 4A St John's Hill (DT90) recorded 40.9µg/m³. This is however a kerb side monitoring location and is not representative of relevant exposure. Using the NO₂ concentration and distance from roads calculator the projected levels at the nearest relevant exposure is calculated as 33.9 µg/m³, so no further action is required (see figure 2.10).

Figure 2.10- Predicted NO₂ concentration at nearest receptor DT90.

This calculator allows you to predict the annual mean NO₂ concentration for a location ("receptor") that is close to a monitoring site, but nearer or further the kerb than the monitor. The next sheet shows your results on a graph.



Enter data into the yellow cells

Step 1	How far from the KERB was your measurement made (in metres)?	(Note 1)	0.4	metres
Step 2	How far from the KERB is your receptor (in metres)?	(Note 1)	2.5	metres
Step 3	What is the local annual mean background NO₂ concentration (in µg/m³)?	(Note 2)	18.2789	µg/m ³
Step 4	What is your measured annual mean NO₂ concentration (in µg/m³)?	(Note 2)	41	µg/m ³
Result	The predicted annual mean NO₂ concentration (in µg/m³) at your receptor	(Note 3)	33.9	µg/m ³

Note 1: In some cases the term "kerb" may be taken to be the edge of the trafficked road - see the FAQ at <http://aqm2.defra.gov.uk/FAQs/Monitoring/Location/index.htm> for further details. Distances should be measured horizontally from the kerb and assumes that the monitor and receptor have similar elevations. Each distance should be greater than 0.1m and less than 50m (In practice, using a value of 0.1m when the monitor is closer to the kerb than this is likely to be reasonable). The receptor is the location for which you wish to make your prediction. The monitor can either be closer to the kerb than the receptor, or further from the kerb than the receptor. The closer the monitor and the receptor are to each other, the more reliable the prediction will be. When your receptor is further from the kerb than your monitor, it is recommended that the receptor and monitor should be within 20m of each other. When your receptor is closer to the kerb than your monitor, it is recommended that the receptor and monitor should be within 10m of each other.

Note 2: The measurement and the background must be for the same year. The background concentration could come from the national maps published at www.airquality.co.uk, or alternatively from a nearby monitor in a background location.

Note 3: The calculator follows the procedure set out in Box 2.3 of LAQM TG(09). The results will have a greater uncertainty than the measured data. More confidence can be placed in results where the distance between the monitor and the receptor is small than where it is large.

Issue 4: 25/01/11. Created by Dr Ben Marner; Approved by Prof Duncan Laxen. Contact: benmarner@aqconsultants.co.uk

AQMA 13- A25 (Westerham, Brasted, Sundridge, Bessells Green, Riverhead, Bat and Ball, Seal)

The District Council has examined the results from monitoring along the A25.

Concentrations within AQMA 13 still exceed the 40ug/m³ for NO₂ at several locations.

Within Westerham the 40ug/m³ for NO₂ is being exceeded at High Street (DT24) and at Market Square (DT26).

At Brasted the 40ug/m³ for NO₂ is being exceeded at West End (DT84) and at Chart Lane (DT85). The concentration of NO₂ at Chart Lane is showing a trend of steady increase and should this continue in 2014 a likely exceedance of the NO₂ hourly mean objective may be indicated.

At Sundridge neither of the current diffusion tubes are exceeding 40ug/m³ although at 204 Main Road the measure concentration is close to the objective level.

At Bessells Green, 40ug/m³ NO₂ is being exceeded at Westerham Road (DT74) and 59 Westerham Road (DT86).

In Riverhead the objective level is being exceeded at all monitoring locations namely: Riverhead 2 (DT5), Riverhead 3 (DT6), 62 London Road (DT42) Worships Hill/ Witches Lane (DT76) and Bradbourne Vale Road South (DT87).

At Bat & Ball Junction 40ug/m³ NO₂ is being exceeded at Bat & Ball 1 (DT23), Bat & Ball 3 (DT31) and Bat & Ball 4 (DT32). NO₂ concentrations at Bat & Ball 3 and Bat & Ball 4 have fallen significantly from 2012 and no longer indicate a likely exceedance of the NO₂ hourly mean objective.

In Seal the objective level for NO₂ is being exceeded at High Street East 1 (DT7), High Street East 2 (DT33), and Seal Hollow Road/ A25 (DT35).

With consideration to the above areas, AQMA 13 will remain.

AQMA 14- Birchwood Road Junction, Swanley

The District Council has examined the results from monitoring at the Birchwood Road Junction, Swanley. Concentrations within the AQMA still exceed the 40ug/m³ for NO₂ at Jessamine Terrace (DT83) although levels are below the objective level at Pucknells Close (DT93), Birchwood Road Junction (DT94) and Malvern (DT95).

NO₂ concentrations at Jessamine Terrace (DT83) have fallen significantly from 2012 and no longer indicate a likely exceedance of the NO₂ hourly mean objective.

AQMA 14 will remain.

2 New Local Developments

The District Council has identified the following proposed identified local developments which may impact on air quality in the Local Authority area.

- Lidl Food Store, 80 London Road, Sevenoaks, Kent, TN13 2JD- • Erection of a Lidl supermarket with 70 car parking spaces, 12 covered secure bicycle spaces & 4 short term bicycle spaces and associated landscaping. Includes Section 6 funding of £5000 towards general air quality in locality.

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

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

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

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

3 Local / Regional Air Quality Strategy

Sevenoaks District Council does not have a local Air Quality Strategy. There are currently 9 Air Quality Management Areas within the District. We have developed an Air Quality Action Plan for which a progress report is provided within Chapter 9 of this document.

4 Planning Applications

The majority of major planning applications are subject to a section 106 agreement; this agreement includes compliance with the GLA code of practice for the control of dust and emissions from construction and demolition, best practice guidance.

This allows officers to request air quality from construction activity be monitored and ensure that best practice measures, such as damping down and wheel washing, are in place.

Planning applications that have been approved or are already under construction within the District include the following:

- West Kent Cold Storage Rye Lane Dunton Green Sevenoaks Kent TN14 5HD- A redevelopment comprising residential (up to 500 dwellings), a medical facility (500m²) together with associated access roads, car parking, footpaths and cycleways, landscaping and open space. Includes Section 6 funding of £32,000 towards implementing the objectives of Air Quality Action Plan within 2 mile radius of site (includes Riverhead area).
- 66 London Road Sevenoaks KENT TN13 1AT- Demolition of existing commercial building and the construction of a new two storey retail unit with undercroft parking and the construction of a separate four storey apartment block consisting of 22 one and two bedroom apartments, together with associated car parking, bin stores and cycle areas.
- Old Powder Mills Powder Mill Lane Leigh KENT TN11 9AN- Development of Old Powder Mills comprising (a) detailed permission for construction of 73 no. detached, semi detached and terraced houses with garaging and parking, play area, amenity space and open space and (b) outline permission, with all matters reserved except for access, for the provision of serviced land for a building of 1,582 sq m for B1(a) and B1(b) purposes

Sevenoaks District Council

- Sainsbury's Supermarket, Station Road, Edenbridge, TN8 6EL- Demolition of existing commercial buildings and the construction of a Sainsbury's supermarket with 295 car parking spaces and associated 8 pump petrol filling station and customer restaurant.
- Broom Hill Site London Road Swanley KENT- Outline application for mixed use development comprising demolition of existing employment building, erection of new employment building for employment use (B2/B8), erection of 39 dwellings (including not less than 16 affordable social houses), alterations to existing access in the vicinity of London Road and provision of an access road.

Planning applications which have been submitted and are awaiting determination within the District include the following:

- A Crematorium at Watercrofts Wood, Old London Road, Badgers Mount- Erection of Chapel/Crematorium, and provision of ancillary car park and erection of a woodman's shed.
- A Crematorium at Land North of Oak Tree Farm London Road Badgers Mount Halstead KENT TN14 7AB- Demolition of 1 buildings & a silo. Change of use of land for the erection of a new crematorium, memorial garden, fencing, landscaping and car parking, together with new entrance gateway off internal access road.

5 Air Quality Planning Policies

The District Council is in the process of developing its Local Development Framework (LDF). The Core Strategy of the LDF was adopted in February 2011.

The LDF Core Strategy seeks to direct development towards settlements and locations with the greatest range of jobs, shops and services and which provide the most viable opportunities for travel by modes other than the car. This provides an opportunity to reduce the need to travel by car and, therefore, cut congestion and air quality problems linked to vehicle emissions. The Allocations and Development Management Plan: Draft for Submission proposes sites for new development in accordance with these policies of the Core Strategy

Core Strategy Policy SP2 proposes that the design and location of new development will take account of the need to improve air quality in accordance with the Air Quality Action Plan 2009. Planning permission will be refused where unacceptable impacts on air quality cannot be overcome by mitigation.

Policy SP2 of the Core Strategy also sets out the District Council's support for measures to enhance the safety and convenience of public and community transport and improve facilities for cyclists and pedestrians.

Sevenoaks Local Plan includes policies which seek to reduce emissions across the district, these include:

- Focussing new development within the built confines of existing settlements to reduce the need to travel and therefore associated emissions.
- Retention of existing employment sites to provide residents the opportunity to work locally.
- Supporting public transport schemes and alternative forms of travel through the Sevenoaks Transport Strategy and Cycling Strategy.
- Retention and improvement of local services and facilities.

- Developments within areas of poor air quality or developments which may have an adverse impact on air quality will be required to include mitigation measures to reduce the impact to an acceptable level. Refuse permission for developments where the impacts remain unacceptable.
- Emerging policy which supports the inclusion of Electrical Vehicle Charging points within new development.

The Government published the National Planning Policy Framework in March 2012.

It states that 'planning decisions should ensure that any new development in Air Quality Management Areas is consistent with the local air quality action plan'.

6 Local Transport Plans and Strategies

A Sevenoaks District Strategy for Transport has been prepared by Kent County Council (KCC) with support from the District Council. It sets out a vision for the District's transport network for the period 2010 – 2026.

The Transport Strategy sets out a target to work towards achieving the national air quality objectives for nitrogen dioxides and particulates by implementing the actions and measures contained within the Air Quality Action Plan 2009. The Strategy seeks to prioritise investment in the local road network at existing or potential congestion hotspots, including Air Quality Management Areas. It also sets out a commitment to lobby the Highways Agency to consider air quality issues in decisions on the development of the motorway and trunk road network.

The Transport Strategy sets out Kent County Council's intention to resolve congestion primarily through development of other transport modes. It, amongst other things, sets out policies and draft proposals to improve railway stations and bus waiting facilities and proposes the development of a Sevenoaks Cycling Strategy.

Kent County Council has also prepared its Local Transport Plan (LTP) for the period 2011-2016. This was adopted in April 2011. The LTP proposes that one of the objectives for investment in transport during the period will be achieving 'a healthier and safer county', though, amongst other things, tackling poor air quality in Air Quality Management Areas. The LTP proposes that approximately £250,000 will be available for schemes specifically relates to air quality over the period.

It is not known if any funds for projects which would improve air quality in the Sevenoaks District will be available.

7 Climate Change Strategies

Climate Local Kent has now been approved by all local authorities in the county and in December 2013 the District Council adopted Climate Local Sevenoaks, which reflects wider Kent targets and commitments.

This is all being led by the Locality Board's Climate Change Working Group, which has superseded the previous LSP group.

Climate Local Sevenoaks has, in effect, become the District Council's new climate change strategy and sets the way forward. Progress report one is due for publication in November 2014.

8 Implementation of Action Plans

8.1 Introduction

The first Air Quality Action Plan 2006, covering AQMAs 1-6 was superseded by the 2009 Air Quality Action Plan. The 2009 Air Quality Action Plan incorporated the first 6 AQMAs and created a further 5 AQMAs.

In 2013 The District Council consolidated AQMAs 5, 9, 11 and 12 to form AQMA 13 and declared a further AQMA (AQMA14) for exceedences of NO₂ at Birchwood Road Swanley.

Of the nine current AQMAs, eight are declared for exceedences of Nitrogen Dioxide (NO₂) national objective levels and one for similar traffic related exceedance of the Fine Particles (PM₁₀) national objective.

The Air Quality Action Plan 2009 outlines a number of measures and actions which are aimed at reducing levels of air pollution within AQMAs and generally across the District. The Plan is measured via an annual air quality progress report which is submitted to Defra.

The District Council is committed to working towards improving the air quality in order to improve the quality of life of its residents.

Please see Table 9.1 Air Quality Action Plan Progress which summarises the results of the progress of the above action plan so far.

Additional Supporting Information regarding the progress of specific measures in the last 12 months.

Table 9.1 Action Plan Progress

No.	Measure	Focus	Lead Authority	Planning Phase	Implementation Phase	Indicator	Target Annual Emission Reduction in the AQMA	Progress to Date	Progress in Last 12 Months	Estimated Completion Date	Comments Relating to Emission Reductions
1	The Sevenoaks Joint Transport Board will continue to consider and review options and proposals made under the Traffic Management Act and the LTP as well as via the Member/Officer air quality working group and both liaise and lobby KCC Highways Services to establish scheme acceptance, prioritisation and funding	Consider major/quick win schemes within each AQMA's	The District Council; Head of Environmental and Operational Services; KCC	2009-13	2009-13	Number of schemes identified each year	Combined emission target of <0.4 µg/m ³ for overall measure				
		Consultation & prioritisation (KCC)		2009-13	2009-13	As above	As above				
		Funding identification		2009-13	2009-13	As above	As above				
2	The District Council will continue to consider the impact new developments have on air quality and take appropriate steps to minimise any increase in air pollution. This includes seeking	Implement policies/legislation which impacts on air quality	The District Council; Head of Development Services and Head of Environmental & Operational Services	2009-13	2009-13	Conditions applied	As above				
		Applying for and receiving Section 106 Funding for air quality measures (See also Action 4)		2009-13	2009-13	Number of relevant Section 106 agreements which come into operation	As above				

Sevenoaks District Council

No.	Measure	Focus	Lead Authority	Planning Phase	Implementation Phase	Indicator	Target Annual Emission Reduction in the AQMA	Progress to Date	Progress in Last 12 Months	Estimated Completion Date	Comments Relating to Emission Reductions
	Section 106 funding where appropriate	Promotion of Green Travel Plans (Also see Action 12)		2009-13	2009-13	Number of Green Travel Plans promoted within applications	As above				
		Ongoing planning application consultation process including Environmental Health		2009-13	2009-13	Continuing process	As above				
		Pre application discussions for relevant applications with Environmental		2009-13	2009-13	Number of large scale developments discussed	As above				
3	The District Council will continue to be an active participant in consultation processes and liaise with the Highways Agency to secure those improvements to the M25 considered most likely by the scenario testing to result in a reduction in pollutions levels within the motorway AQMAs	Retain regular contact and liaison with HA prior to and during any relevant works on the M25	Highways Agency; KCC; The District Council; Head of Environmental and Operational Services	2009-13 As necessary		Positive representation the District Council views.	Combined emission target of <0.4 µg/m³ for overall measure				
		Consult with HA regarding mitigation works when required		2009-13 As necessary		Mitigation measures agreed	As above				

Sevenoaks District Council

No.	Measure	Focus	Lead Authority	Planning Phase	Implementation Phase	Indicator	Target Annual Emission Reduction in the AQMA	Progress to Date	Progress in Last 12 Months	Estimated Completion Date	Comments Relating to Emission Reductions
4	Set up an internal working group to identify, implement and monitor air quality mitigation measures secured by Section 106 Agreement with respect to developments affecting the Riverhead and Dunton Green AQMA. The group, to also consider other Air Quality Section 106 agreements within the District	Establish an ongoing general S106 air quality liaison group between Development Control and Environmental Health	The District Council; Head of Development Control and Head of Environmental and Operational Services	2009-10	2011-13	Via submission of Air Quality and Action Plan Progress Report to Defra	Combined emission target of $<0.4 \mu\text{g}/\text{m}^3$ for overall measure				
		Specifically identify measures to be funded (West Kent cold Store Development – WKCS)		Commencement date unknown. Contribution to be paid prior to the occupation of the 250th dwelling within the development		Measures identified	As above				
		Establish Vehicle emissions testing policy (Tesco Development)		Commencement date unknown. Contribution to be triggered by occupation of development		Number of vehicles tested and incidence of positive action	As above				
5	For the KCC/SDC Member/officer air quality working group to make recommendations to the JTB regarding suitable traffic reducing proposals within the Riverhead	Regular review of AQMA This will include a Local AQMA audit based on feedback from the Air Quality Action Plan consultation	The District Council; Head of Environmental and Operational Services, KCC	2009-10	2011-13	Improvement in local air quality	Combined emission target of $<0.2\mu\text{g}/\text{m}^3$ for overall measure				

Sevenoaks District Council

No.	Measure	Focus	Lead Authority	Planning Phase	Implementation Phase	Indicator	Target Annual Emission Reduction in the AQMA	Progress to Date	Progress in Last 12 Months	Estimated Completion Date	Comments Relating to Emission Reductions
	and extended Dunton Green/London Road AQMA	Identification of quick win schemes within AQMA		2009	2010- 13	Numbers of Schemes identified each year	As above	Changes to pelican crossing signal timings on London Road, Sevenoaks, to improve traffic flow through A25 Riverhead		Summer 2014	As above
								Minor kerb alteration on west side of Amherst Hill just south of The Harvester restaurant exit to allow 2 lanes to form earlier.		Summer 2014	
								Alteration to parking bays and bus stop on the east side of London Road (southwards to A25 Maidstone Road) to allow 2 lanes to form earlier			
								Minor changes to centre line on London Road between A25 Maidstone Road and Bullfinch Lane.			
		Scoping of scheme		2009	2010- 13	As above	As above	Quick win discussions with KHS		Summer 2014	As above
		Reporting to JTB (Dependant on feasibility)		2009	2010- 13	As above	As above	New parking restrictions on London Road, Dunton Green that would improve traffic flow on London Road, Riverhead			
		Funding identification (Dependant on feasibility)		2009	2010- 13	As above	As above				

Sevenoaks District Council

No.	Measure	Focus	Lead Authority	Planning Phase	Implementation Phase	Indicator	Target Annual Emission Reduction in the AQMA	Progress to Date	Progress in Last 12 Months	Estimated Completion Date	Comments Relating to Emission Reductions
6	For the KCC/SDC Member/officer air quality working group to make recommendations to the JTB regarding suitable traffic reducing proposals within AQMA 8 Swanley Town Centre	Regular review of AQMA This will include a Local AQMA audit based on feedback from the Air Quality Action Plan consultation	The District Council; Head of Environmental and Operational Services, KCC	2009-10	2011-13	Improvement in local air quality	Combined emission target of <0.2µg/m³ for overall measure				Affects on emissions to be gauged by existing diffusion tube monitoring where possible
		Identification of quick win schemes within AQMA		2009-10	2011- 13	Scheme implemented and improvements made	As above	Minor adjustment of timing of pelican crossing on High Street – being looked at by KCC signals. Relocation of bus stop on the High Street (opposite Bevan Place) closer to Goldsel Road roundabout.		Still being reviewed, potentially in conjunction with S106 works for a nearby development	As above
		Scoping of scheme		2009	2011- 13	Feasibility of scheme	As above	Quick win discussions with KHS Alteration of Give Way line on Swanley Lane entry to roundabout – to be implemented by KCC with re-surfacing.		Expected later 2014 as part of a KCC scheme	As above
		Reporting to JTB (Dependant on feasibility)		2009	2011- 13	As above	As above				
		Funding identification (Dependant on feasibility)		2009	2011- 13	Successful funding options identified	As above				

Sevenoaks District Council

No.	Measure	Focus	Lead Authority	Planning Phase	Implementation Phase	Indicator	Target Annual Emission Reduction in the AQMA	Progress to Date	Progress in Last 12 Months	Estimated Completion Date	Comments Relating to Emission Reductions
7	For the KCC/SDC Member/officer air quality working group to make recommendations to the JTB regarding suitable traffic reducing proposals within AQMA 9 – Seal High Street	Regular review of AQMA This will include a Local AQMA audit based on feedback from the Air Quality Action Plan consultation	The District Council; Head of Environmental and Operational Services, KCC	2009	2010-13	Improvement in local air quality	Combined emission target of <0.2µg/m³ for overall measure				Affects on emissions to be gauged by existing diffusion tube monitoring where possible
		Identification of quick win schemes within AQMA		2009-10	2011- 13	Scheme implemented and improvements made	As above	The District Council have discussed with KCC Highways the possible cutting back of vegetation on south side of the High Street opposite School Lane to allow traffic to ease past turning vehicles.		KCC have identified that the suggested alterations would not be appropriate.	As above
		Scoping of scheme		2009	2011- 13	Feasibility of scheme	As above	As above	Quick win discussions with KHS continue KCC produced report form Consultants on suggested changes	As above	As above
		Reporting to JTB (Dependant on feasibility)		2009	2011- 13	As above	As above	As above	KCC have determined that the suggested alterations would not be appropriate	No further action	As above
		Funding identification (Dependant on feasibility)		2009	2011- 13	Successful funding options identified	As above				
8	For the KCC/SDC Member/officer air quality working group to make recommendations to the JTB regarding suitable traffic	Investigate proposal to create one way traffic system and other traffic management solutions	The District Council; Head of Environmental and Operational Services, KCC	2009- 10	2011- 13	Improvement in local air quality	Combined emission target of up to and >0.4µg/m³ for overall measure				

Sevenoaks District Council

No.	Measure	Focus	Lead Authority	Planning Phase	Implementation Phase	Indicator	Target Annual Emission Reduction in the AQMA	Progress to Date	Progress in Last 12 Months	Estimated Completion Date	Comments Relating to Emission Reductions
	reducing proposals within AQMA 7 – Sevenoaks High Street	Scoping of Scheme		2009-10	2011-13	Options considered	As above				
		Reporting to JTB		2009-10	2011-13	As above	As above				
		Funding Identification		2009-10	2011-13	Successful funding streams identified and scheme and/or alternative options programmed for implementation	As above				
		Undertake an additional Local AQMA audit based on feedback from the Air Quality Action Plan consultation		2009-10	2011-13	Improvement in local air quality	As above				
9	For the KCC/SDC Member/officer air quality working group to make recommendations to the JTB regarding suitable traffic reducing proposals within AQMA – 11 Westerham Town Centre	Regular review of AQMA This will include a Local AQMA audit based on feedback from the Air Quality Action Plan consultation	The District Council; Head of Environmental and Operational Services, KCC	2009-10	2011-13	Improvement in local air quality	Combined emission target of <0.2µg/m³ for overall measure				
		Identification of quick win schemes within AQMA		2009-10	2011-13	Scheme implemented and improvements made	As above				

Sevenoaks District Council

No.	Measure	Focus	Lead Authority	Planning Phase	Implementation Phase	Indicator	Target Annual Emission Reduction in the AQMA	Progress to Date	Progress in Last 12 Months	Estimated Completion Date	Comments Relating to Emission Reductions
		Scoping of scheme		2009	2011-13	As above	As above				
		Reporting to JTB (Dependant on feasibility)		2009	2011-13	As above	As above				
		Funding identification (Dependant on feasibility)		2009	2011-13	Successful funding options identified	As above				
10	For the KCC/SDC Member/officer air quality working group to continue to make recommendations to the JTB regarding suitable traffic flow measures on all legs of the Bat and Ball AQMA junction	Continue to investigate a range of traffic management solutions at the junction. This will include a Local AQMA audit based on feedback from the Air Quality Action Plan Consultation.	The District Council; Head of Environmental Operational Services, KCC	2009	2011-13	Improvement in local air quality	Combined emission target of up to and >0.4µg/m³ for overall measure	Initial scheme completed	Options continue to be explored SDC & KCC are working together on the re-surfacing of A25 Bradbourne Vale Road (approach to Bat & Ball) and a new parking scheme to reduce congestion on the A25	Junction improvements undertaken to be introduced Summer 2014	The earlier drop in Nox and PM10 emissions at the junction previously reported has not been sustained this year.
		Scoping of additional schemes		2009-10	2009-13	Feasible scheme or acceptable options	As above				
		Funding Identification		2009-10	2009-13	Successful funding streams identified and scheme and/or alternative options programmed for implementation	As above				

Sevenoaks District Council

No.	Measure	Focus	Lead Authority	Planning Phase	Implementation Phase	Indicator	Target Annual Emission Reduction in the AQMA	Progress to Date	Progress in Last 12 Months	Estimated Completion Date	Comments Relating to Emission Reductions
11	The Council will demonstrate best practice in the purchase and operation of its own vehicle fleet in order to cut harmful emissions where possible	Use of cleaner fuels	The District Council; head of Environmental and Operational Services	N/A	Now used in all diesel fuelled vehicles	Reduced emissions	Combined emission target of <0.08µg/m ³ for overall measure	Latest Sulphur free diesel fuels used in all commercial fleet vehicles.	On going renewal programme for vehicle fleet to aid reduction in fuel consumption and harmful emissions	Ongoing process	Indirect contribution
		Fitting particulate traps to larger diesel vehicles where practicable		N/A	When necessary	Number of vehicles with traps fitted	As above	Majority of fleet is either Euro 4, 5 or 6 emissions standard compliant	Cost/benefit justification for fitment of additional aftermarket particulate traps is no longer evident	Under review	As above
		Use of alternative fuels where practicable		N/A	Being kept under review	NA	As above	As above	All fleet vehicles continue to operate on zero sulphur diesel fuel. Use of alternative fuels is kept under review but fleet wide implementation is not operationally or financially viable.	As above	As above
		Regular emission testing of vehicles		2009-13	As required	Compliant vehicles	As above	As above	Commercial vehicle emissions testing is undertaken as part of vehicle performance diagnostics and annual test criteria	Ongoing process and function	As above

Sevenoaks District Council

No.	Measure	Focus	Lead Authority	Planning Phase	Implementation Phase	Indicator	Target Annual Emission Reduction in the AQMA	Progress to Date	Progress in Last 12 Months	Estimated Completion Date	Comments Relating to Emission Reductions
12	The District Council will continue to promote and publicise schemes including working with partners where appropriate to encourage a reduction in car use	Provision and promotion of Mini bus service to meet particular needs. Links to Sustainable Community Action Plan Aim 16.1	The District Council: Head of Community Development, Head of Environmental and Operational Services and Head of Financial Services; KCC, West Kent PCT; Voluntary groups and charities; Housing Associations, town and Parish Councils	2009-10	2011- 13	Use and extent of service provided	Combined emission target of <0.08µg/m ³ for overall measure	See adjacent section - 'progress in last 12 months'	Since 1st April 2011 following donation of the Council's mini-bus fleet charitable organisations have been providers of this local accessible transport.	Milestone achieved. Measure will no longer be applicable	Indirect contribution by reducing the amount of car journeys
		Private mini bus hire		2009-13	2009-13	Level of hire	As above	As above	Since the cessation of the Council's mini-bus service from April 2011 this in-house mini-bus hire provision has not been possible. Charitable organisations provide this service where practicable	As above measure will no longer be applicable	As above
		Encouraging taxis to use cleaner vehicles/fuels		2009-10	2011-13	Introduction of viable scheme	As above				
		Concessionary travel schemes		2009-13	2009-13	Monitoring number of permits issued per annum	As above				
		Promotion of walking groups Links to Sustainable Action Plan 16.3a		2009-13	2009-13	Monitoring success by numbers of groups established and maintained	As above	Currently there are 8 Walks in the District	Training taking place for additional walk leaders.	Ongoing process and function	Indirect contribution

Sevenoaks District Council

No.	Measure	Focus	Lead Authority	Planning Phase	Implementation Phase	Indicator	Target Annual Emission Reduction in the AQMA	Progress to Date	Progress in Last 12 Months	Estimated Completion Date	Comments Relating to Emission Reductions
		Introduction of School Travel Plans. Links to Sustainable Action Plan 16.3a		2009-10	2011-13	Monitoring number of active STPs in place	As above	All schools in the Sevenoaks District except 2 have travel plans	KCC has ended the initiative and funding has ceased	KCC has ended the initiative and funding has ceased	Indirect contribution by reducing the amount of potential car journeys
		Walking buses for schools Links to Sustainable Action Plan 16.3a		2009-10	2011-13	Annually increasing number of schools with walking buses	As above	Guidance for setting up a walking bus published on KCC Website. Partnership with Kent Messenger	Kent County Council Lead- No update received		As above
		Streets Ahead scheme Links to Sustainable Action Plan 16.3a		2009-13	2009-13	Promotion of scheme	As above	The Streets ahead scheme ended in 2010	N/A	N/A	N/A
		Development and promotion of workplace travel plans		2009-13	2009-13	Number of workplace travel schemes in place	As above				

Sevenoaks District Council

No.	Measure	Focus	Lead Authority	Planning Phase	Implementation Phase	Indicator	Target Annual Emission Reduction in the AQMA	Progress to Date	Progress in Last 12 Months	Estimated Completion Date	Comments Relating to Emission Reductions
13	Reducing congestion and improving air quality as a result through parking schemes	Encouraging the use of green vehicles	The District Council; Head of Environmental and Operational Services	2009-13	2009-13	Number of street permits issued	Combined emission target of $<0.08\mu\text{g}/\text{m}^3$ for overall measure	Two eco-friendly vehicles permits have been issued Free permits offered to electric, hybrid and dual-fuel vehicles to residents and commuters at no charge..	There has been no increase over the previous year, despite it being advertised on our application forms and website.	On-going process and function	Indirect contribution
		Provision of non-residential permits for Sevenoaks Town Centre		2009-13	2009-13	Number of permits issued	As above	Good progress - see adjacent section - 'progress in last 12 months'	Number of permits issued being maintained as currently at full allocation.	Ongoing process and function	As above. Also assists with reducing pollution from congestion in town centre
		Review parking restrictions in AQMAs		2009-10	2011- 13	Impact of parking and affect on traffic flows	As above	Continued enforcement of local parking restrictions	See items 5 to 10	2009-10	2011- 13
14	The District Council will promote a number of initiatives to reduce energy consumption, improve energy efficiency and recycling and	Carbon Reductions Management Plan Links to Sustainable Community Action Plan Action 10.1d	The District Council; Head of House, Head of Environmental and Operations Services and	2009-10	2011-13	Development of local actions plans addressing climate change.	Combined emission target of $<0.2\mu\text{g}/\text{m}^3$ for overall measure				

Sevenoaks District Council

No.	Measure	Focus	Lead Authority	Planning Phase	Implementation Phase	Indicator	Target Annual Emission Reduction in the AQMA	Progress to Date	Progress in Last 12 Months	Estimated Completion Date	Comments Relating to Emission Reductions
	develop its carbon management role	Continued development and progression of corporate working group. Links to Sustainable Community Action Plan Action 10.1	Head of Community Development: KCC (Eco-schools) and School Governing Bodies and the Energy Saving Trust advice centre.	2009-13	2009-13	As above	As above				
		Energy efficiency schemes. Links to Sustainable Community Action Plan Action 10.1		2009-13	2009-13	Percentage of local population involved in schemes and initiatives	As above	We are working with KCC to further develop the Green Deal framework and associated projects and programmes	We have also secured a grant of c£4m from DECC and this will enable us to deliver a retrofit scheme.	Ongoing process and function	Indirect contribution
		Promotion of Fuel Poverty initiative Links to Sustainable Community Action Plan Action 10.1		2009-13	2009-13	As above	As above	Fuel poverty is identified and addressed through multi-agency assessments including the District Council's own HERO scheme. The District Council's retrofit programmes continue to lower household bills and take residents out of fuel poverty. The District Council's in-house and external home improvement agency teams continue to work with older and vulnerable residents, both in identifying and reducing fuel poverty		Ongoing process and function	Indirect contribution

Sevenoaks District Council

No.	Measure	Focus	Lead Authority	Planning Phase	Implementation Phase	Indicator	Target Annual Emission Reduction in the AQMA	Progress to Date	Progress in Last 12 Months	Estimated Completion Date	Comments Relating to Emission Reductions
		Eco Schools Programme Links to Sustainable Community Action Plan Action 10.1c		2009-13	2009-13	Number of schools involved in the scheme	As above	9 schools have bronze awards, 15 silver and 5 the Green Flag award. 2 schools have installed PV panels, 1 school has improved insulation and 1 school has an energy generating turbine		Ongoing process and function	Indirect contribution
		Recycling Links to Sustainable Community Action Plan Action 10.2		2009-13	2009-13	Increase recycling	As above	Separate weekly collection of dry recycled and garden waste streams were consolidated at an annual performance target of 32%. The business paper and card collection initiative continues to develop, increasing recyclable material recovery while achieving a corresponding reduction in secondary handling and transport of general commercial waste hauled to landfill.		On going process and function	Indirect contribution
15	The District Council will continue to proactively enforce industrial control and nuisance legislation to minimise pollution emissions from these sources	Inspection and enforcement	The District Council: Head of Environmental and Operational Services	2009-13	2009-13	Internal Performance Indicators and compliance with statutory functions	Combined emission target of <0.08µg/m ³ for overall measure	In 2013 the Environmental Health Team dealt with 132 service requests relating to pollution. The majority of these service requests related to bonfires, but also included complaints of dust from domestic and commercial sources and domestic properties compliance with the Clean Air Act 1993 (The District Council undertook inspections of 16 industrial processes as required based on the risk based approach required by DEFRA.		Ongoing process and function	Indirect contribution to reducing overall pollution levels
		Ongoing promotion of composting schemes		2009-13	2009-13	Uptake of schemes	As above	The District Council continues to work with a private sector supplier to promote and offer local residents a composting bin and other products at competitive prices		Ongoing process and function	Indirect contribution

Sevenoaks District Council

No.	Measure	Focus	Lead Authority	Planning Phase	Implementation Phase	Indicator	Target Annual Emission Reduction in the AQMA	Progress to Date	Progress in Last 12 Months	Estimated Completion Date	Comments Relating to Emission Reductions
16	Continue to improve and raise the level of knowledge and publicity relating to air pollution	Review and expansion of information on website	The District Council: Head of Environmental and Operational Services and Head of Housing; The Energy Saving Trust advice centre.	2009-10	2011- 13	Completion of measure	Combined emission target of <0.08µg/m³ for overall measure				
		Promote efficient use of vehicles - Set up working group Explore different campaigns and strategies Draw up plan of action with timescales Continue to promote the Estac advice line and website		2009-10	2011-13	Successful involvement in number of schemes	As above				
		Continue to develop links with local health authority		2009-10	2011- 13	Successful partnership working	As above				
		Continue to be active participant of Kent and Medway Air Quality Partnership including membership of the health and air quality sub group		2009-13	2009-13	Continuing membership and involvement	As above				

Sevenoaks District Council

No.	Measure	Focus	Lead Authority	Planning Phase	Implementation Phase	Indicator	Target Annual Emission Reduction in the AQMA	Progress to Date	Progress in Last 12 Months	Estimated Completion Date	Comments Relating to Emission Reductions
17	The council will continue to undertake routine monitoring air pollution in existing AQMAs and locations around the District and increase the number of monitoring points as necessary	Continue real time monitoring	The District Council: Head of Environmental and Operational Services	2009-13	2009-13	Continuing submission of data to Defra and for technical analysis as required	N/A				
		Continue diffusion tube monitoring		2009-13	2009-13	As above	As above				
		Keep numbers and locations of diffusion tubes under regular review		2009-13	2009-13	As above	As above				

Additional supporting information on the above measures and progress towards their completion to be added here ...

9 Conclusions and Proposed Actions

9.1 Conclusions from New Monitoring Data

A number of sites throughout the district continue to show likely exceedance of the NO₂ annual mean objective. With the exception of 4A St Johns Hill, Sevenoaks (DT90) and 142 London Road, Sevenoaks (DT52), all of the sites indicating NO₂ levels in excess of 40ug/m³ are located within declared Air Quality Management Areas.

The predicted exceedances at DT90 and DT52 result from kerb side monitoring locations and are not representative of relevant exposure.

In the majority of locations diffusion tube monitoring indicates that NO₂ concentrations have fallen or remained broadly similar to those identified in 2012. Notable exceptions to this trend occurred at 20 London Road, Sevenoaks (DT49) in AQMA10 and at Chart Lane, Brasted (DT85), West End Brasted (DT84) and High Street, Westerham (DT24) in AQMA13.

The increase in NO₂ at DT49 may have resulted from increased traffic and lorry movements associated with the construction phase of the New Marks and Spencer development at 66 London Road, Sevenoaks.

The monitored increase in NO₂ along the A25 (AQMA13) may have resulted from increased traffic diverted/ avoiding works to complete rapid widening on the M25. The works on the M25 which included speed and lane restrictions may account for the significant reduction in NO₂ concentration monitored at Station Road, Brasted (DT12).

Measured NO₂ levels at High Street South 1 (DT2), Sevenoaks continue to exceed 60ug/m³ indicating a possible exceedance of the 200ug/m³ 1 hour mean during peak traffic hours (this is a congested canyon site). Similar exceedances identified in 2012 at Bat & Ball 3 (DT31), Bat & Ball 4 (DT32) and Jessamine Terrace, Birchwood Road, Swanley (DT83) have fallen below 60ug/m³ in 2013.

The District Council considers that it is likely that the 200ug/m³ 1 hour mean objective level is being exceeded at DT2 and intends to declare a new AQMA for this exceedance.

9.2 Conclusions relating to New Local Developments

A new Lidl Food Store has opened at 80 London Road, Sevenoaks. Whilst not currently within an AQMA, traffic using this development could adversely impact upon AQMA10A at London Road, Sevenoaks and AQMA13 at Riverhead. It is not considered that this development gives rise to the need for a detailed assessment at this time as the development replaces a former car showroom, workshop and private car park.

9.3 Other Conclusions

Start writing here...

9.4 Proposed Actions

The District Council proposes the following actions:

- To complete the installation of the continuous air quality monitoring station at Sevenoaks Quarry (CM3) and to commence monitoring of PM₁₀ as soon as possible.
- To undertake the detailed assessment of PM₁₀ from Sevenoaks Quarry as soon as possible
- To declare an Air Quality Management Area for exceedances of the 200ug/m³ 1 hour mean objective level at the Sevenoaks high Street South.

- To continue to implement the measures contained within the Air Quality Action Plan 2009

10 References

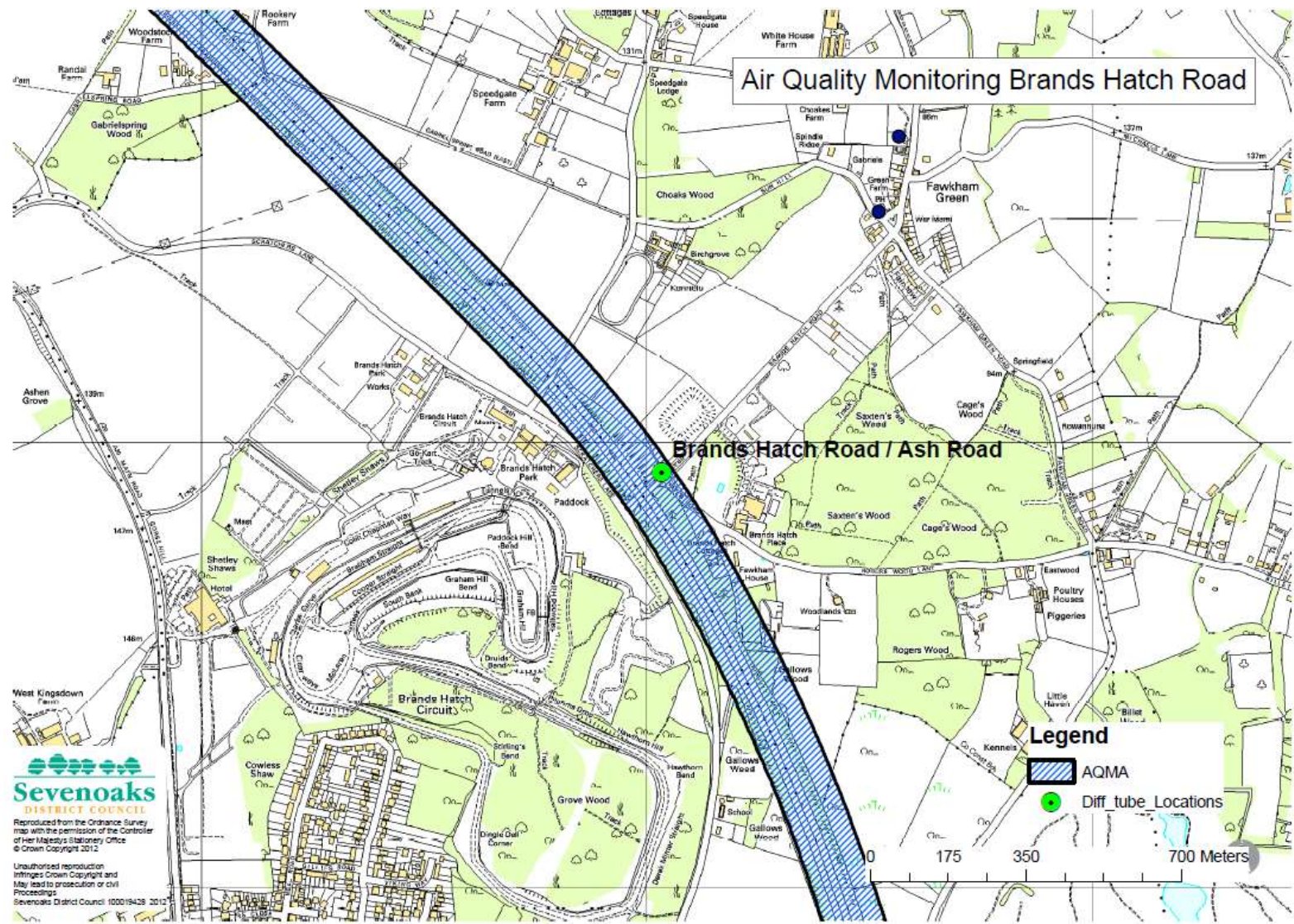
- LAQM. PRG (09). Part IV of the Environment Act 1995. Local Air Quality Management Progress Report Guidance. December 2009.
- LAQM.TG (09) Part IV of the Environment Act 1995. Local Air Quality Management Technical Guidance. January 2009.
- Sevenoaks District Council Air Quality Action Plan 2009
- Sevenoaks District Council Updating and Screening Assessment 2009
- Sevenoaks District Council Detailed Assessment of Nitrogen Dioxide at the Birchwood Road junction, Swanley

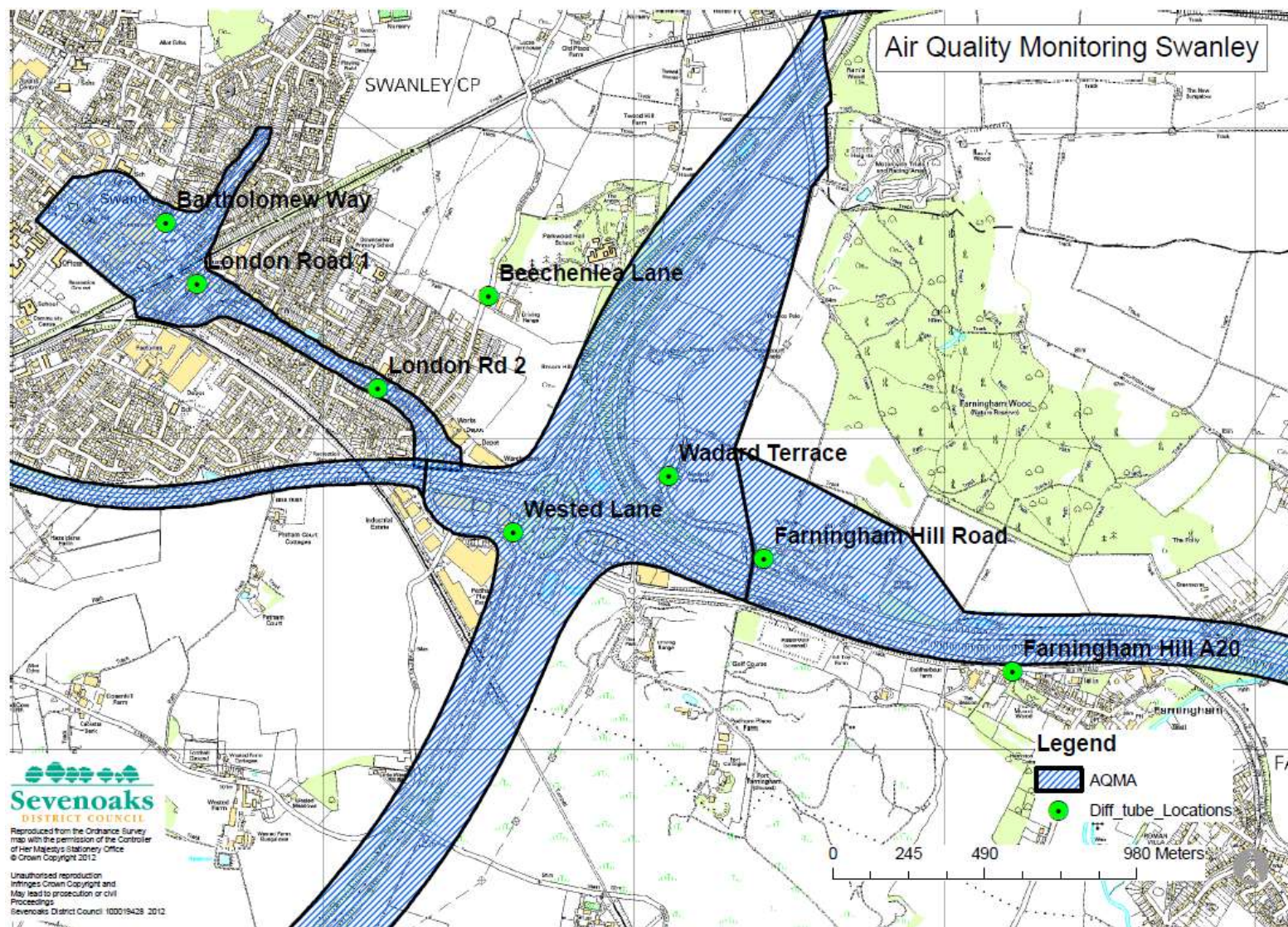
Appendices

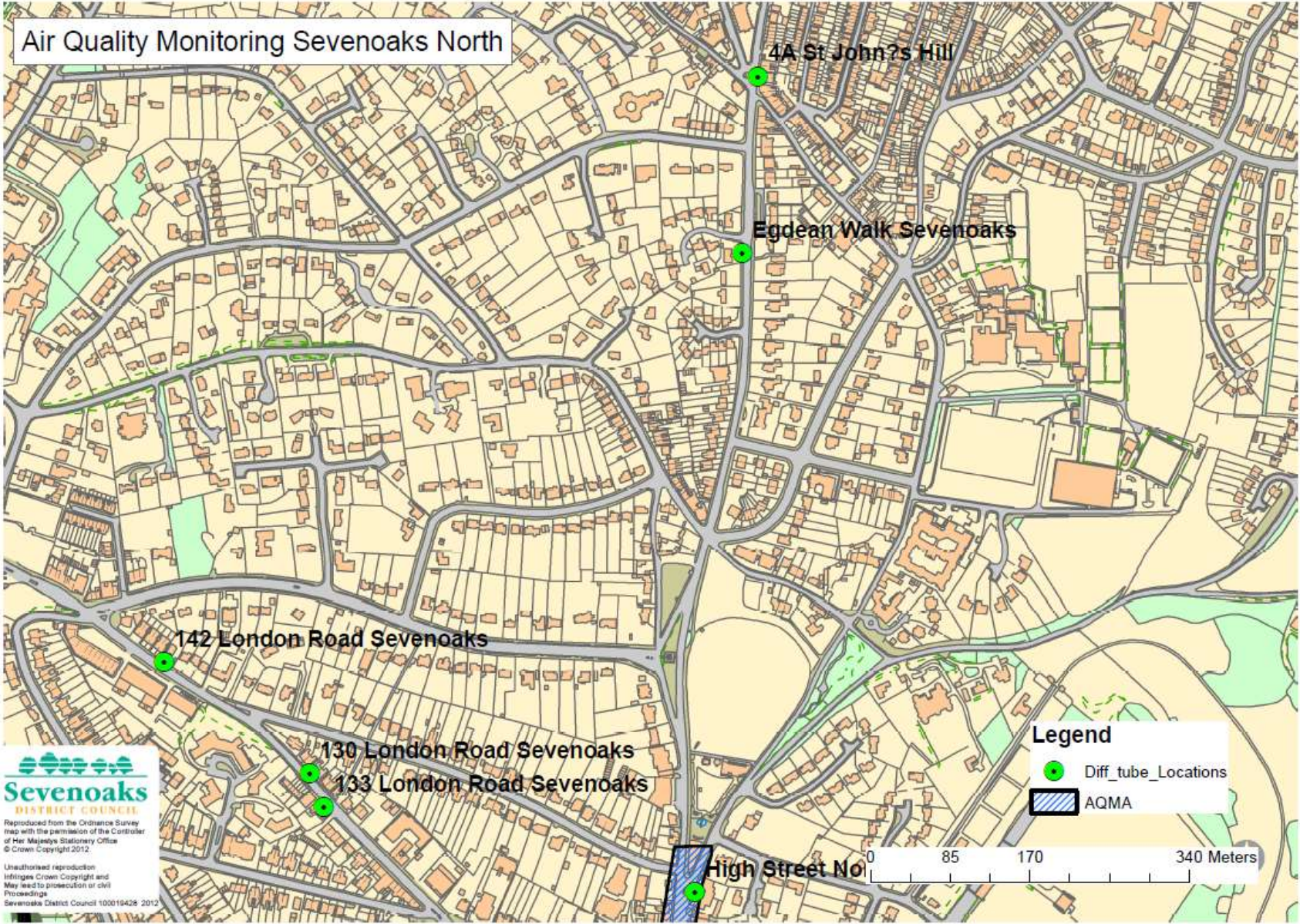
Appendix A: AQMA maps

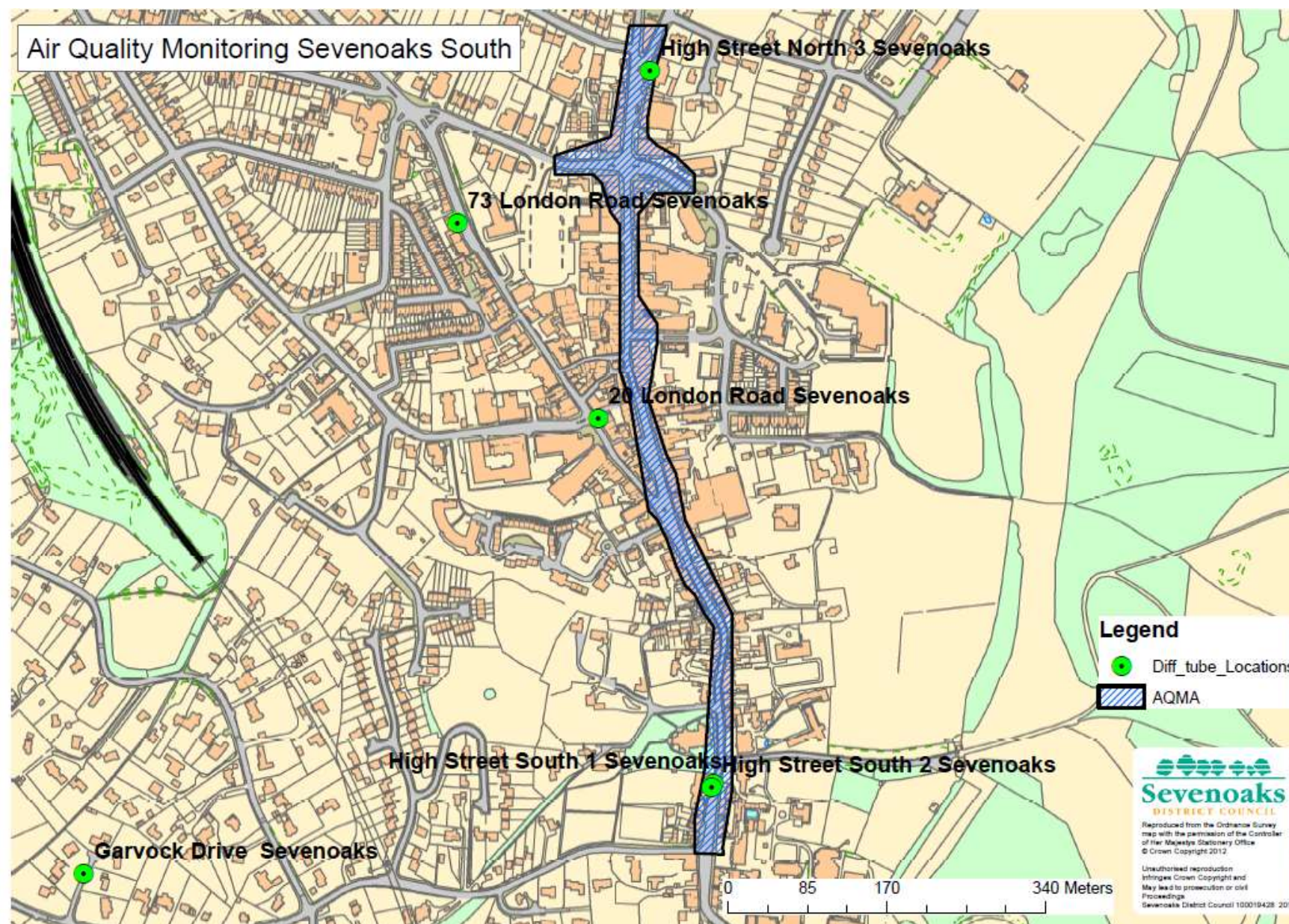
Appendix B: Quality Assurance / Quality Control (QA/QC) Data

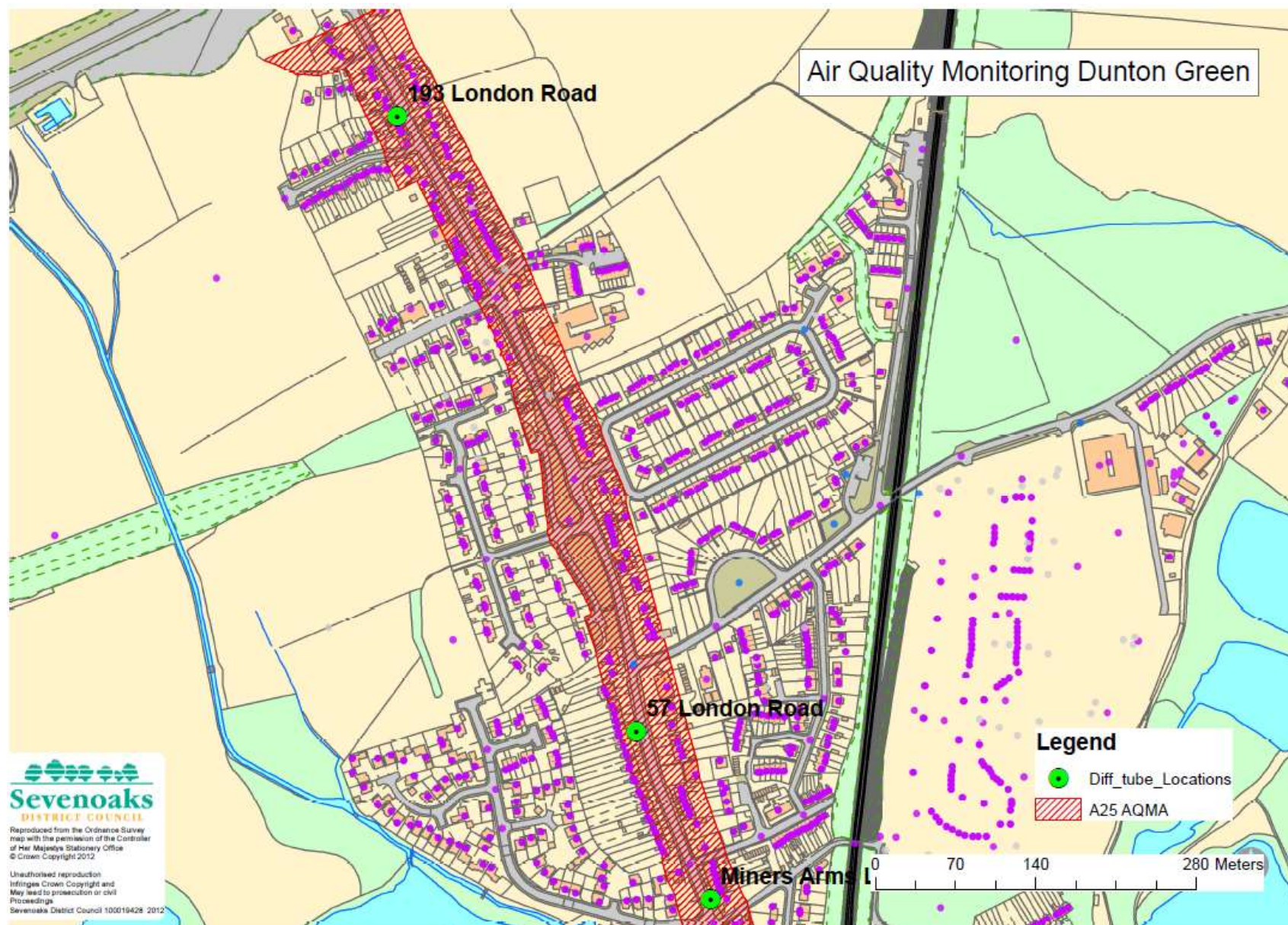
Appendix A

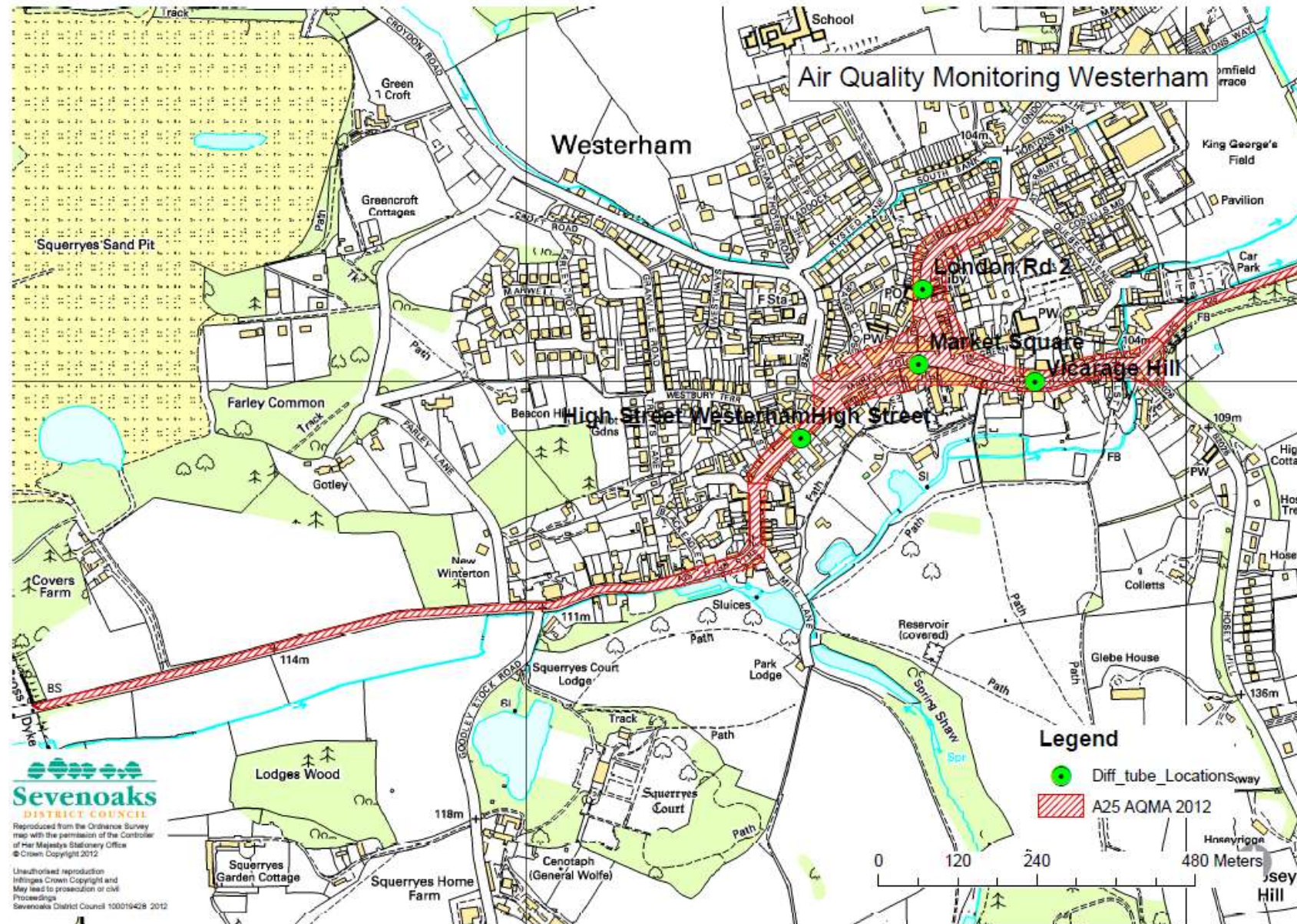


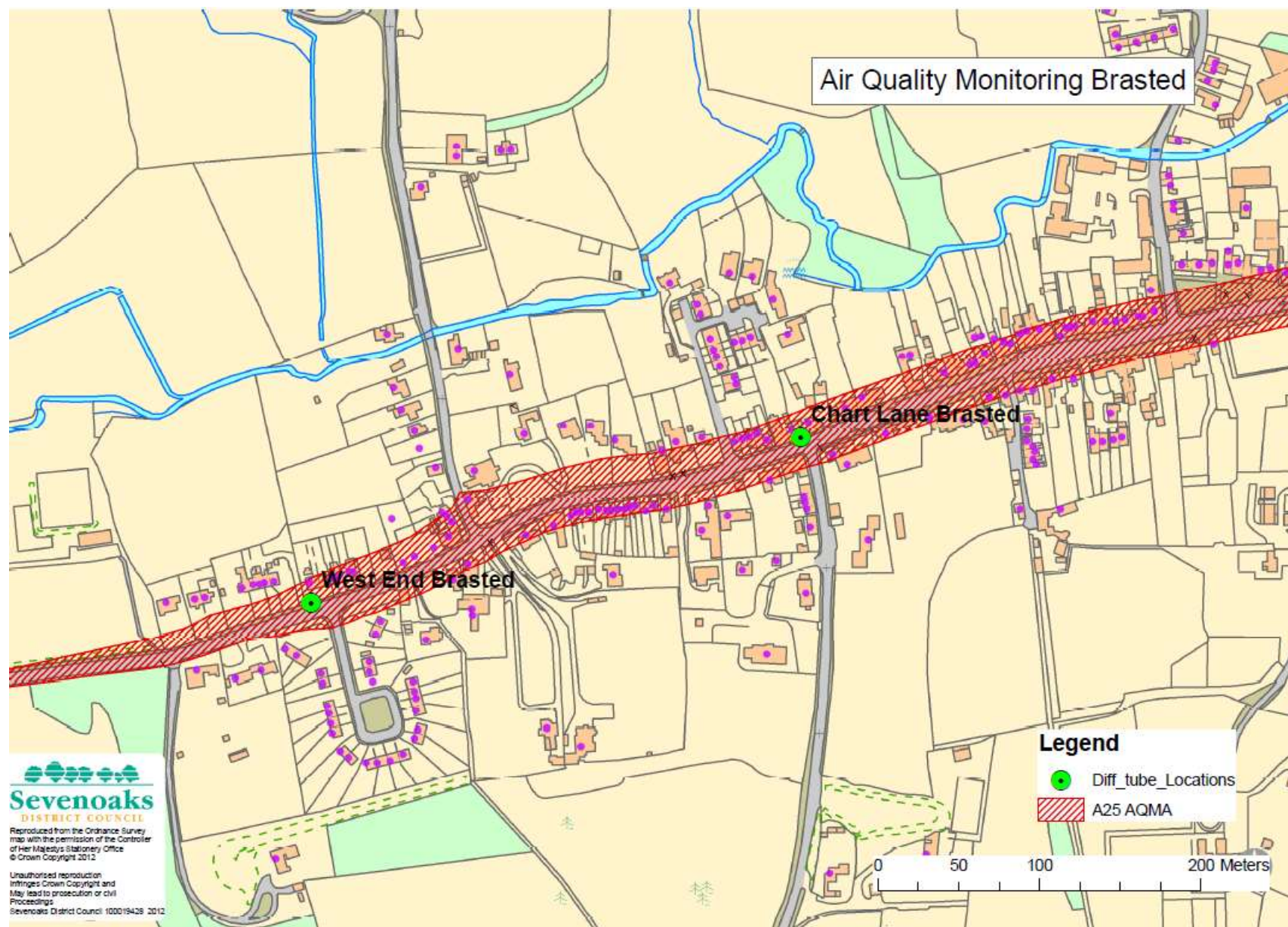


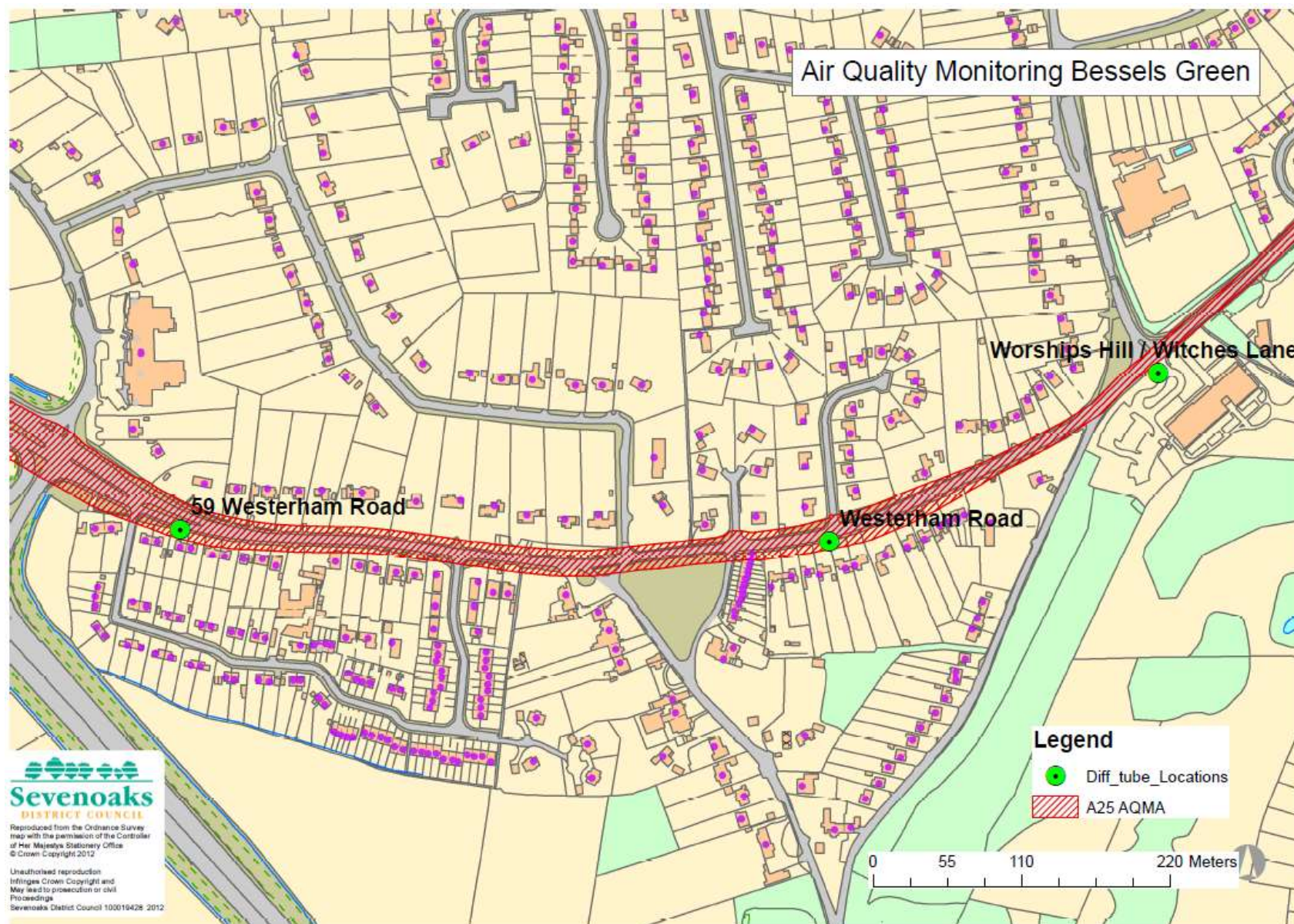


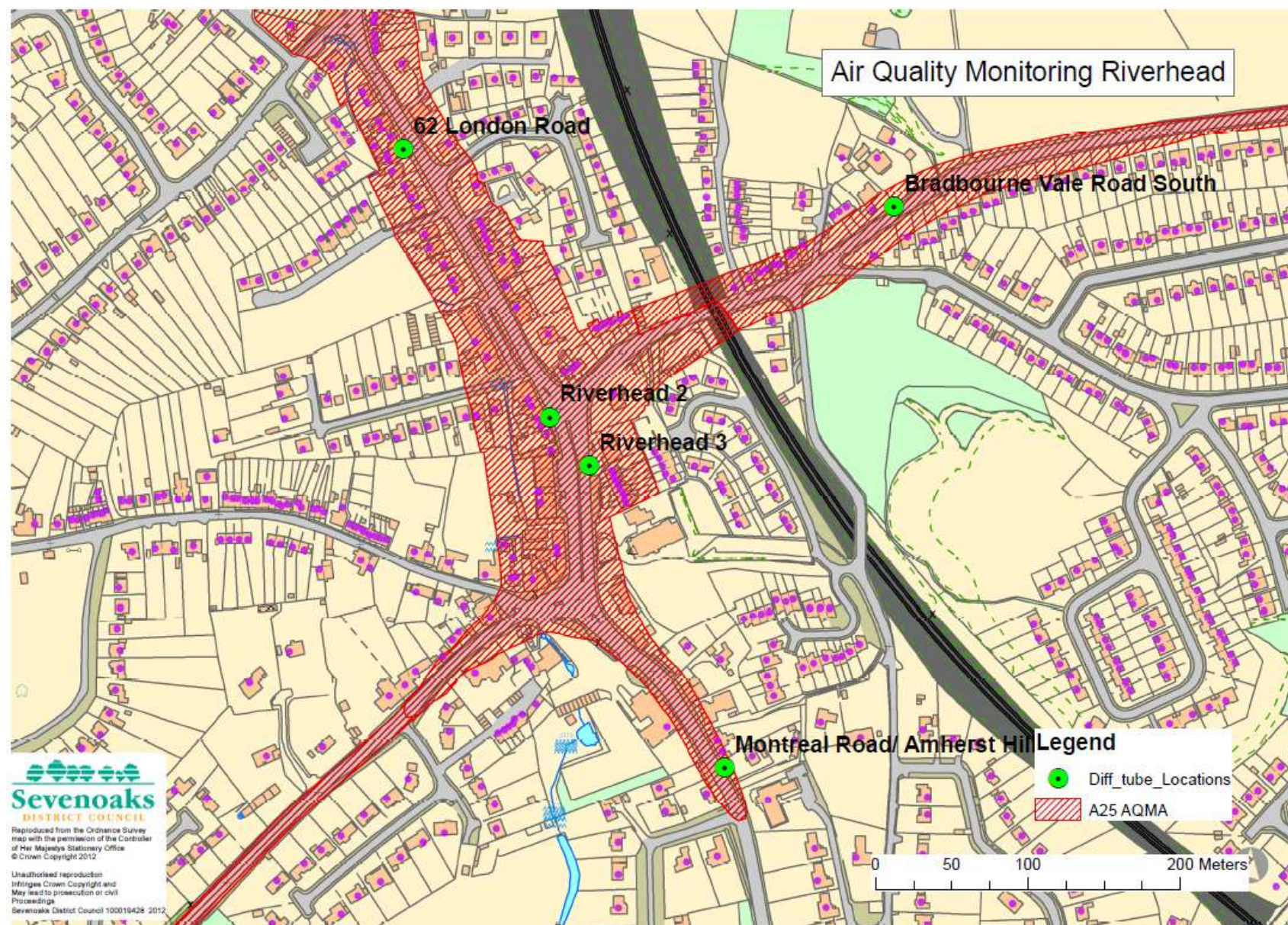


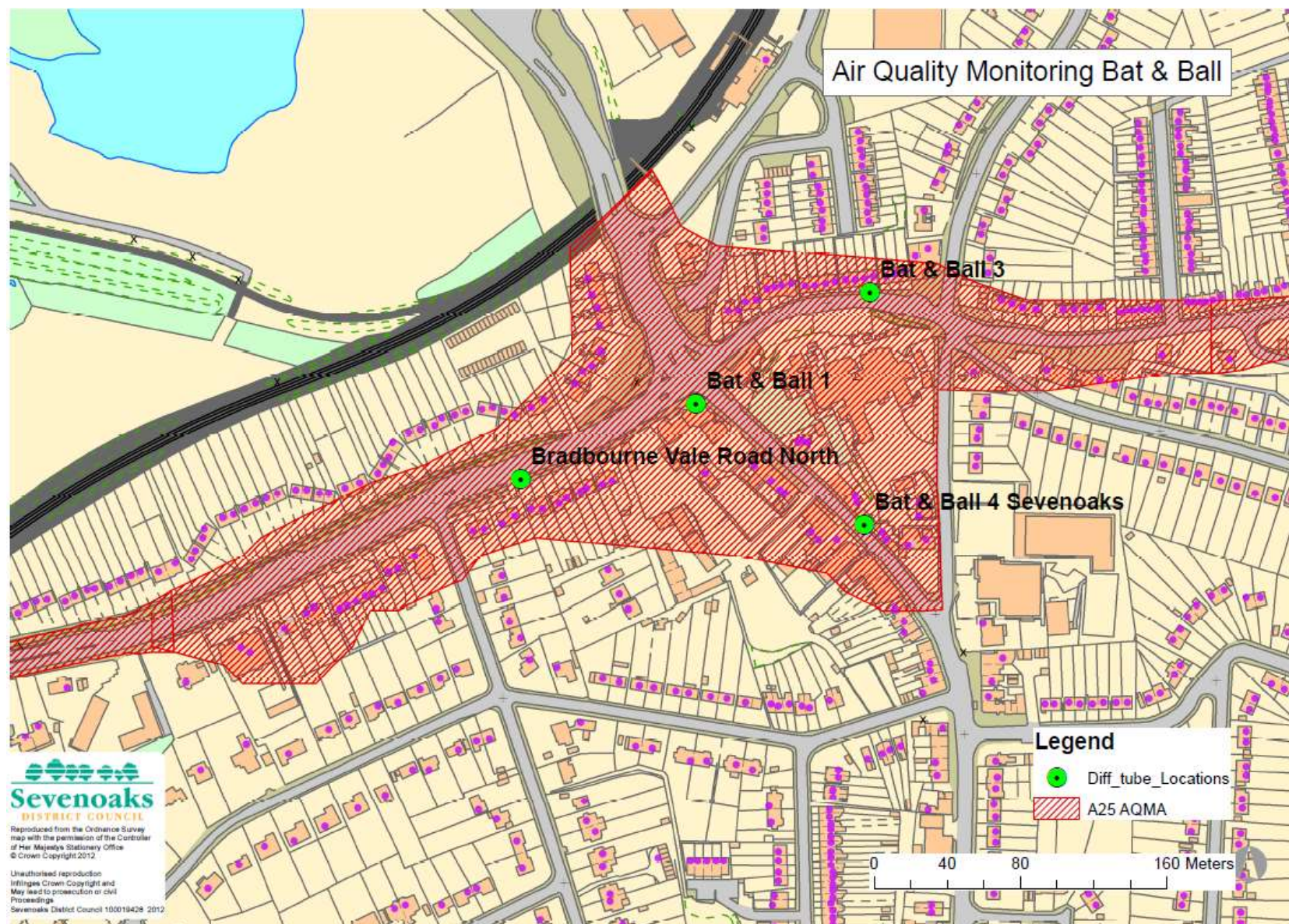


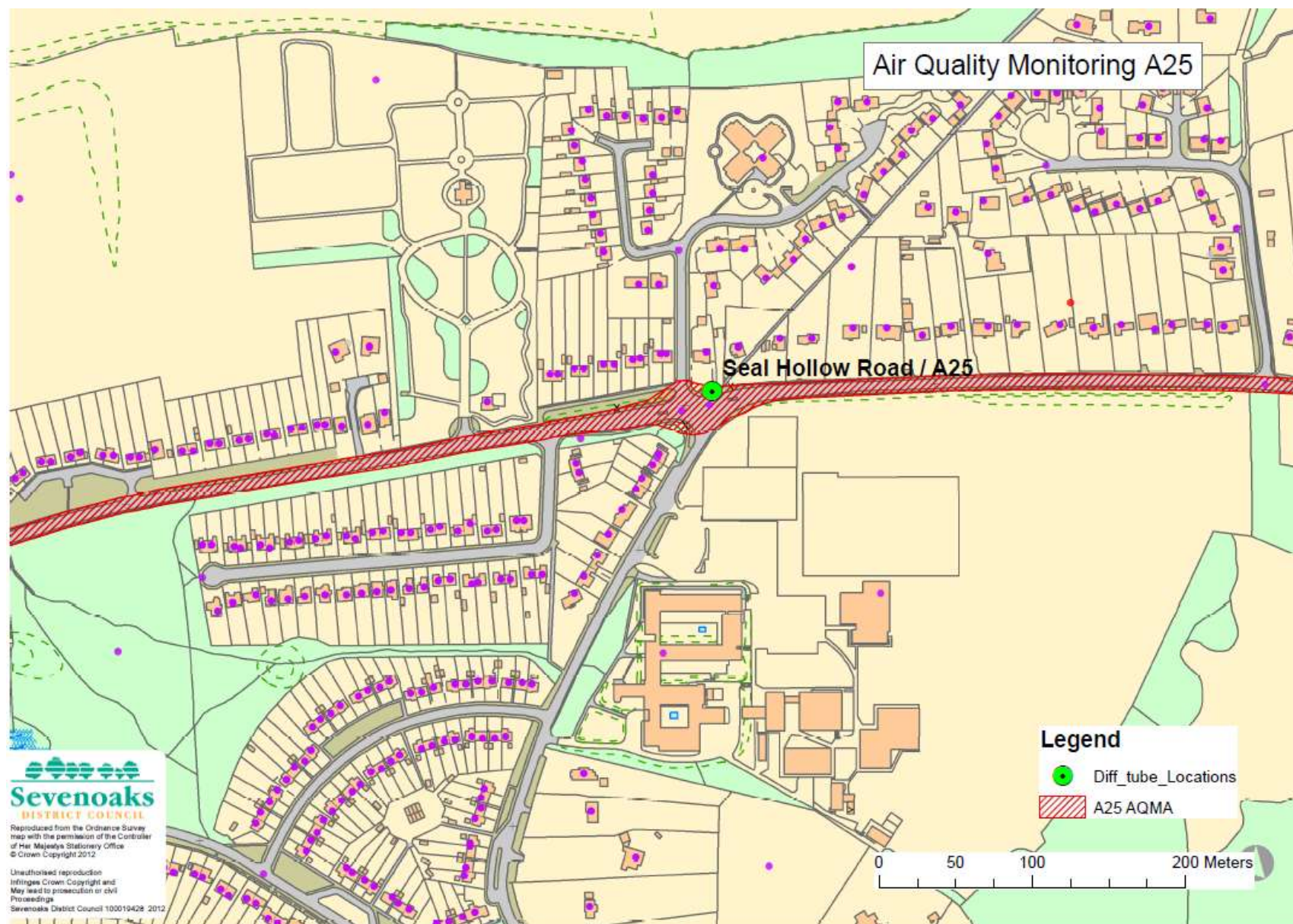


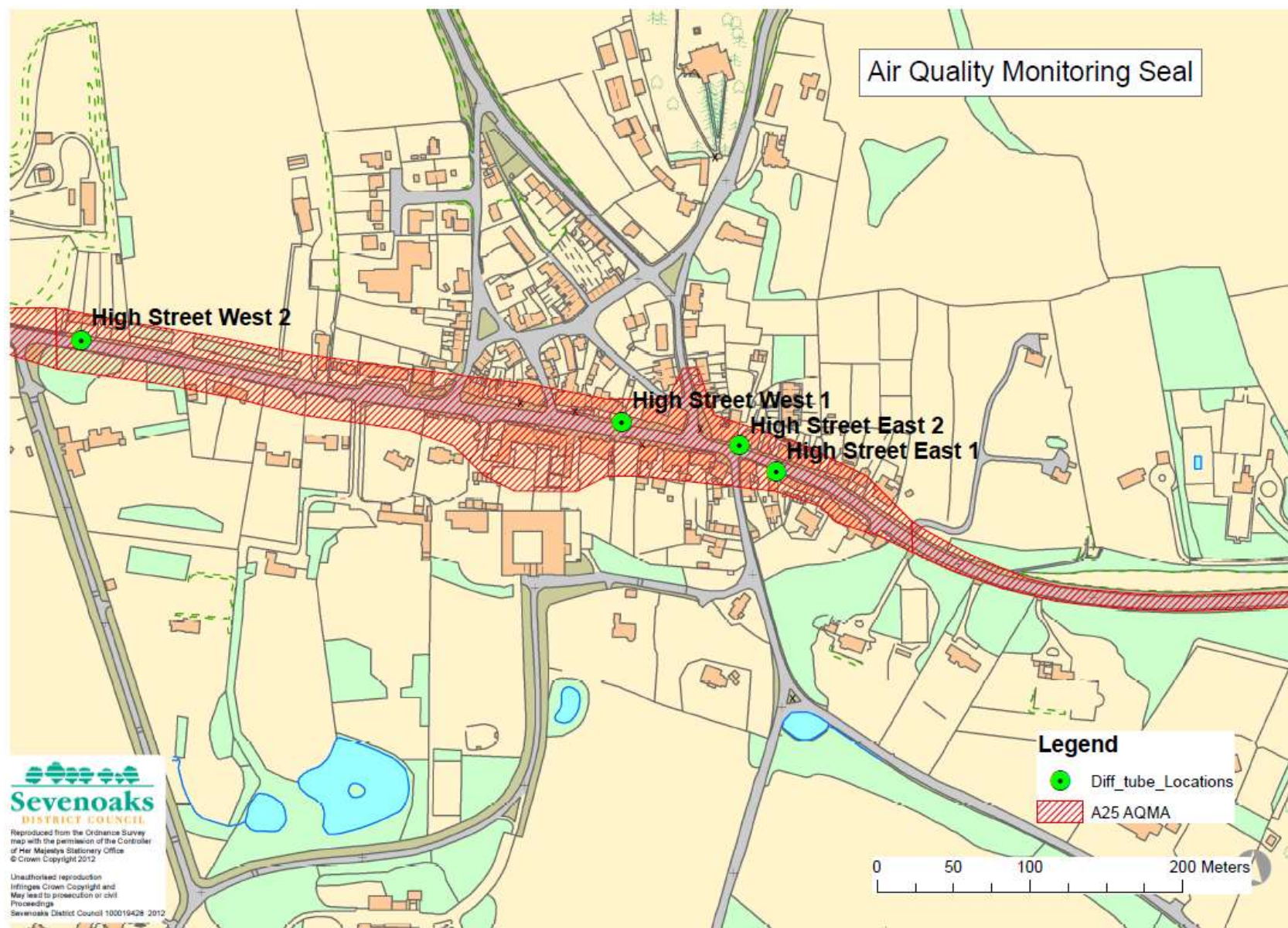




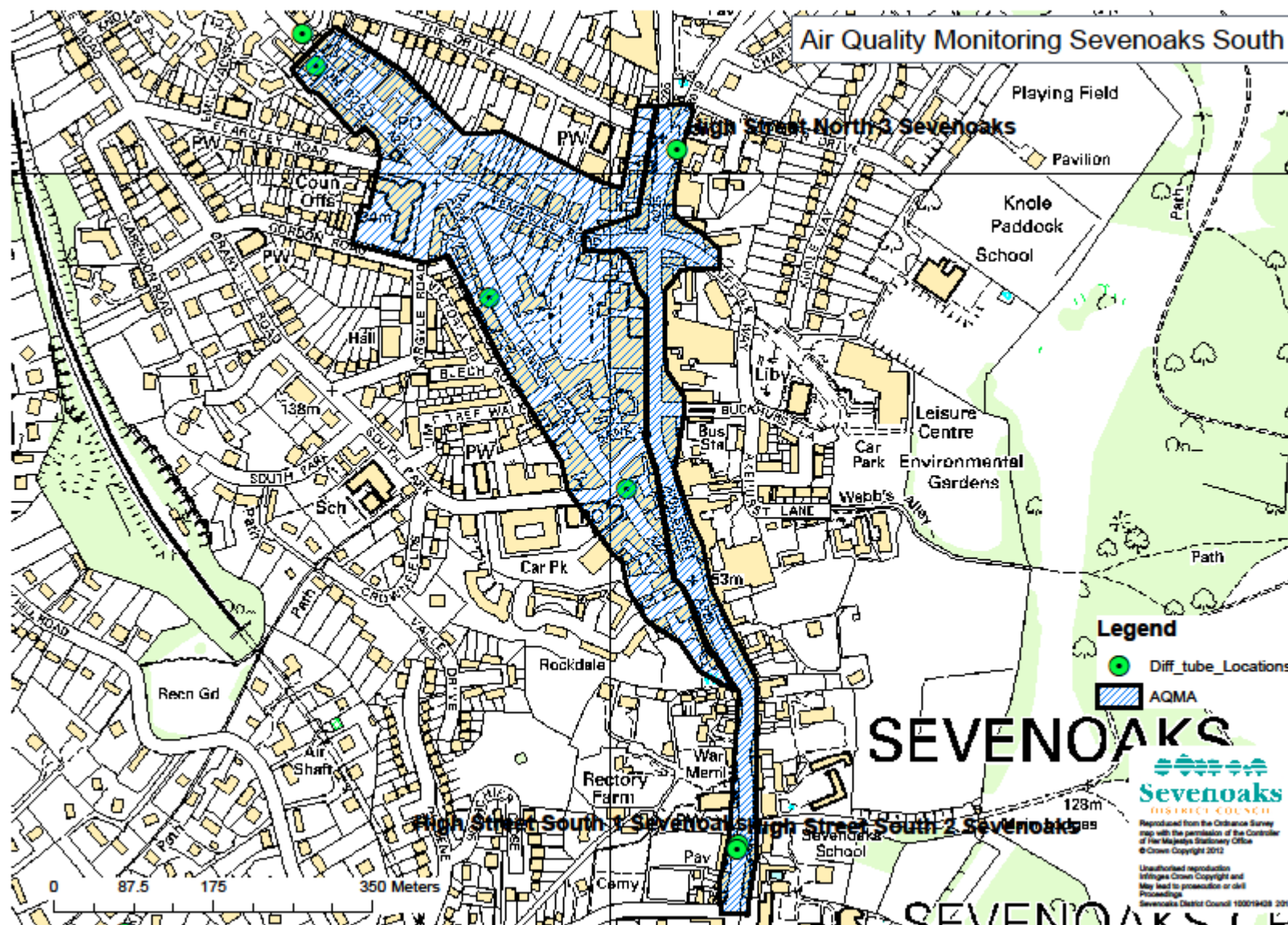












Appendix B: QA:QC Data

Diffusion Tube Bias Adjustment Factors

Nitrogen dioxide diffusion tubes are supplied and analysed by ESG Scientifics (formerly Harwell Scientifics at Didcot). This laboratory is UKAS accredited.

The tubes were prepared by spiking acetone:triethanolamine (50:50) onto grids prior to the tubes being assembled.

The lab confirms it follows the procedures set out in the Harmonisation Practical Guidance and that it is ranked 'Good' in the WASP intercomparison scheme.

The tubes have been compared with the reference method by a triplicate co-location study with the chemiluminescent NOX analysers at Greatness Park Sevenoaks.

The nationally derived Bias Factor for 2013 is 0.81

National Diffusion Tube Bias Adjustment Factor Spreadsheet						Spreadsheet Version Number: 09/14				
Follow the steps below in the correct order to show the results of relevant co-location studies						This spreadsheet will be updated at the end of March 2015				
Data only apply to tubes exposed monthly and are not suitable for correcting individual short-term monitoring periods										
Whenever presenting adjusted data, you should state the adjustment factor used and the version of the spreadsheet										
This spreadsheet will be updated every few months; the factors may therefore be subject to change. This should not discourage their immediate use										
The LAQM Helpdesk is operated on behalf of Defra and the Devolved Administrations by Bureau Veritas, in conjunction with contract partners AECCOM and the National Physical Laboratory						Spreadsheet maintained by the National Physical Laboratory. Original compiled by Air Quality Consultants Ltd				
Step 1		Step 2		Step 3		Step 4				
Select the Laboratory that Analyses Your Tubes from the Drop-Down List		Select a Preparation Method from the Drop-Down List		Select a Year from the Drop-Down List		Where there is only one study for a chosen combination, you should use the adjustment factor shown with caution. Where there is more than one study, use the overall factor ² shown in blue at the foot of the final column.				
If a laboratory is not shown, we have no data for this laboratory		If a preparation method is not chosen, we have no data for this method at this laboratory		If a year is not chosen, we have no data		If you have your own co-location study then see footnote ¹ . If uncertain what to do then contact the Local Air Quality Management Helpdesk at LAQMHelpdesk@uk.bureauveritas.com or 0800 0327953				
Analysed By ¹	Method ² <small>In order to calculate this, please refer to the instructions</small>	Year ³ <small>In order to calculate this, please refer to the instructions</small>	Site Type	Local Authority	Length of Study (months)	Diffusion Tube Mean Conc. (Dm) (µg/m ³)	Automatic Monitor Mean Conc. (Cm) (µg/m ³)	Bias (B)	Tube Precision ⁴	Bias Adjustment Factor (A) (Cm/Dm)
ESG Didcot	50N TEA in acetone	2013		Overall Factor ² (44 studies)				Use		0.81

Factor from Local Co-location Studies

The locally derived Bias Factor from the above co-location study for 2013 was 0.86

Data used for this calculation is as follows.

Co-location Study, Greatness Park

	TUBE 1	TUBE2	TUBE3		TUBE AVERAGE
2013					
JAN	32.1	31.8	28.2		
FEB	26.5	26.5	29		
MAR	27.3	27	27.4		
APR	15.9	15.9	15		
MAY	17.8	17	15.6		

JUNE	15.3	14.5	13.7		
JULY	12.5	12.7	12.2		
AUG	14.9	14.6	14.9		
SEPT	23.8	23.1	22.5		
OCT	20.4	20.5	17.8		
NOV	27.5	27.4	25.6		
DEC	26.2	25.4	24.9		
ave	21.68333	21.36667	20.56667		21.20556
			continuous Analyser		20
			BIAS Adjustment		0.943149

Co-location Study, Bat & Ball

	TUBE 1	TUBE2	TUBE3		TUBE AVERAGE
2013					
JAN	44.1	35.9	44.1		
FEB	39.4	31.3	40.5		
MAR	38.2	38.6	39.1		
APR	28.9	29.6	28.6		
MAY	32.6	33.7	32.9		
JUNE	29.4	30.6	15.9		
JULY	29	31.3	31.4		
AUG	35.4	34.9	35.6		
SEPT	41.7	42.2	41.8		
OCT	40.6	36.2	36.3		
NOV	46.7	46.6	46.6		
DEC	47.7	46.2	46.1		
ave	37.80833	36.425	36.575		36.93611
			continuous Analyser		29
			BIAS Adjustment		0.78514

Average of 2 studies Bias	0.864144
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Discussion of Choice of Factor to Use

Local bias adjustment factors have been used for consistency with previous years Data and is viewed as being more representative of local conditions. The national factor is made up from a number of different results showing some spread in values.

PM Monitoring Adjustment

All PM10 monitoring is by TEOM. Data is collected and ratified by ERG Kings College London. They have corrected all results using their Volatile Correction Model.

QA/QC of Automatic Monitoring

LSO, routine calibration/span checks, etc are carried out by ERG Kings College London to London Air Quality Network standards and the National Physical Laboratory visit twice a year to undertake full calibration checks.

QA/QC of Diffusion Tube Monitoring

Diffusion tube supply and analysis is carried out by Environmental Services Group (ESG). ESG take part in the Workplace Analysis Scheme for Proficiency (WASP) 100% of results submitted were deemed to be satisfactory for this time period.

