2017 Air Quality Annual Status Report (ASR)

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

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Executive Summary: Air Quality in Our Area

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

Air Quality in Sevenoaks

Air pollution is associated with a number of adverse health impacts. It is recognised as a contributing factor in the onset of heart disease and cancer. Additionally, air pollution particularly affects the most vulnerable in society: children and older people, and those with heart and lung conditions. There is also often a strong correlation with equalities issues, because areas with poor air quality are also often the less affluent areas[1,2].

The annual health cost to society of the impacts of particulate matter alone in the UK is estimated to be around £16 billion[3].

The primary source of air pollution within the district is from nitrogen dioxide and particulate matter from road 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.

Nitrogen dioxide diffusion tube monitoring has shown 19 roadside locations where results are above objective levels, all of which are within current AQMA's. Automatic monitoring for both nitrogen dioxide and PM10 are all below the objective levels. The vast majority of all monitoring sites show an increase in pollution across the district in comparison to previous years.

[1] Environmental equity, air quality, socioeconomic status and respiratory health, 2010
[2] Air quality and social deprivation in the UK: an environmental inequalities analysis, 2006
[3] Defra. Abatement cost guidance for valuing changes in air quality, May 2013

Actions to Improve Air Quality

The primary source of air pollution within the district from road 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. Many of the actions require the input of highways authorities. Sevenoaks District Council continues to work closely with Kent County Council Highways. Air quality is a theme that is fed into the Sevenoaks Joint Transport Board.

As well as actions to improve air quality Sevenoaks District Council also operates a scheme with an aim to improve health and reduce exposure to air pollution. Sevenoaks District Council provides a free messaging service that will send free messages to mobile or home telephones to inform vulnerable people that poor air quality is predicted in the area.

Conclusions and Priorities

Pollution levels have fallen in certain locations across the borough however levels remain high particularly at roadside locations. Pollution levels have been distance corrected however at some locations this has demonstrated little reduction particularly in small towns located along the A25 where residential dwellings are located in very close proximity to the kerb of the road. This represents a significant challenge as where there is congestion on the M25 and/or the M26 traffic overspill onto the local road network occurs, particularly on roads such as the A25.

AQMAs have been declared in the past based on modelling work carried out some time ago. There are gaps in the monitoring network in some of these AQMAs and it is proposed to carry out a review of the location of diffusion tubes to be carried out to identify if some of the AQMAs can be amended or revoked.

The airAlert scheme has been operating for a number of years in Sevenoaks District, Dartford and Sevenoaks Environmental Health Partnership are looking to expand this service into Dartford. It is proposed that this will be relaunched in Sevenoaks as part of this expansion.

Sevenoaks District Council is currently working on the production of a new Air Quality Action Plan

Local Engagement and How to get involved

Members of the public can help to improve air quality by making small changes to their everyday lives. Walking and cycling instead of making car journeys will reduce the amount of traffic on the local roads and reducing emissions and also helping to improve the congestion. Other small changes include not allowing car engines to idle when vehicles are stationary.

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1 Local Air Quality Management

This report provides an overview of air quality in Sevenoaks during 2016. It fulfils the requirements of Local Air Quality Management (LAQM) as set out in Part IV of the Environment Act (1995) 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 an exceedance is considered likely the local authority must 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. This Annual Status Report (ASR) is an annual requirement showing the strategies employed by Sevenoaks District Council to improve air quality and any progress that has been made.

The statutory air quality objectives applicable to LAQM in England can be found in Table E.1 in Appendix E.

2 Actions to Improve Air Quality

2.1 Air Quality Management Areas

Air Quality Management Areas (AQMAs) are declared when there is an exceedance or likely exceedance of an air quality objective. After declaration, the authority must prepare an Air Quality Action Plan (AQAP) within 12-18 months setting out measures it intends to put in place in pursuit of compliance with the objectives.

A summary of AQMAs declared by Sevenoaks District Council can be found in Table 2.1. Further information related to declared or revoked AQMAs, including maps of AQMA boundaries are available online at http://www.sevenoaks.gov.uk/services/community-and-living/pollution/air-quality or see full list at http://uk-air.defra.gov.uk/aqma/list Alternatively, see Appendix D: Map(s) of Monitoring Locations and AQMAs, which provides a map of air quality monitoring locations in relation to the AQMA(s).

Table 2.1 – Declared Air Quality Management Areas

AQMA Name	Date of Declaration	Pollutants and Air Quality Objectives	City / Town	One Line Description	Is air quality in the AQMA influenced by roads controlled by Highways England?	Level of Exceedance (maximum monitored/modelled concentration at a location of relevant exposure)		Action Plan (inc. date of publication)
						At Declaration	Now	
AQMA 1	1/3/02	NO_2 annual mean		Junction 3 of the M25 to the district boundary with Tonbridge and Malling Borough Council including part of the A20 at Farningham.	Yes		45.8 (DT26)	http://www.sevenoaks.gov.uk/services/community-and-living/pollution/air-quality
AQMA 2	1/3/02	NO_2 annual mean		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	Yes		43.1 (DT12)	http://www.sevenoaks.gov.uk/services/community-and-living/pollution/air-quality
AQMA 3	1/3/02	NO_2 annual mean		M26 - from junction 5 of the M25 to the district boundary with Tonbridge and Malling Borough Council.	Yes		No current monitoring	http://www.sevenoaks.gov.uk/services/community-and-living/polluti

								on/air-quality
AQMA 4	1/3/02	NO_2 annual mean	Swanley	Swanley Bypass - from junction 3 of the M25 to the district boundary with the London Borough of Bromley	Yes		No current monitoring	http://www.sevenoaks.gov.uk/services/community-and-living/pollution/air-quality
AQMA 6	1/9/06	PM_{10}		Junction 5 to Kent / Surrey border	Yes		No current monitoring	http://www.sevenoaks.gov.uk/services/community-and-living/pollution/air-quality
AQMA 8	1/9/06	NO_2 annual mean	Swanley	Swanley – London Road (East); High Street; Bartholomew Way and parts of Central town area	Yes		51.5 (DT40)	http://www.sevenoaks.gov.uk/services/community-and-living/pollution/air-quality

AQMA 10	1/9/06	NO_2 annual mean	Sevenoaks	Sevenoaks – High Street	Yes		54.7 (DT83)	http://www.sevenoaks.gov.uk/services/community-and-living/pollution/air-quality
AQMA 13	14/1/14	NO_2 annual mean		The entire length of the A25 from the border with Tonbridge and Malling in the east to the border with Tandridge in the west.	Yes		57.9 (DT31)	http://www.sevenoaks.gov.uk/services/community-and-living/pollution/air-quality
AQMA 14	14/1/14	NO_2 annual mean	Swanley	The junction of London Road and Birchwood Road, Swanley.	Yes		60.5 (DT83)	http://www.sevenoaks.gov.uk/services/community-and-living/pollution/air-quality

☒ **Sevenoaks District Council confirm the information on UK-Air regarding their AQMA(s) is up to date**

2.2 Progress and Impact of Measures to address Air Quality in Sevenoaks

Defra's appraisal of last year's ASR stated:

> *'We note that the current monitoring programme provides evidence that the air quality objectives are being met in locations that have been monitored. However, what is not clear, is whether further locations of relevant exposure remain undetected, where the AQMAs represent large areas of potential exposure. Thus it may be appropriate to review the current monitoring programme, to consider whether monitoring is required at additional locations. The status of the AQMAs should be subject to review once further monitoring demonstrates that the objectives are being achieved for several years'*

Sevenoaks District Council is proposing to carry out a review of the location of diffusion tubes to be carried out to identify if some of the AQMAs can be amended or revoked.

Sevenoaks District Council has taken forward a number of direct measures during the current reporting year of 2016 in pursuit of improving local air quality. Details of all measures completed, in progress or planned are set out in Table 2.2.

More detail on these measures can be found in their respective Action Plans.

A report was presented to the Joint Transport Board in 2016 outlining local air quality and its links to road traffic and the potential health implications. The following ten schemes were suggested within the report which could be explored to help improve local air quality.

Sevenoaks District Council expects the following measures to be completed over the course of the next reporting year:

- The purchase of portable air quality monitoring equipment to assist in identifying pollution patterns and raising local awareness;
- The provision of electric vehicle charging points;
- The review of traffic signals at the junction of the High Street and Dartford Road, Sevenoaks, to "puffin" crossings so dispensing with the pedestrian phase if no pedestrians were present

- Continuing to promote and expand the Air Alert scheme working with schools and community groups
- Sign and publicity campaigns to include car sharing and turning off engines
- Dialogue with satnav companies over routes through Sevenoaks Town and other hotspots;
- Developing partnership working with neighbouring authorities to seek transboundary improvements to air quality along the A25 corridor;
- Working with local transport operators
- Working in conjunction with KCC to promote active travel and other air quality initiatives.

Whilst the measures stated above and in Table 2.2 will help to contribute towards compliance, Sevenoaks District Council anticipates that further additional measures not yet prescribed will be required in subsequent years to achieve compliance and enable the revocation of AQMAs

Table 2.2 – Progress on Measures to Improve Air Quality

Measure No.	Measure	EU Category	EU Classification	Organisations involved and Funding Source	Planning Phase	Implementation Phase	Key Performance Indicator	Reduction in Pollutant / Emission from Measure	Progress to Date	Estimated / Actual Completion Date	Comments / Barriers to implementation
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	Traffic management	Other	SDC	2009-13	2009-13	N/A	<0.4 µg/m³	Ongoing	N/A	
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	Traffic Management	Other	SDC	2009-13	2009-13	N/A	<0.4 µg/m³	Ongoing	N/A	

Measure No.	Measure	EU Category	EU Classification	Organisations involved and Funding Source	Planning Phase	Implementation Phase	Key Performance Indicator	Reduction in Pollutant / Emission from Measure	Progress to Date	Estimated / Actual Completion Date	Comments / Barriers to implementation
3	Set up an internal working group to identify, implement and monitor air quality mitigation measures secured by Section 106 Agreement.	Policy Guidance and Development Control	Air Quality Planning and Policy Guidance	SDC	2009-13	2009-13	N/A	<0.4 µg/m³	Working group set up and meeting regularly.	N/A	Working group set up and meeting regularly
4	For the KCC/SDC Member/officer air quality working group to make recommendations to the JTB regarding suitable traffic reducing proposals	Policy Guidance and Development Control	Air Quality Planning and Policy Guidance	SDC	2009-10	2011-13	N/A	<0.2 µg/m³	Ongoing	Ongoing	Regular liaison and reporting of air quality issues to JTB
5	The Council will demonstrate best practice in the purchase and operation of its own vehicle fleet in order to cut harmful emissions where possible	Traffic Management	UTC, Congestion management, traffic reduction	SDC	Ongoing	Ongoing	N/A	No specific target	Ongoing	Ongoing	
6	The District Council will continue to promote and publicise schemes including working with partners where appropriate to encourage a reduction in car use	Vehicle Fleet Efficiency	Promoting Low Emission Public Transport	SDC	2009-13	2009-13	N/A	No specific target	Ongoing	Ongoing	

Measure No.	Measure	EU Category	EU Classification	Organisations involved and Funding Source	Planning Phase	Implementation Phase	Key Performance Indicator	Reduction in Pollutant / Emission from Measure	Progress to Date	Estimated / Actual Completion Date	Comments / Barriers to implementation
7	Reducing congestion and improving air quality as a result through parking schemes	Promoting Travel Alternatives	Personalised Travel Planning	SDC	Ongoing	Ongoing	N/A	No specific target	Ongoing	Ongoing	
8	The District Council will promote a number of initiatives to reduce energy consumption, improve energy efficiency and recycling and develop its carbon management role	Traffic Management	Emission based parking or permit charges	SDC	Ongoing	Ongoing	N/A	<0.2 µg/m^3	Ongoing	Ongoing	
9	Continue to improve and raise the level of knowledge and publicity relating to air pollution	Policy Guidance and Development Control	Other policy	SDC	Ongoing	Ongoing	N/A	No specific target set	Ongoing	Ongoing	
10	AirAlert: Provide AQ health warning for vulnerable people advising them about pollution levels in their area.	Public Information	Other	SDC	Ongoing	Ongoing	N/A	No specific target set	Ongoing	Ongoing	

2.3 $PM_{2.5}$ – Local Authority Approach to Reducing Emissions and/or Concentrations

As detailed in Policy Guidance LAQM.PG16 (Chapter 7), local authorities are expected to work towards reducing emissions and/or concentrations of $PM_{2.5}$ (particulate matter with an aerodynamic diameter of 2.5µm or less). There is clear evidence that $PM_{2.5}$ has a significant impact on human health, including premature mortality, allergic reactions, and cardiovascular diseases.

Sevenoaks District Council is working on producing a new Air Quality Action Plan that will include appropriate measures to reduce $PM_{2.5}$ as well as other priority pollutants.

3 Air Quality Monitoring Data and Comparison with Air Quality Objectives and National Compliance

3.1 Summary of Monitoring Undertaken

3.1.1 Automatic Monitoring Sites

Sevenoaks District Council undertook automatic (continuous) monitoring at 3 sites during 2016. Table A.1 in Appendix A shows the details of the sites.

National monitoring results are available at https://uk-air.defra.gov.uk/data/

Maps showing the location of the monitoring sites are provided in Appendix D. Further details on how the monitors are calibrated and how the data has been adjusted are included in Appendix C.

3.1.2 Non-Automatic Monitoring Sites

Sevenoaks District Council undertook non- automatic (passive) monitoring of NO_2 at 50 sites during 2016.

Table A.2 in Appendix A shows the details of the sites.

Maps showing the location of the monitoring sites are provided in Appendix D. Further details on Quality Assurance/Quality Control (QA/QC) and bias adjustment for the diffusion tubes are included in Appendix C.

3.2 Individual Pollutants

The air quality monitoring results presented in this section are, where relevant, adjusted for bias, “annualisation” and distance correction. Further details on adjustments are provided in Appendix C. Trends from previous years monitoring can be seen in appendix F.

3.2.1 Nitrogen Dioxide (NO_2)

Table A.3 in Appendix A compares the ratified and adjusted monitored NO_2 annual mean concentrations for the past 5 years with the air quality objective of 40µg/m^3.

For diffusion tubes, the full 2016 dataset of monthly mean values is provided in Appendix B.

Nitrogen dioxide diffusion tube monitoring has shown 19 roadside locations where results are above objective levels, all of which are within current AQMA's. A tube located at Jessamine Terrace recorded an annual mean of 60.5 which may indicate a breach of the hourly mean at this location.

Automatic monitoring for nitrogen dioxide is below the objective levels with only three breaches of the 1 hour mean objective recorded at the Bat & Ball site.

3.2.2 Particulate Matter (PM_{10})

Table A.5 in Appendix A compares the ratified and adjusted monitored PM_{10} annual mean concentrations for the past 5 years with the air quality objective of 40µg/m^3.

Table A.6 in Appendix A compares the ratified continuous monitored PM_{10} daily mean concentrations for the past 5 years with the air quality objective of 50µg/m^3, not to be exceeded more than 35 times per year.

There were no recorded breaches of either the annual or 24 hour mean objectives at any of the monitring locations. The Sevenoaks quarry site commeneced monitoring ing in July 2015, however data capute for the year was hindered by teething problems and as a result the data capture for this site was 61%

3.2.3 Particulate Matter ($PM_{2.5}$)

$PM_{2.5}$ is not currently monitored for.

3.2.4 Sulphur Dioxide (SO_2)

Sulphur Dioxide is no longer monitored.

Appendix A: Monitoring Results

Table A.1 – Details of Automatic Monitoring Sites

Site ID	Site Name	Site Type	X OS Grid Ref	Y OS Grid Ref	Pollutants Monitored	In AQMA?	Monitoring Technique	Distance to Relevant Exposure (m) (1)	Distance to kerb of nearest road (m) (2)	Inlet Height (m)
CM1	Greatness	Urban background	553603	156774	NOx, NO, NO2, PM10, O3	N	TEOM	Y	46m	1.8
CM2	Bat & Ball	Roadside	553044	156690	NOx, NO, NO2, PM10	Y	TEOM	N - (30m)	8m	1.8
CM3	Sevenoaks Quarry	Roadside	553195	157195	PM10	N	BAM	N - (6m)	1m	1.8

Notes:

(1) 0m if the monitoring site is at a location of exposure (e.g. installed on the façade of a residential property).

(2) N/A if not applicable.

Table A.2 – Details of Non-Automatic Monitoring Sites

Site ID	Site Name	Site Type	X OS Grid Ref	Y OS Grid Ref	Pollutants Monitored	In AQMA ?	Distance to Relevant Exposure (m) (1)	Distance to kerb of nearest road (m) (2)	Tube collocated with a Continuous Analyser?	Height (m)
DT2	High Street South 1 (Guitar) Sevenoaks	Roadside	553156	154409	NO2	Y	Y	1	N	2m
DT3	Garvock Drive Sevenoaks	Urban Background	552467	154167	NO2	N	Y	0	N	2m
DT27	High Street South 2 (Sev School) Sevenoaks	Roadside	553139	154259	NO2	Y	Y	3	N	2.5m
DT28	High Street North 2 (Sev Sennockian) Sevenoaks	Kerbside	552045	154883	NO2	Y	N (2m)	0.5	N	2.5m
DT29	High Street North 3 (Water Trough) Sevenoaks	Roadside	553073	155026	NO2	Y	N (3m)	2	N	2.5m
DT48	73 London Road (Brunch) Sevenoaks	Roadside	552867	154863	NO2	Y	Y	1.5	N	2m
DT49	20 London Road (Butchers) Sevenoaks	Roadside	553018	154654	NO2	Y	Y	2	N	2m
DT51	130 London Road (Opp Car Sales) Sevenoaks	Kerbside	552662	155153	NO2	Y	N (3m)	0.5	N	2.5m
DT52	142 London Road (Lulworth) Sevenoaks	Roadside	552506	155272	NO2	Y	N (6m)	2	N	2.5m
DT77	Montreal Road/ Amherst Hill	Roadside	551529	155967	NO2	N	N (4m)	2	N	2.5m

Site ID	Site Name	Site Type	X OS Grid Ref	Y OS Grid Ref	Pollutants Monitored	In AQMA ?	Distance to Relevant Exposure (m) (1)	Distance to kerb of nearest road (m) (2)	Tube collocated with a Continuous Analyser?	Height (m)
	Sevenoaks									
DT87	Bradbourne Vale Road South	Roadside	551640	156335	NO2	Y	N (10m)	2.5	N	2.5m
DT88	Bradbourne Vale Road North	Roadside	552950	156577	NO2	Y	N (20m)	1.5	N	2.5m
DT90	4a St Johns Hill Sevenoaks	Roadside	553140	155898	NO2	N	N (4m)	1.5	N	2.5m
DT23	Bat & Ball 1 Sevenoaks (Ferrari)	Roadside	553059	156624	NO2	Y	Y	4	N	2.5m
DT30	Bat & Ball 2 Otford Road Sevenoaks	Roadside	553019	156690	NO2	Y	N (7m)	3	N	2.5m
DT31	Bat & Ball 3 Seal Road Sevenoaks	Roadside	553154	156685	NO2	Y	N (1.5m)	1.5	N	2.5m
DT32	Bat & Ball 4 St Johns Sevenoaks	Roadside	553147	156562	NO2	Y	Y	1.5	N	2.5m
DT5	Riverhead 2 (Laundry) North West	Kerbside	551415	156197	NO2	Y	N (1.5m)	0.5	N	2.5m
DT6	Riverhead 3 (Opp shops) East	Roadside	551442	156157	NO2	Y	N (6m)	3	N	2.5m
DT42	London Road Riverhead	Roadside	551315	156378	NO2	Y	N (2m)	2	N	2.5m
DT76	Worships Hill/ Witches Lane, Riverhead	Roadside	551020	155712	NO2	Y	N (36m)	2	N	2.5m
DT7	High Street East 1 (Road Sign) Seal	Roadside	555096	156692	NO2	Y	Y	1	N	2.5m
DT8	High Street West 1 (Garage) Seal	Roadside	554991	156726	NO2	Y	N (3m)	3	N	2.5m

Site ID	Site Name	Site Type	X OS Grid Ref	Y OS Grid Ref	Pollutants Monitored	In AQMA ?	Distance to Relevant Exposure (m) (1)	Distance to kerb of nearest road (m) (2)	Tube collocated with a Continuous Analyser?	Height (m)
DT33	High Street East 2 (Pizza) Seal	Roadside	555068	156711	NO2	Y	Y	1.5	N	2m
DT34	High Street West 2 Council cottages Seal	Roadside	554637	156780	NO2	Y	N (7m)	2	N	2.5m
DT35	Seal Hollow Road/ A25	Roadside	554093	156798	NO2	Y	N (18m)	2.5	N	2.5m
DT43	Miners Arms, London Road, Dunton Green	Roadside	551279	156864	NO2	Y	N (2.5m)	2	N	2.5m
DT54	57 London Road, Dunton Green	Roadside	551216	157011	NO2	Y	N (8m)	2	N	2.5m
DT74	Westerham Road, (Devon Cott) Bessels Green	Roadside	550768	155582	NO2	Y	N (8m)	2	N	2.5m
DT86	59 Westerham Road, Bessels Green	Roadside	550308	155592	NO2	Y	Y	1.5	N	2m
DT71	Main Road, Sundridge	Roadside	548239	155355	NO2	Y	N (1.5m)	1	N	2.5m
DT12	Station Road (M25) Brasted	Roadside	546815	155850	NO2	Y	N (42m)	7m to M25	N	2m
DT84	West End Brasted	Roadside	546802	155000	NO2	Y	Y	1	N	2.5m
DT85	Chart Lane Brasted	Roadside	547097	155099	NO2	Y	Y	1	N	2.5m
DT24	High Street, (Wells Close) Westerham	Roadside	544415	153914	NO2	Y	N (3m)	1	N	2.5m
DT25	Vicarage Hill, Westerham	Roadside	544770	154000	NO2	Y	N (3m)	1	N	2.5m
DT36	Market Square, Westerham	kerbside	544594	154025	NO2	Y	N (3m)	1	N	2.5m
DT13	Wested Lane, Swanley	Roadside	552504	167700	NO2	Y	N (14m)	5	N	2.5m
DT14	Wadard Terrace, Button St Swanley	Roadside	553107	167868	NO2	Y	N (15m)	115m to M25	N	2.5m

Site ID	Site Name	Site Type	X OS Grid Ref	Y OS Grid Ref	Pollutants Monitored	In AQMA ?	Distance to Relevant Exposure (m) (1)	Distance to kerb of nearest road (m) (2)	Tube collocated with a Continuous Analyser?	Height (m)
DT39	Bartholomew Way, Swanley	Roadside	551492	168695	NO2	Y	N (13m)	2	N	2.5m
DT40	London Road 1 (traffic lights) Swanley	Kerbside	551575	168509	NO2	Y	N (2m)	0.5	N	2.5m
DT41	London Road 2 (Bus) Swanley	Roadside	552174	168162	NO2	Y	N (6m)	1.5	N	2.5m
DT81	Farningham Hill Road, Swanley	Urban	553416	167615	NO2	Y	N (17m)	27m to M20	N	2.5m
DT83	Jessamine Terrace, Birchwood Road Swanley	Roadside	550296	169632	NO2	Y	N (0.5m)	1	N	2.5m
DT93	Pucknells, Birchwood Road, Swanley	Roadside	550283	169743	NO2	N	N (10m)	2	N	2.5m
DT94	Birchwood Road Junction London Road	Roadside	550251	169574	NO2	Y	N (10m)	2	N	2m
DT95	Malvern, Birchwood Road, Swanley	Roadside	550351	169490	NO2	Y	N (20m)	2	N	2.5m
DT26	Farningham Hill (A20)	Roadside	554217	167252	NO2	Y	Y	5m to A20/ 90m to M20	N	2m
BC1	Greatness AQ Station 1	Urban Background	553603	156774	NO2	N	Y	46	Y	2m
BC2	Greatness AQ Station 2	Urban Background	553603	156774	NO2	N	Y	46	Y	2m
BC3	Greatness AQ Station 3	Urban Background	553603	156774	NO2	N	Y	46	Y	2m
BC4	Bat & Ball AQ Station 1	Roadside	553044	156690	NO2	Y	N (30m)	8	Y	2m
BC5	Bat & Ball AQ Station 2	Roadside	553044	156690	NO2	Y	N (30m)	8	Y	2m
BC6	Bat & Ball AQ Station 3	Roadside	553044	156690	NO2	Y	N (30m)	8	Y	2m
DT34 Currently	16 Main Road, Sundridge Dunbrik		549427	155691	NO2	N				

Notes:

(1) 0m if the monitoring site is at a location of exposure (e.g. installed on/adjacent to the façade of a residential property).

(2) N/A if not applicable.

Table A.3 – Annual Mean NO_2 Monitoring Results

Site ID	Site Type	Monitoring Type	Valid Data Capture for Monitoring Period (%) [1]	Valid Data Capture 2016 (%) [2]	NO_2 Annual Mean Concentration ($\mu g/m^3$) [3]				
					2012	2013	2014	2015	2016
CM1	Urban Background	Automatic		83	19	20	17	17	17
CM2	Roadside	Automatic		98	29	31	29	31.8 [3]	31
DT2	Roadside	Diffusion Tube		100	64.6	62	56.7	53.6	**54.7**
DT3	Urban Background	Diffusion Tube		100	14.9	14.3	12.3	10.8	12.7
DT5	Kerbside	Diffusion Tube		100	53.5	50.2	48.2	42.8	**47.0**
DT6	Roadside	Diffusion Tube		100	51.5	51.6	47.1	44.1	**47.1**
DT7	Roadside	Diffusion Tube		92	56.5	51	49.5	44.3	**46.8**
DT8	Roadside	Diffusion Tube		100	38.2	36.8	31.6	31.1	35.2
DT12	Roadside	Diffusion Tube		83	53.7	44.2	43.3	46.5	**43.1**
DT13	Roadside	Diffusion Tube		100	40.1	40.7	37.1	31.4	36.5
DT14	Roadside	Diffusion Tube		100	41.9	36	35.4	32.4	32.6
DT23	Roadside	Diffusion Tube		100	43.1	43.9	38.8	35.6	**40.5**
DT24	Roadside	Diffusion Tube		100	39.2	43.8	35.0	32.7	35.3
DT25	Roadside	Diffusion Tube		100	36.3	35.8	30.1	28.3	29.8
DT26	Roadside	Diffusion Tube		100	48	46.3	42.3	41.7	**45.8**
DT27	Roadside	Diffusion Tube		100	45	41.8	39.4	37.2	39.8
DT28	Kerbside	Diffusion Tube		67	51.8	49.8	46.0	42.4	**44.1**
DT29	Roadside	Diffusion Tube		100	33.6	32.5	30.0	27.8	31.5
DT30	Roadside	Diffusion Tube		92	42.5	39.9	35.1	32.2	36.1
DT31	Roadside	Diffusion Tube		100	60.2	54.1	52.0	46.9	**57.9**
DT32	Roadside	Diffusion Tube		100	60.8	55.9	55.3	49.9	**56.3**
DT33	Roadside	Diffusion Tube		100	53.8	48.4	46.7	42.5	**48.1**
DT34	Roadside	Diffusion Tube		100	39.7	37	35.3	30.9	31.7

Site ID	Site Type	Monitoring Type	Valid Data Capture for Monitoring Period (%) [1]	Valid Data Capture 2016 (%) [2]	NO_2 Annual Mean Concentration ($\mu g/m^3$) [3]				
					2012	2013	2014	2015	2016
DT35	Roadside	Diffusion Tube		100	44	40.3	40.5	36.3	39.6
DT36	Kerbside	Diffusion Tube		92	55.3	55.8	51.7	44.6	**45.1**
DT39	Roadside	Diffusion Tube		100	42.3	42.4	38.4	34.7	**40.9**
DT40	Kerbside	Diffusion Tube		100	54.8	51.6	48.5	42.3	**51.5**
DT41	Roadside	Diffusion Tube		100	45.7	43.5	43.0	37.5	**42.7**
DT42	Roadside	Diffusion Tube		100	47.1	41.9	44.4	37.1	39.3
DT43	Roadside	Diffusion Tube		92	36.2	36.8	33.9	28.0	34.1
DT48	Roadside	Diffusion Tube		83	35.8	34.1	32.6	25.6	27.7
DT49	Roadside	Diffusion Tube		100	33.3	38.5	34.9	30.4	33.7
DT51	Kerbside	Diffusion Tube		100	43.3	38.9	39.2	36.1	**40.4**
DT52	Roadside	Diffusion Tube		100	41.4	42.7	39.6	37.9	38.3
DT54	Roadside	Diffusion Tube		100	43	36.8	38.1	35.6	36.0
DT71	Roadside	Diffusion Tube		100	38.8	39.9	32.4	29.8	33.5
DT74	Roadside	Diffusion Tube		100	48	41.9	39.7	35.5	37.1
DT76	Roadside	Diffusion Tube		100	45.3	43.1	36.2	35.6	40.0
DT77	Roadside	Diffusion Tube		100	44.8	46.5	42.8	40.7	40.0
DT81	Urban Background	Diffusion Tube		100	40.5	36.1	32	32.2	32.9
DT83	Roadside	Diffusion Tube		100	62.1	51.8	48.8	55.6	**60.5**
DT84	Roadside	Diffusion Tube		100	38.7	41.2	34.9	32.8	35.4
DT85	Roadside	Diffusion Tube		100	56.2	58.9	48.3	45.0	51.1
DT86	Roadside	Diffusion Tube		92	46.5	42.7	39.4	36.7	**40.8**
DT87	Roadside	Diffusion Tube		10	56.7	55.7	53.8	48.1	**51.7**
DT88	Roadside	Diffusion Tube		100	39.8	36.8	35.1	29.1	32.9
DT90	Roadside	Diffusion Tube		100	41	40.9	35.3	32.4	36.9
DT93	Roadside	Diffusion Tube		100	32.8	32.4	31.5	29.3	32.4
DT94	Roadside	Diffusion Tube		92	37.6	36.5	35.1	33.7	36.9

Site ID	Site Type	Monitoring Type	Valid Data Capture for Monitoring Period (%) [1]	Valid Data Capture 2016 (%) [2]	NO_2 Annual Mean Concentration ($\mu g/m^3$) [3]				
					2012	2013	2014	2015	2016
DT95	Roadside	Diffusion Tube		100	39.6	36.6	35.2	34.1	38.0

☒ **Diffusion tube data has been bias corrected**

☒ **Annualisation has been conducted where data capture is <75%**

☒ **If applicable, all data has been distance corrected for relevant exposure**

Notes:

Exceedances of the NO_2 annual mean objective of 40µg/m^3 are shown in **bold**.

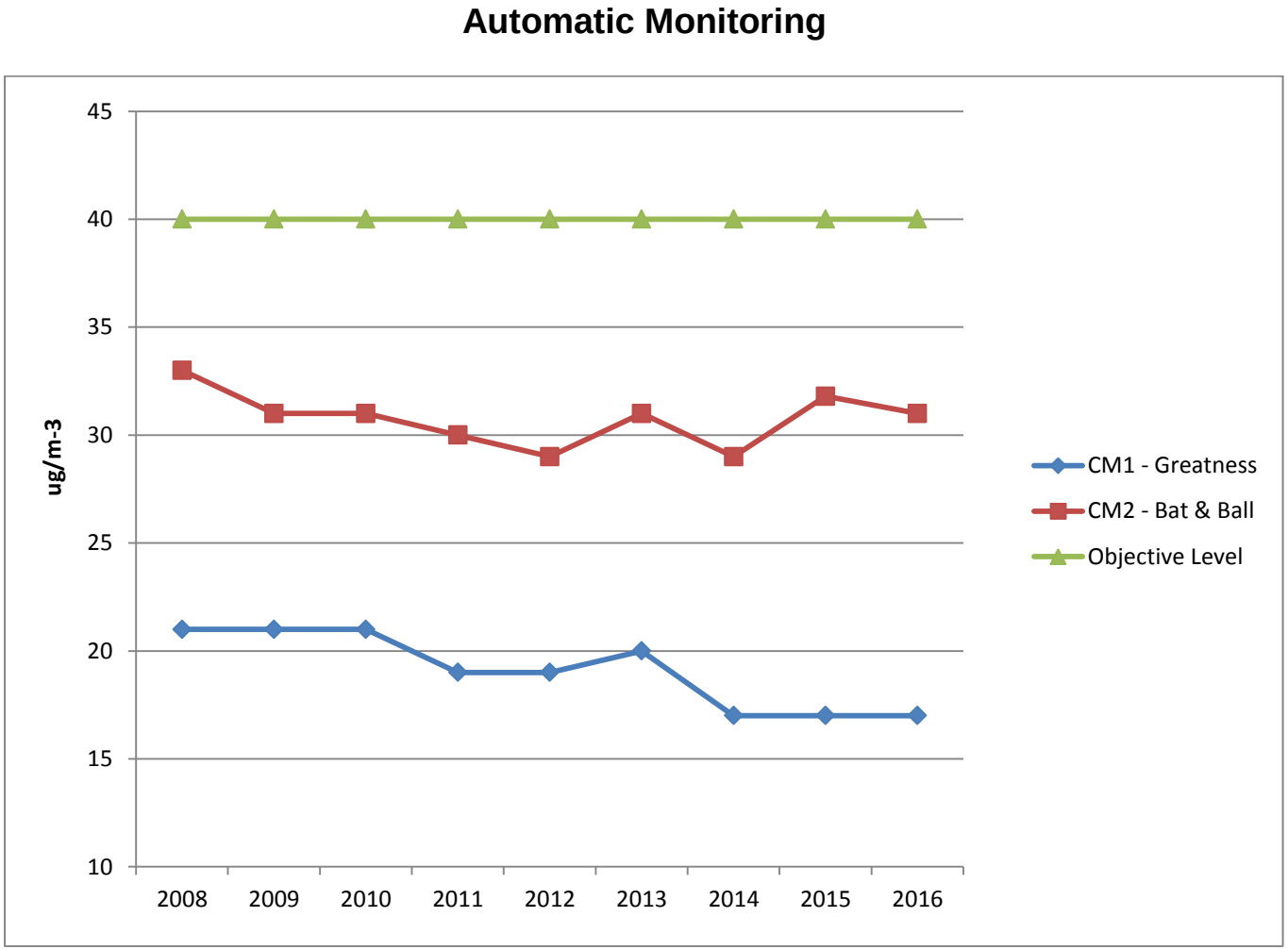
NO_2 annual means exceeding 60µg/m^3, indicating a potential exceedance of the NO_2 1-hour mean objective are shown in **bold and underlined.**

(1) Data capture for the monitoring period, in cases where monitoring was only carried out for part of the year.

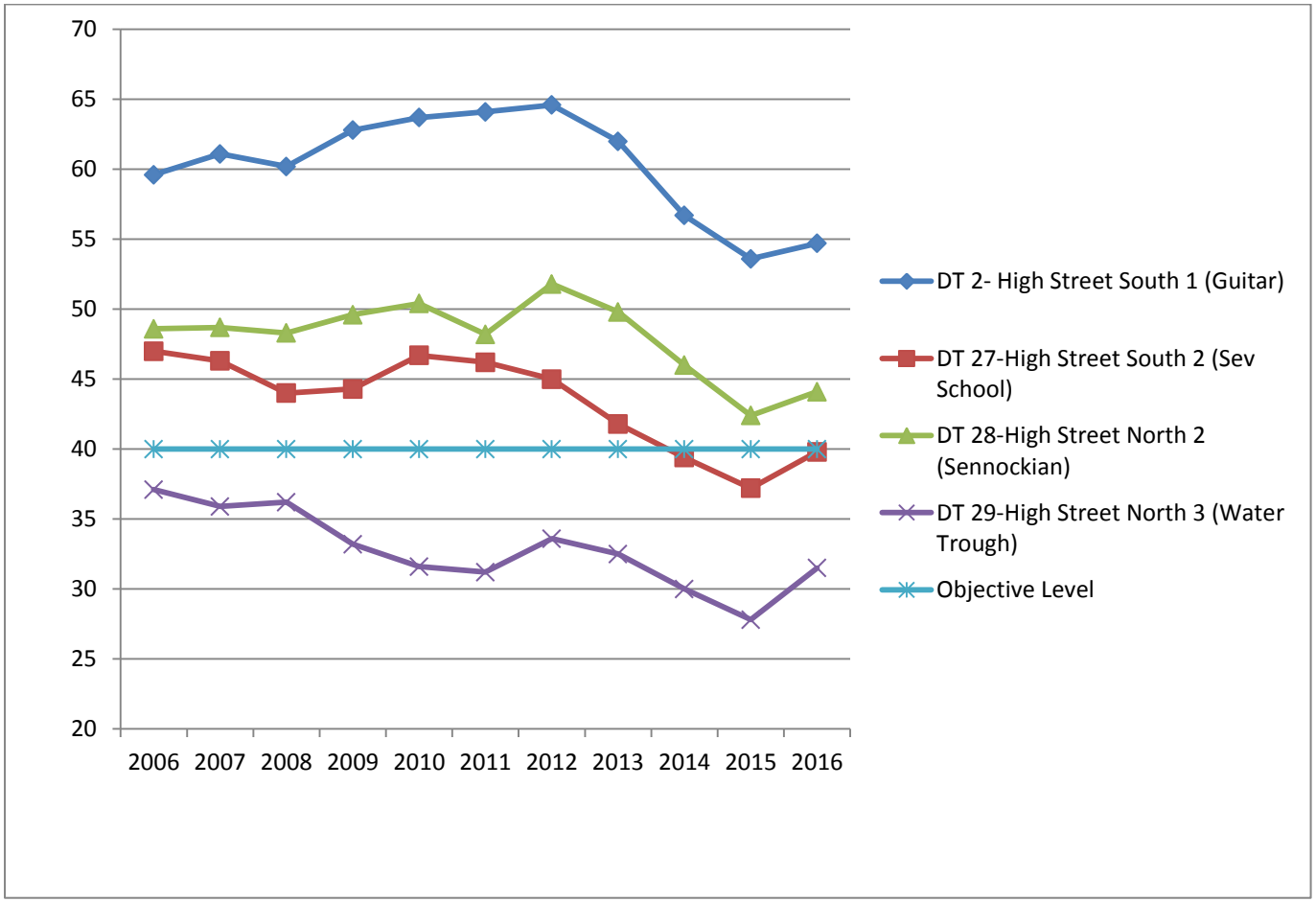
(2) Data capture for the full calendar year (e.g. if monitoring was carried out for 6 months, the maximum data capture for the full calendar year is 50%).

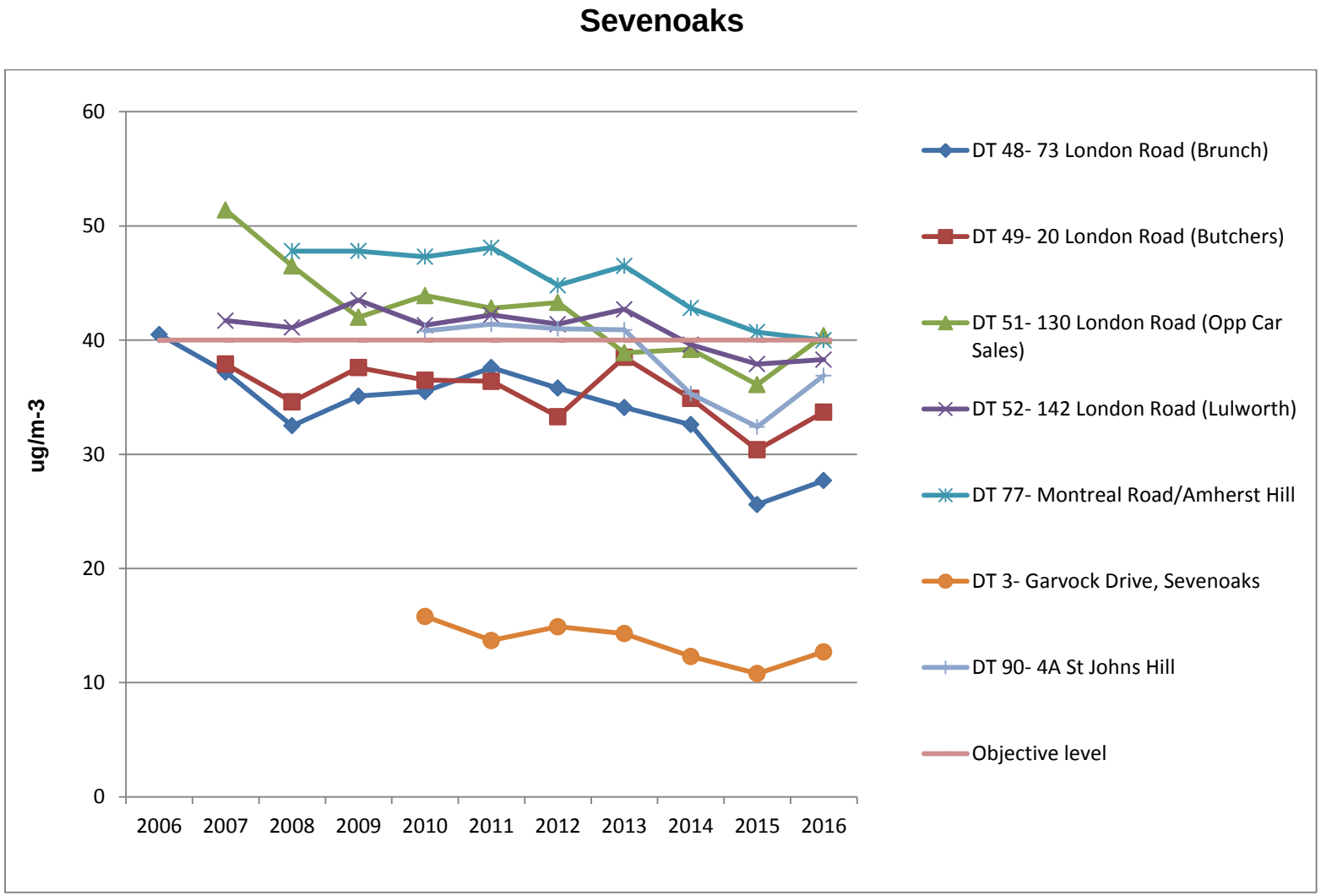
(3) Means for diffusion tubes have been corrected for bias. All means have been "annualised" as per Boxes 7.9 and 7.10 in LAQM.TG16 if valid data capture for the full calendar year is less than 75%. See Appendix C for details.

Figure A.1 – Trends in Annual Mean NO_2 Concentrations

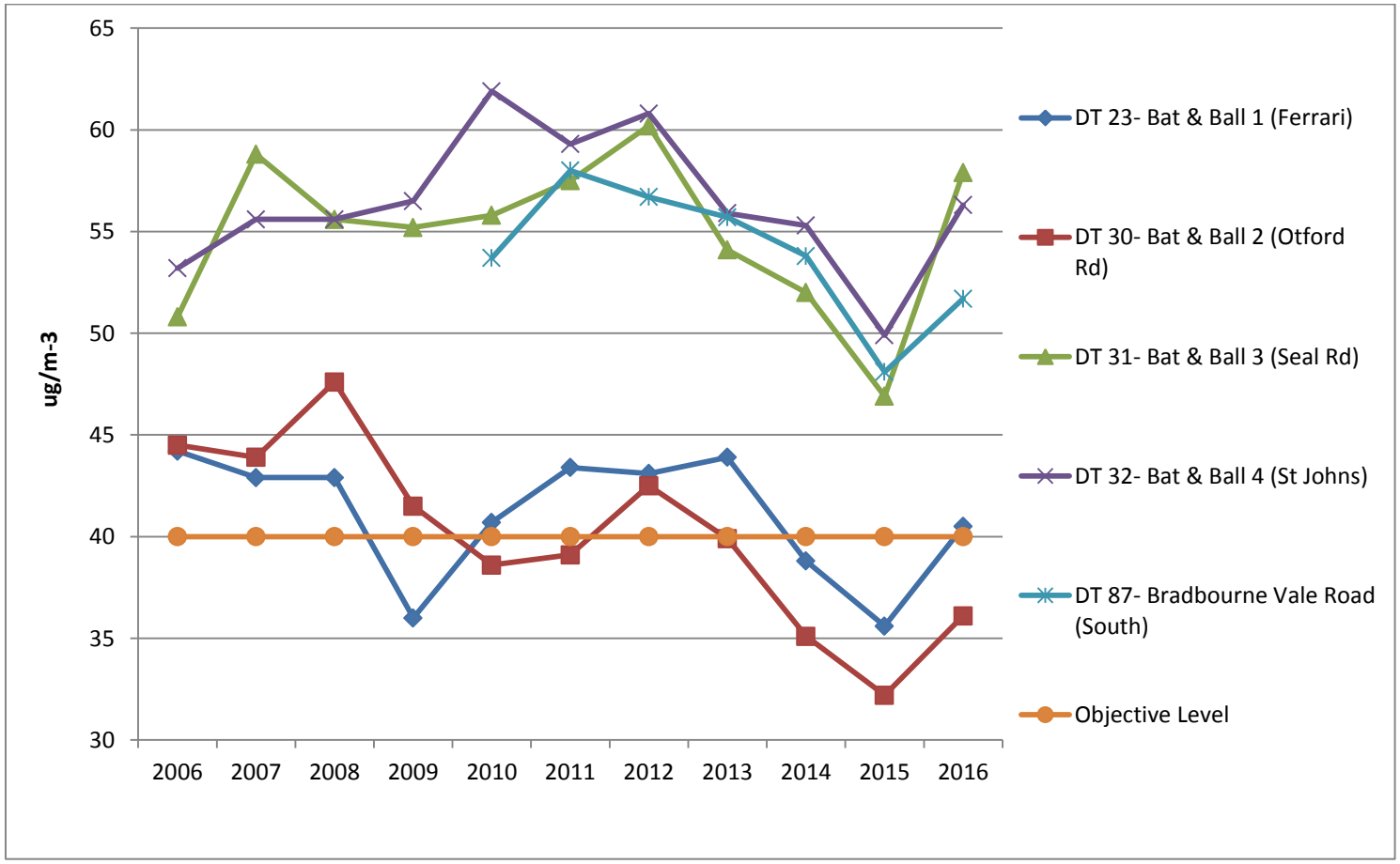


Sevenoaks High Street

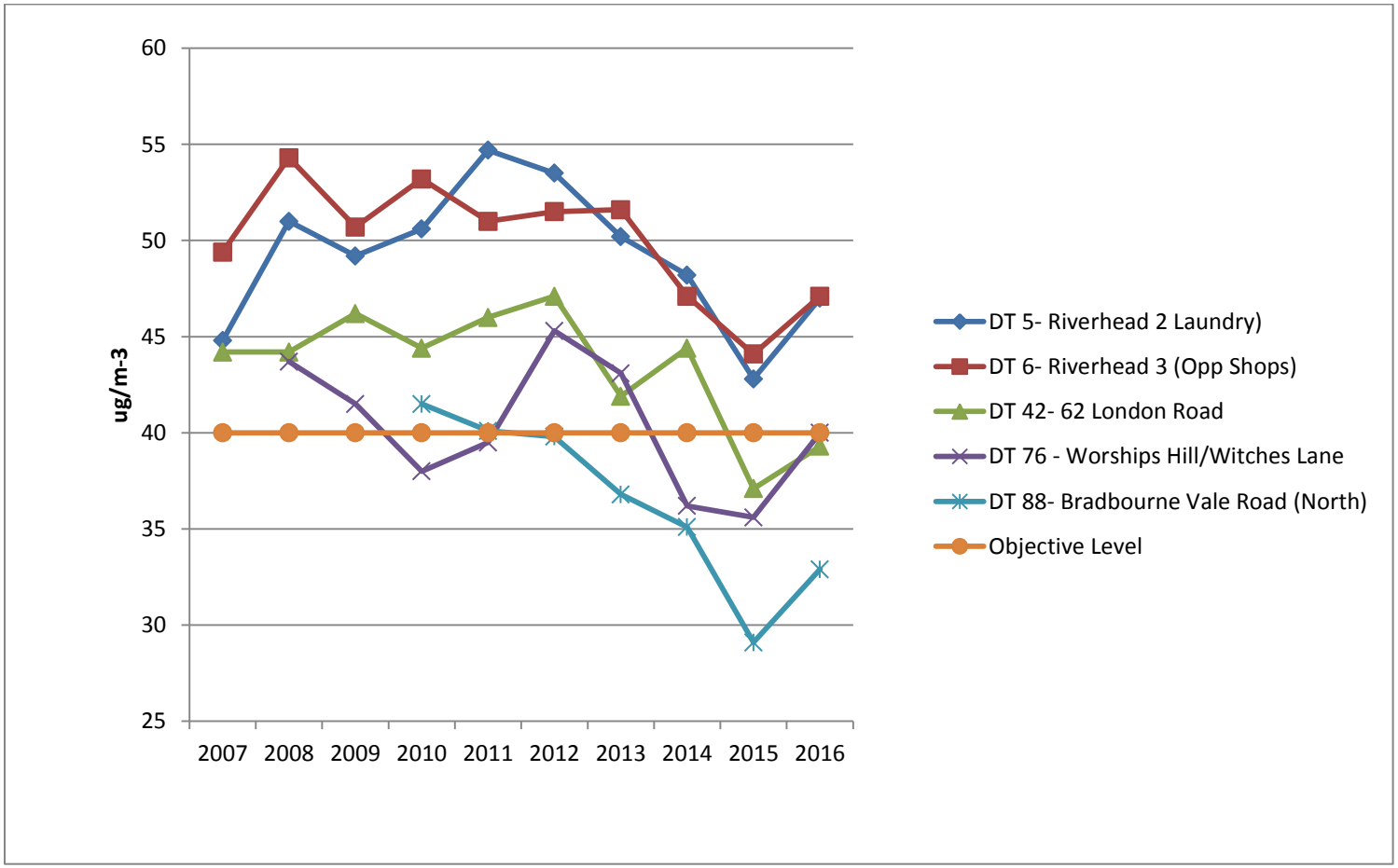


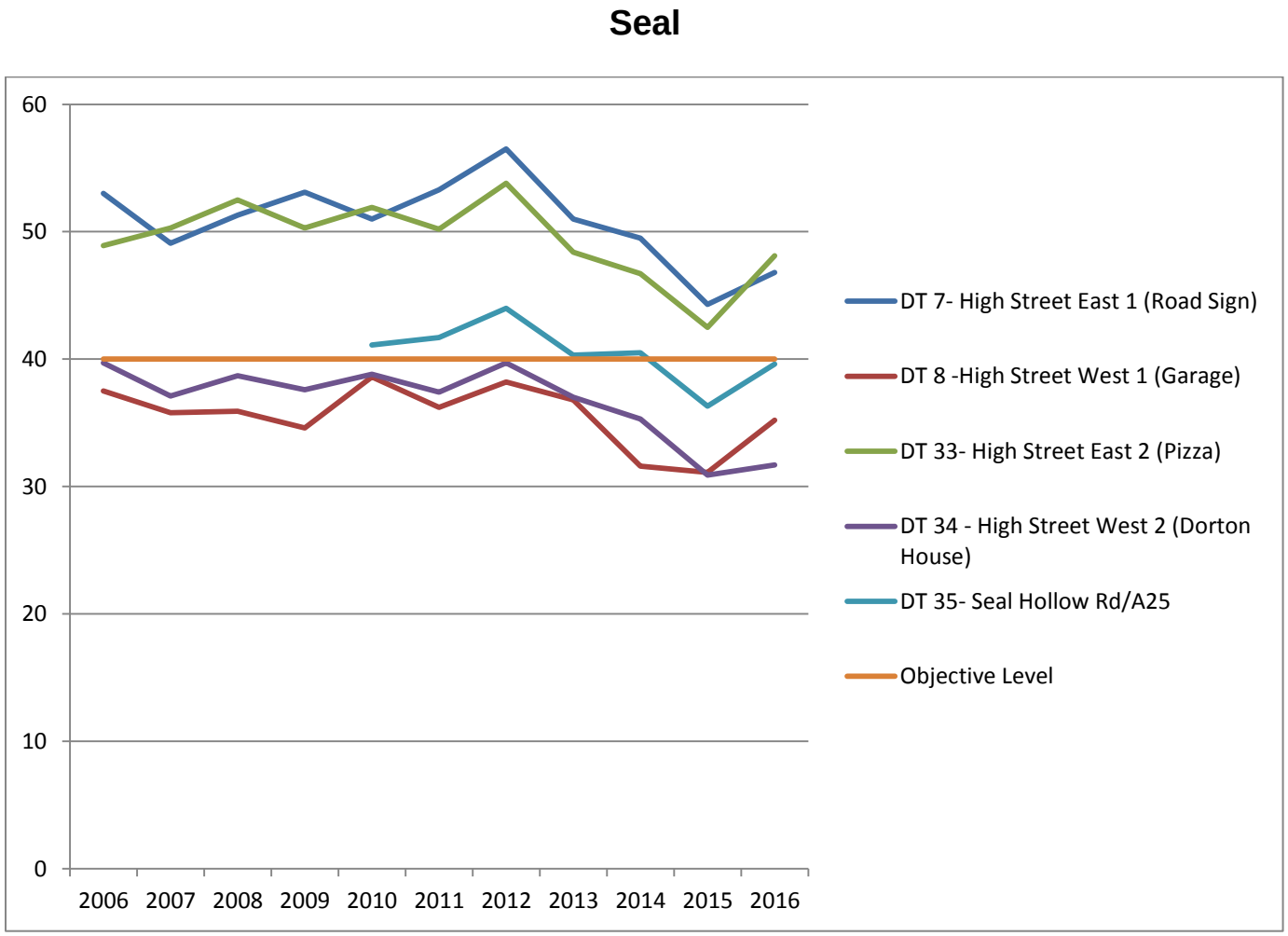

Sevenoaks
ug/m-3
60
50
40
30
20
10
0
2006
2007
2008
2009
2010
2011
2012
2013
2014
2015
2016
DT 48- 73 London Road (Brunch)
DT 49- 20 London Road (Butchers)
DT 51- 130 London Road (Opp Car Sales)
DT 52- 142 London Road (Lulworth)
DT 77- Montreal Road/Amherst Hill
DT 3- Garvock Drive, Sevenoaks
DT 90- 4A St Johns Hill
Objective level

Bat and Ball

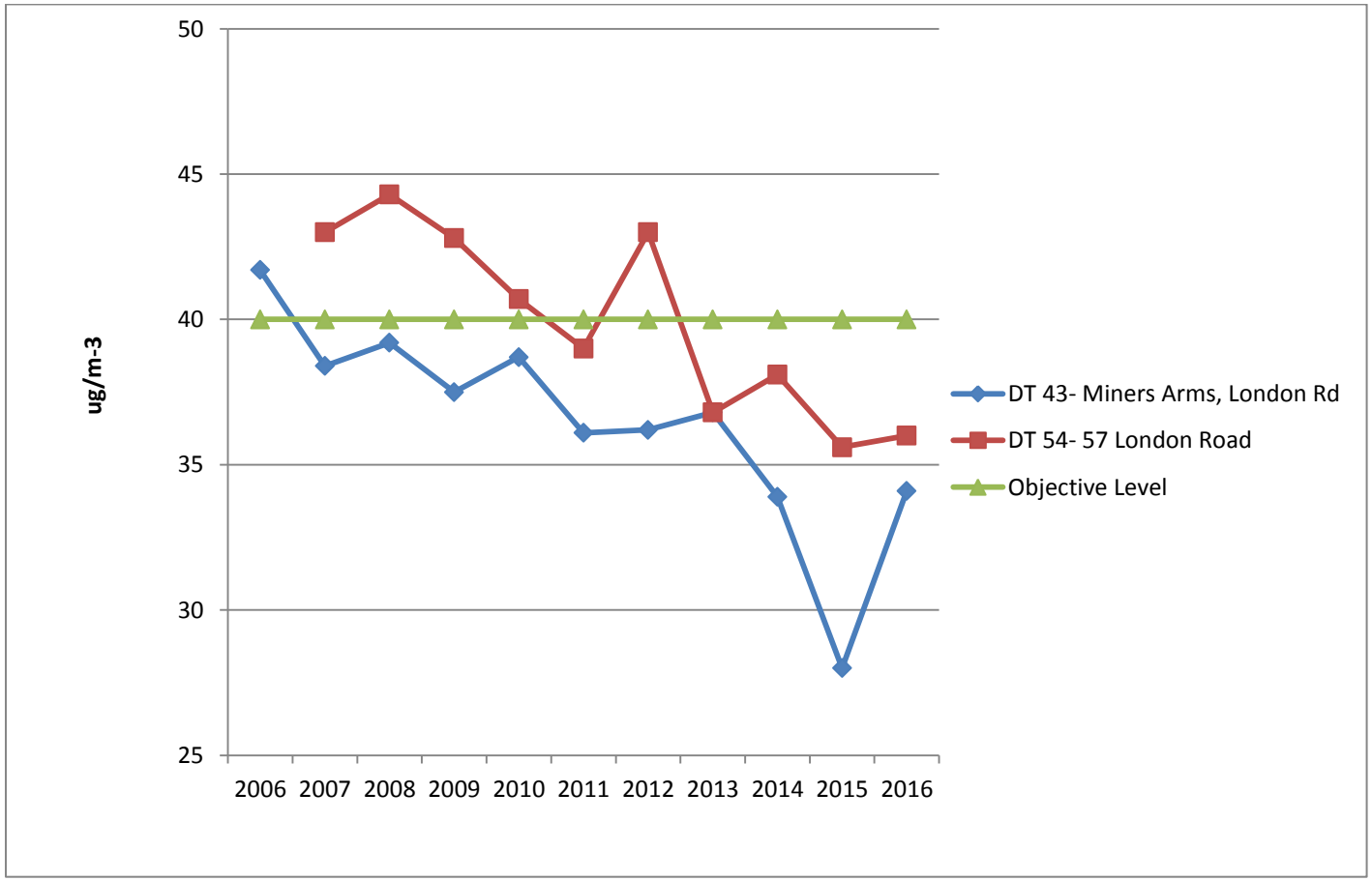

ug/m-3
65
60
55
50
45
40
35
30
2006
2007
2008
2009
2010
2011
2012
2013
2014
2015
2016
DT 23- Bat & Ball 1 (Ferrari)
DT 30- Bat & Ball 2 (Otford Rd)
DT 31- Bat & Ball 3 (Seal Rd)
DT 32- Bat & Ball 4 (St Johns)
DT 87- Bradbourne Vale Road (South)
Objective Level

Riverhead

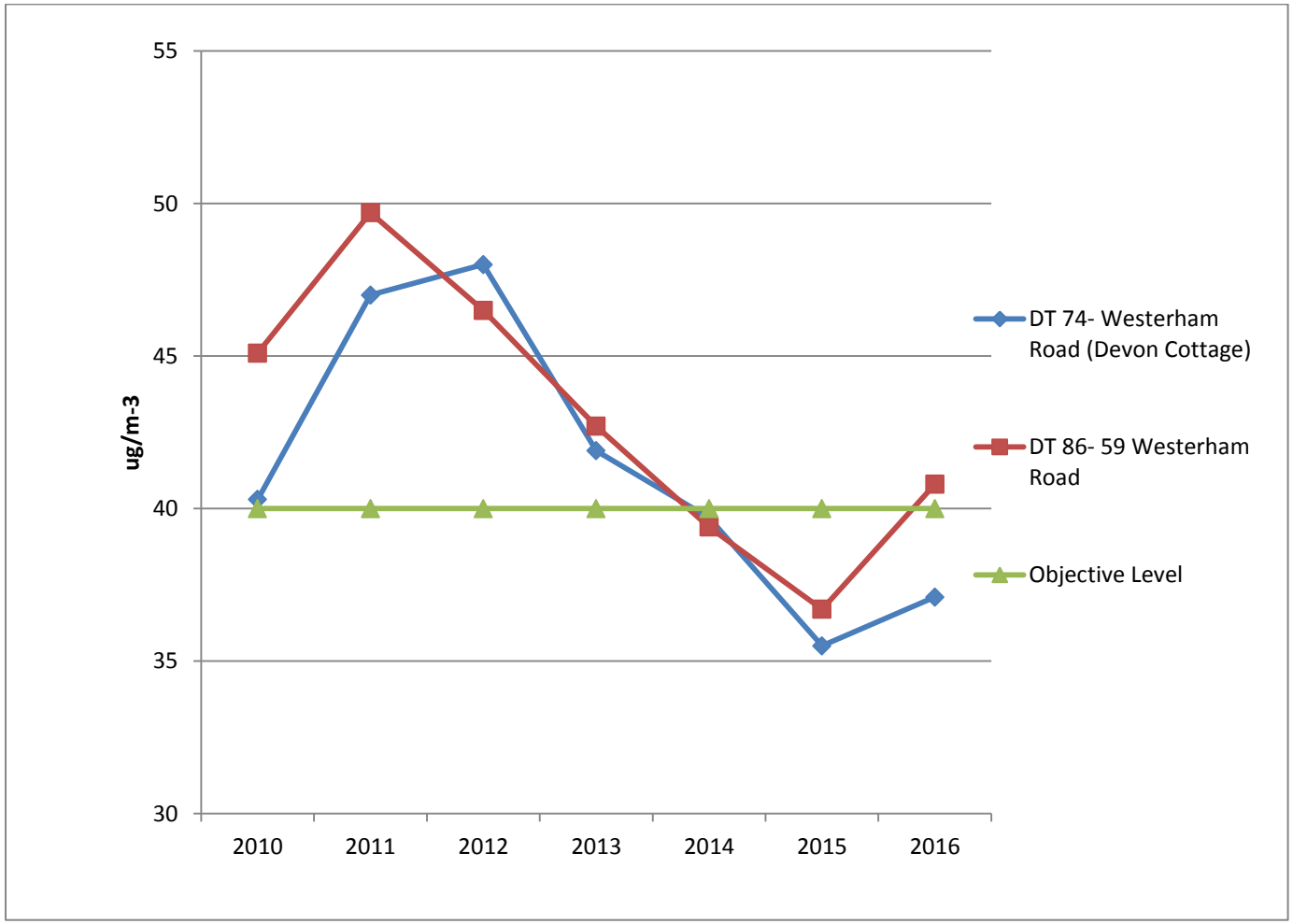

60
55
50
45
40
35
30
25
ug/m-3
2007
2008
2009
2010
2011
2012
2013
2014
2015
2016
DT 5- Riverhead 2 Laundry)
DT 6- Riverhead 3 (Opp Shops)
DT 42- 62 London Road
DT 76 - Worships Hill/Witches Lane
DT 88- Bradbourne Vale Road (North)
Objective Level


Seal
60
50
40
30
20
10
0
2006
2007
2008
2009
2010
2011
2012
2013
2014
2015
2016
DT 7- High Street East 1 (Road Sign)
DT 8 -High Street West 1 (Garage)
DT 33- High Street East 2 (Pizza)
DT 34 - High Street West 2 (Dorton House)
DT 35- Seal Hollow Rd/A25
Objective Level

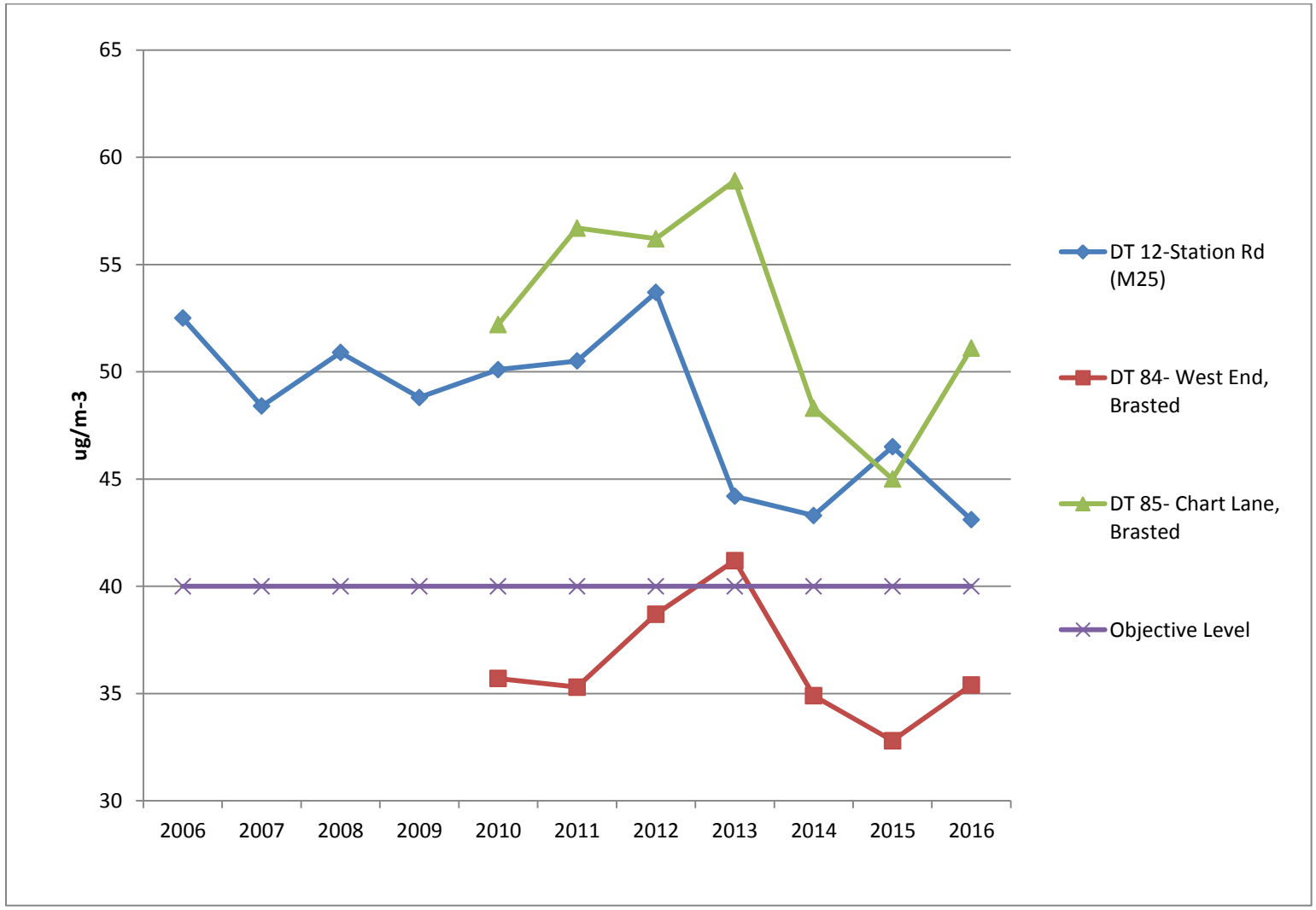
Dunton Green

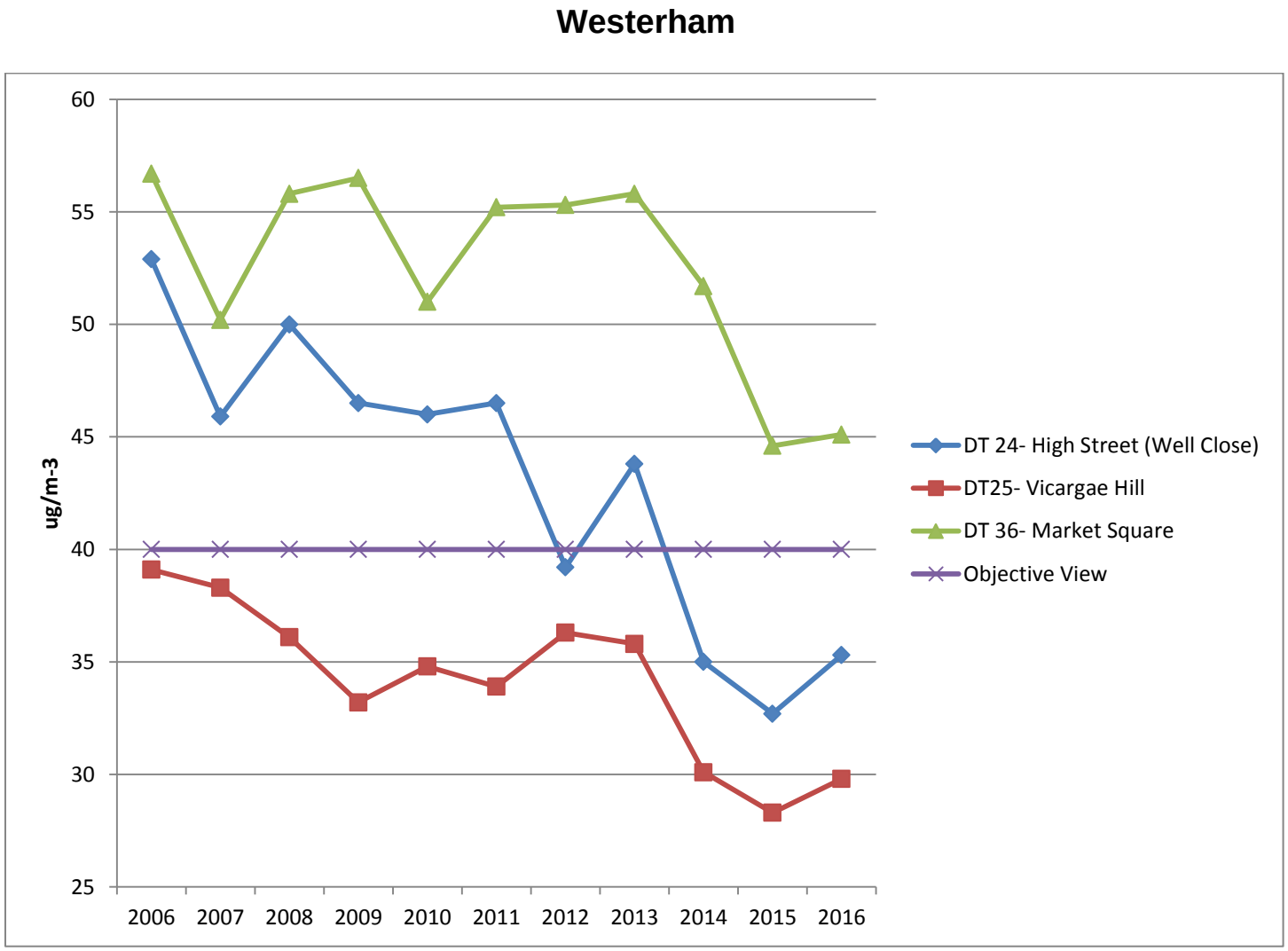


Bessels Green

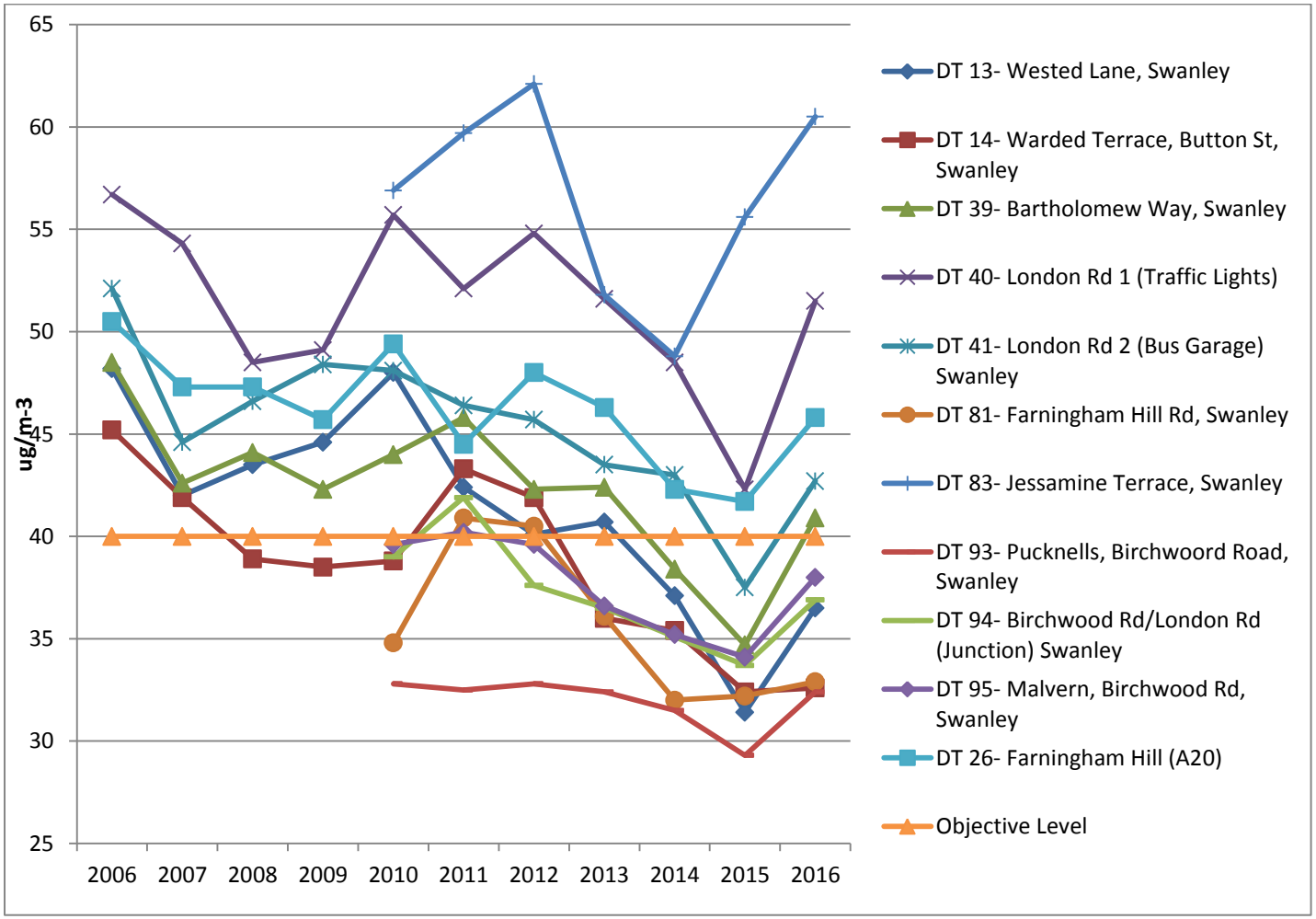


Brasted


65
60
55
50
45
40
35
30
ug/m-3
2006
2007
2008
2009
2010
2011
2012
2013
2014
2015
2016
DT 12-Station Rd (M25)
DT 84- West End, Brasted
DT 85- Chart Lane, Brasted
Objective Level


Westerham
ug/m-3
60
55
50
45
40
35
30
25
2006
2007
2008
2009
2010
2011
2012
2013
2014
2015
2016
DT 24- High Street (Well Close)
DT25- Vicargae Hill
DT 36- Market Square
Objective View

Swanley


65
60
55
50
45
40
35
30
25
ug/m-3
2006
2007
2008
2009
2010
2011
2012
2013
2014
2015
2016
DT 13- Wested Lane, Swanley
DT 14- Warded Terrace, Button St, Swanley
DT 39- Bartholomew Way, Swanley
DT 40- London Rd 1 (Traffic Lights)
DT 41- London Rd 2 (Bus Garage) Swanley
DT 81- Farningham Hill Rd, Swanley
DT 83- Jessamine Terrace, Swanley
DT 93- Pucknells, Birchwood Road, Swanley
DT 94- Birchwood Rd/London Rd (Junction) Swanley
DT 95- Malvern, Birchwood Rd, Swanley
DT 26- Farningham Hill (A20)
Objective Level

Sundridge

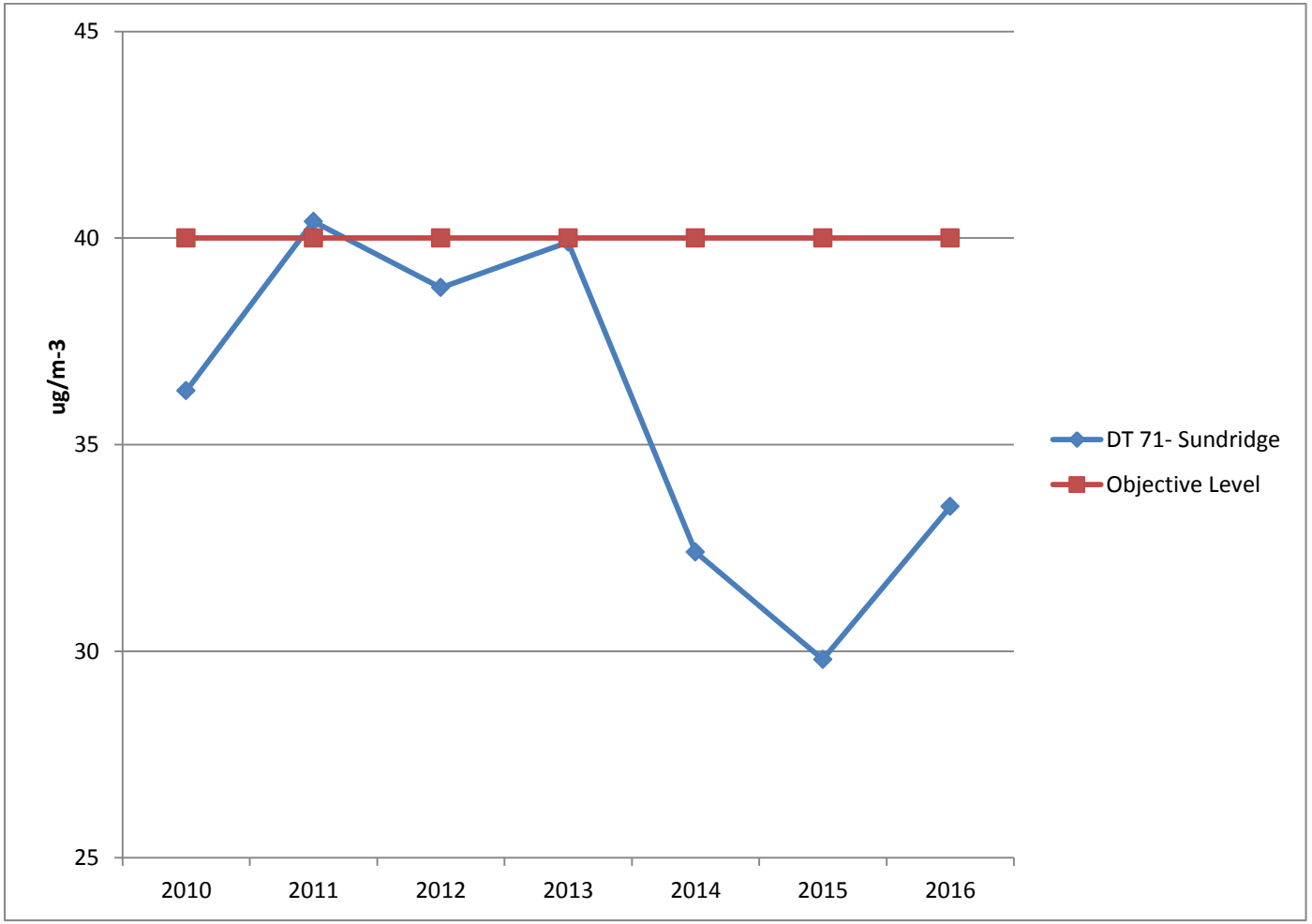

45
40
35
30
25
ug/m-3
2010
2011
2012
2013
2014
2015
2016
DT 71- Sundridge
Objective Level

Table A.4 – 1-Hour Mean NO_2 Monitoring Results

Site ID	Site Type	Monitoring Type	Valid Data Capture for Monitoring Period (%) (1)	Valid Data Capture 2016 (%) (2)	NO_2 1-Hour Means > 200µg/m^3 (3)				
					2012	2013	2014	2015	2016
CM1	Urban Background	Automatic		83	0	0	0	0	0
CM2	Roadside	Automatic		98	0	0	1	1	3

Notes:

Exceedances of the NO_2 1-hour mean objective (200µg/m^3 not to be exceeded more than 18 times/year) are shown in **bold.**

(1) Data capture for the monitoring period, in cases where monitoring was only carried out for part of the year.

(2) Data capture for the full calendar year (e.g. if monitoring was carried out for 6 months, the maximum data capture for the full calendar year is 50%).

(3) If the period of valid data is less than 85%, the 99.8th percentile of 1-hour means is provided in brackets.

Table A.5 – Annual Mean PM_{10} Monitoring Results

Site ID	Site Type	Valid Data Capture for Monitoring Period (%) (1)	Valid Data Capture 2016(%) (2)	PM_{10} Annual Mean Concentration ($\mu g/m^3$) (3)				
				2012	2013	2014	2015	2016
CM1	Urban Background		94	20	20	19	21	18
CM2	Roadside		93	-	22	21	21	21
CM3	Roadside		61	-	-	-	27*	27*

☒ **Annualisation has been conducted where data capture is <75%**

Notes:

Exceedances of the PM_{10} annual mean objective of 40µg/m^3 are shown in **bold.**

(1) Data capture for the monitoring period, in cases where monitoring was only carried out for part of the year.

(2) Data capture for the full calendar year (e.g. if monitoring was carried out for 6 months, the maximum data capture for the full calendar year is 50%).

(3) All means have been "annualised" as per Boxes 7.9 and 7.10 in LAQM.TG16, valid data capture for the full calendar year is less than 75%. See Appendix C for details.

Figure A.2 – Trends in Annual Mean PM_{10} Concentrations

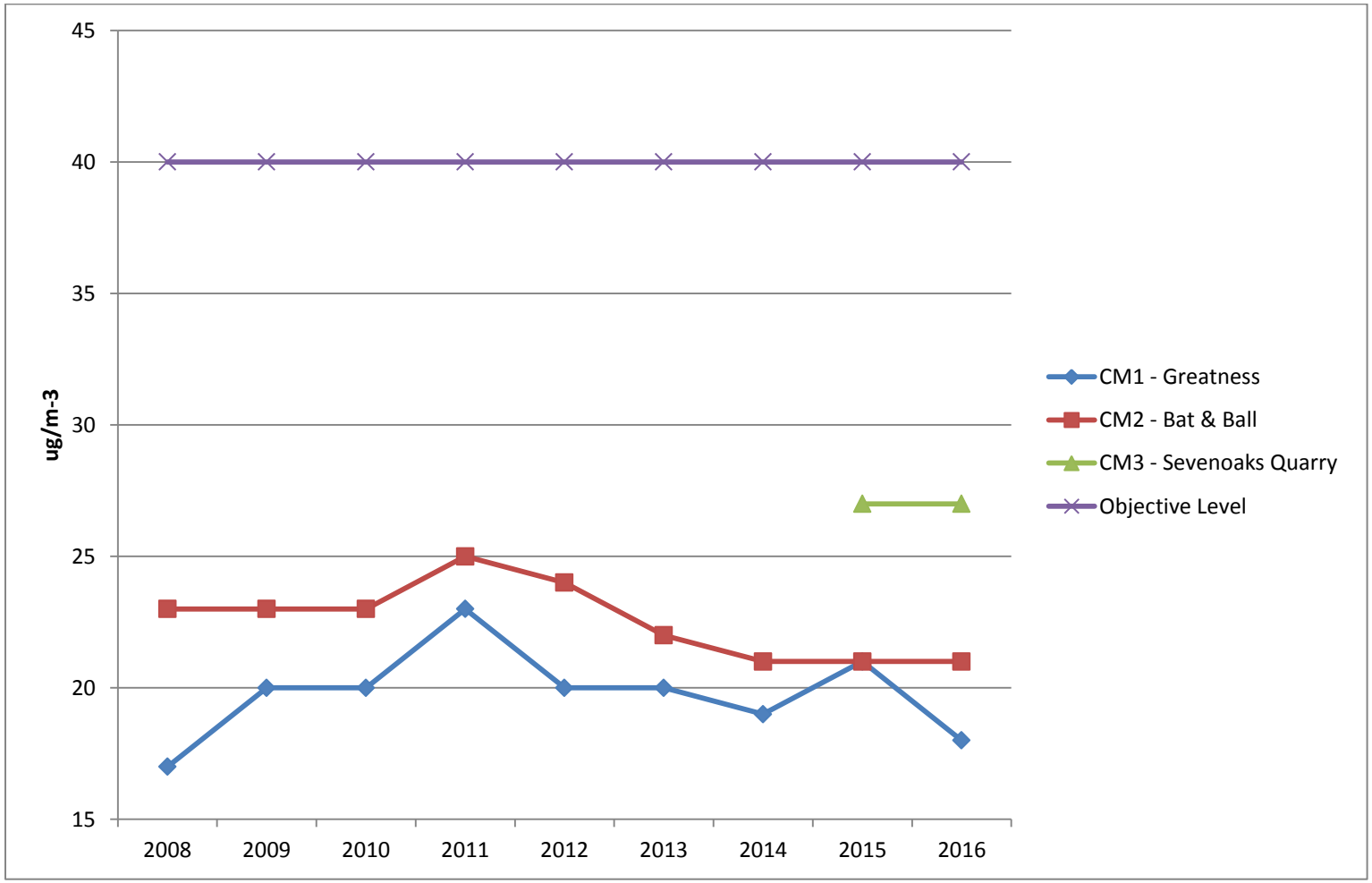


Table A.6 – 24-Hour Mean PM_{10} Monitoring Results

Site ID	Site Type	Valid Data Capture for Monitoring Period (%) (1)	Valid Data Capture 2015 (%) (2)	PM_{10} 24-Hour Means > 50µg/m^3 (3)				
				2012	2013	2014	2015	2016
CM1	Urban Background		94	12	4	5	2	0
CM2	Roadside		93	8	-	4	3	7
CM3	Roadside		61	-	-	-	4	14

Notes:

Exceedances of the PM_{10} 24-hour mean objective (50µg/m^3 not to be exceeded more than 35 times/year) are shown in **bold.**

(1) Data capture for the monitoring period, in cases where monitoring was only carried out for part of the year.

(2) Data capture for the full calendar year (e.g. if monitoring was carried out for 6 months, the maximum data capture for the full calendar year is 50%).

(3) If the period of valid data is less than 85%, the 90.4th percentile of 24-hour means is provided in brackets.

Appendix B: Full Monthly Diffusion Tube Results for 2016

Table B.1 – NO_2 Monthly Diffusion Tube Results - 2016

Site ID	NO_2 Mean Concentrations ($\mu g/m^3$)														
	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual Mean		
													Raw Data	Bias Adjusted (0.83) and Annualised (1)	Distance Corrected to Nearest Exposure (2)
2	82.6	77.9	58.9	74.3	70.5	57.9	48	49.3	70.7	71.9	79.7	70.9	65.9	54.7	**50.5**
3	15.4	18.1	16.0	18.7	14.0	11.9	8.3	9.5	14.5	16.5	23.8	20.1	15.3	12.7	N/A
5	65	61.9	55.2	63.7	64.2	50.3	49.5	39.6	59.1	54.4	67.2	62	56.7	47.0	39.5
6	75.1	60.8	57.9	68.1	65.2	59.9	39	45.1	58.2	58.5	59.5	57.7	56.8	47.1	35.6
7	59.4	63.9	56.8	66	64	52.2	47.6	48.9	61.9	57.1	54		56.5	46.8	44.9
8	45.5	47.2	36.2	50.1	45	38	29.1	28.4	37.1	43.5	61.5	49	42.4	35.2	29.9
12	50.4	77.1	68	70.6	58.3	50.2	46.4	40.7	41.3	56.5			52.0	43.1	31.4
13	70.8	40	46.9	54.2	49.7	36.6	29.4	35.8	43.5	52	50.6	44.7	44.1	36.5	30
14	58.1	52.2	38.9	41.1	36.8	28.3	29.1	34.1	40.5	35.4	51.4	57.5	39.4	32.6	36.1
23	47.7	51.1	48	45.4	55.9	44	49.8	37	48.4	54.6	62.6	42	48.9	40.5	30.1
24	40.4	45	39.5	51.6	48.2	40	26.1	28.2	36.5	53.7	54.9	43.7	42.5	35.3	27.9
25	39.9	46.7	31.8	43.9	39	31.2	27.8	32.7	33.1	38.1	43.3	34.4	35.9	29.8	25.4
26	54.3	61.8	58.9	63.4	61.6	52.9	38.2	45.2	57.8	58.1	66.8	53	55.2	45.8	32.7
27	45.5	54.9	48.5	53.8	49.7	43.2	37.7	35.1	40.9	51.2	62.1	57.7	47.9	39.8	40
28	64.7	63.8	*0.6	47.7				39.6	53.5	48.2	63.9	51	50.7	44.1	42

29	43.5	43.7	39.1	42.8	40.2	32.7	25.4	28.4	36.5	36.8	47.2	51.3	37.9	31.5	27.1
30	46.9	58.7	46	51.9	50.7	38.3	31.8	32	42.3		56	45.6	43.6	36.1	26.5
31	71.1	67.9	59	78.3	74.4	66.4	53.8	57	73.8	66.7	91.5	66.5	69.8	57.9	46.1
32	61.6	71.8	65.9	87.6	63.8	62.5	49.7	48.8	62.2	75.3	87.5	73.9	67.9	56.3	58.8
33	54.9	58.3	60.9	67.4	61.4	56.2	44.3	39.3	57.4	57.2	74.3	64.5	58.0	48.1	45.2
34	44.2	39	34.7	43.7	37.9	30.1	30.1	30.7	34.7	44.1	47.8	45	38.2	31.7	20.7
35	43.3	48.9	41	49.5	51.2	47.7	36.6	39.8	51.8	47.6	55	51	47.8	39.6	24.9
36	67.6	58.8	58.1	53.4	61	42.2	50.1	52.2	60.2	56.9		59.5	54.4	45.1	35.7
39	52.7	50.3	55.4	54.3	46.9	40.5	38.5	39.9	52.7	47.3	62.8	61.4	49.4	40.9	30.3
40	53.6	61.1	59.7	67.8	72.3	52.5	64.3	44.3	55.6	65.8	69.3	67.2	62.1	51.5	36.4
41	59.9	51.4	52.7	54.8	55.2	41.8	38.9	42.7	49.9	54.3	64.4	61.9	51.5	42.7	33.4
42	51.2	35.9	40	53.4	51.5	43.5	36.2	36	50.3	47.1	54.1	54.6	47.4	39.3	36.2
43	41.8	46.5	42.7		47.2	39.2	26.1	23.8	40.7	44.9	54.1	53	41.1	34.1	29.6
48	36.7	38.5	34.2	47.9	33.5	25.2	24.8	26.6	30.1		46		33.4	27.7	27.6
49	39.6	45.5	41.9	37.8	45	38.4	26.4	30.7	40.5	48.2	53.5	45.5	40.7	33.7	33.5
51	48	41.7	47.8	58.4	54.3	40.7	30.3	35.9	45.5	51.5	60.8	61.5	48.8	40.4	36.1
52	44	54.6	49.7	54.3	52	44.5	34.4	39.4	47.5	48.7	61.9	32.6	46.1	38.3	30
54	48.4	50.2	47.4	44	49.7	41.4	37.3	35.5	48.4	42.8	51.3	40.2	43.4	36.0	27.4
71	45.3	38.7	42.1	48.8	37.4	33.1	29.2	30.1	36.5	42.7	52.7	53.2	40.4	33.5	25.9
74	56.1	54.8	49.2	55.9	50.2	38.8	32.3	34.4	42.4	44.1	48.6	55.5	44.7	37.1	24.6
76	43.9	53.3	52	55.1	47.1	45.2	39.7	38	47.2	52.6	60.6	48.1	48.2	40.0	20.3
77	40	54.7	50.9	60	56.3	45.7	31.6	34.8	48.1	47.7	60.2	50.1	48.3	40.0	39
81	52.4	39.3	47.6	44.3	42.1	25.5	32.5	33	43.1	33.9	57	45.2	39.6	32.9	32.7
83	66.1	71.1	74.9	80	62.7	55.6	74.5	68.1	76.6	63.4	90.3	85.6	73.0	60.5	52.8
84	47.6	50.3	39.9	48.9	46.1	41.1	29.4	32.3	37.2	41.2	53.1	54.6	42.7	35.4	29.6
85	63.8	64.3	53.3	74.7	61.3	61.1	49.2	45.5	56.9	63.7	66.2	76.2	61.6	51.1	50.2
86	58.1	59	47.6	55.1	48.2	40.4	*4.3	38.2	52.6	50.5	52.7	56.1	49.2	40.8	30.3

87	47.7	72.5	54.2	71.8	68.3	53	51.8	53.4	66.1	59.2	72.5	65.1	62.4	51.7	43.3
88	38.3	43.7	40.7	47.9	41	39.1	30.6	29.9	38.5	42.4	48	40.1	39.7	32.9	24.2
90														36.9	27.6
93	42.9	37.5	47.8	45.6	44	35.2	23	28.9	39.2	41.8	53.8	39.8	39.0	32.4	25.8
94	48.2	34.9		46.5	47.7	36.9	33.1	36.7	43.4	45.8	53.7	56.3	44.5	36.9	35
95	51.4	42.4	43.6	52.4	43.5	37.8	34.8	38	43.1	49.6	63.1	50	45.8	38.0	27.9

☒ **Local bias adjustment factor used**

☒ **National bias adjustment factor used**

☒ **Annualisation has been conducted where data capture is <75%**

Notes:

Exceedances of the NO_2 annual mean objective of 40µg/m^3 are shown in **bold**.

NO_2 annual means exceeding 60µg/m^3, indicating a potential exceedance of the NO_2 1-hour mean objective are shown in **bold and underlined.**

(1) See Appendix C for details on bias adjustment and annualisation.

(2) Distance corrected to nearest relevant public exposure.

Appendix C: Supporting Technical Information / Air Quality Monitoring Data QA/QC

Due issues at the DT28 (High Street North 2) diffusion tube site, the data capture was less than 75%. Therefore this data has been annualised using the methodology within LAQM (TG16).

	DT28	Derived DT28	Greatness Background site µg/m3	Greatness Ratio Period to year	Maidstone Rural Background site µg/m3	Maidstone Rural Backgropund Period to year	Mean Ratio
Period 1 Jan - Feb	64.7	-	21.95	1.257879656	15.68	1.257417803	1.257648729
Period 2 March	-	67.86712068	23.18	1.328366762	16.82	1.348837209	1.338601986
Period 3 April	47.7	-	17.78	1.018911175	13.3	1.066559743	1.042735459
Period 4 May -July	-	34.56477798	13.13	0.75243553	7.62	0.61106656	0.681751045
Period 5 Aug - Dec	51.24	-	17.2	0.985673352	13.25	1.06255012	1.024111736
Annual Average	50.7		17.45		12.47		
Adjusted annual average	**53.21437973**						

The District Council currently has three operating continuous automatic monitoring sites (CMS) both in the Sevenoaks town urban area. The Greatness background site has monitored 3 pollutants (NOx, PM10 & O3) since 1997. The Bat & Ball roadside site has monitored NOx and PM10 since 2006. The Sevenoaks Quarry CMS commenced monitoring for PM10 mid July 2015.

Local site operations and routine calibration/maintenance are carried out under contract by ERG Kings College London with service contract work by ESU1. 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.

Diffusion Tubes:

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.

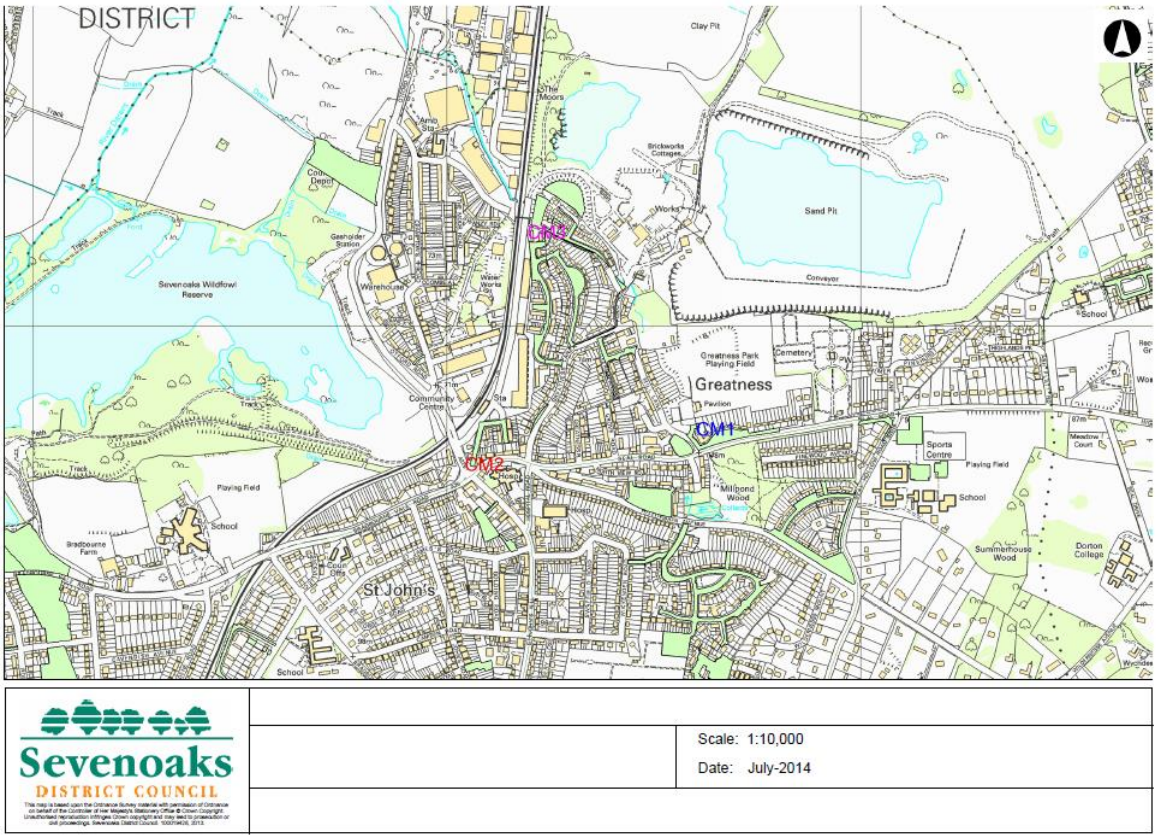
The laboratory confirms it follows the procedures set out in the Harmonisation Practical Guidance and that it is ranked ‘Good’ in the WASP inter-comparison scheme.

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

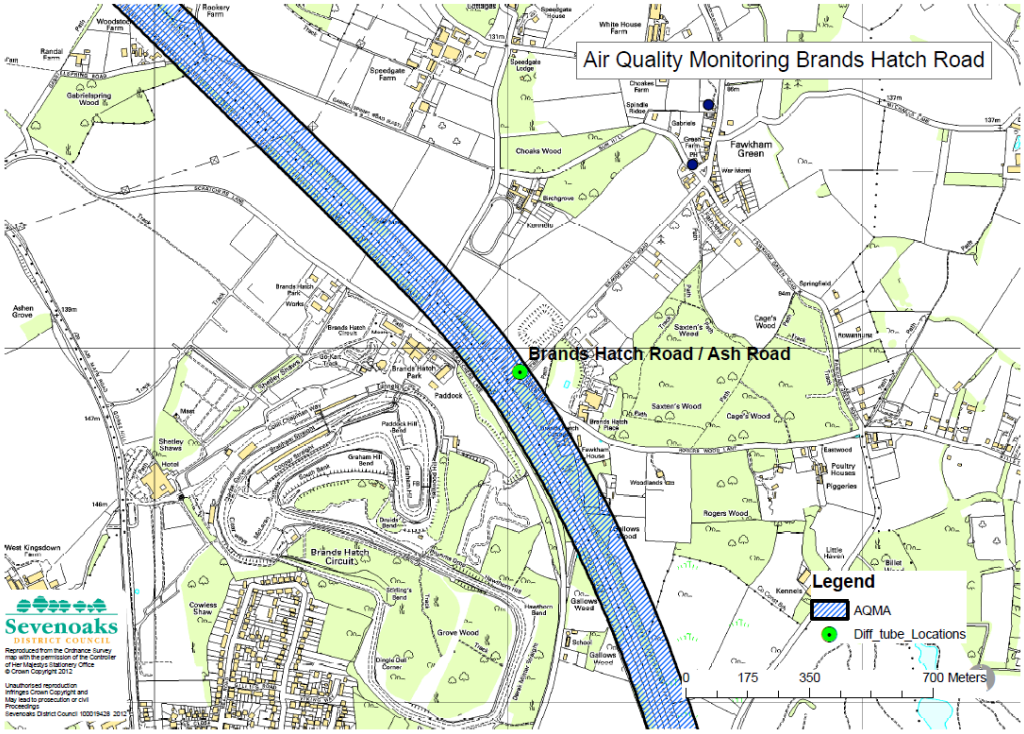
The locally derived Bias Factor from the above co-location study for 2016 was 0.83.

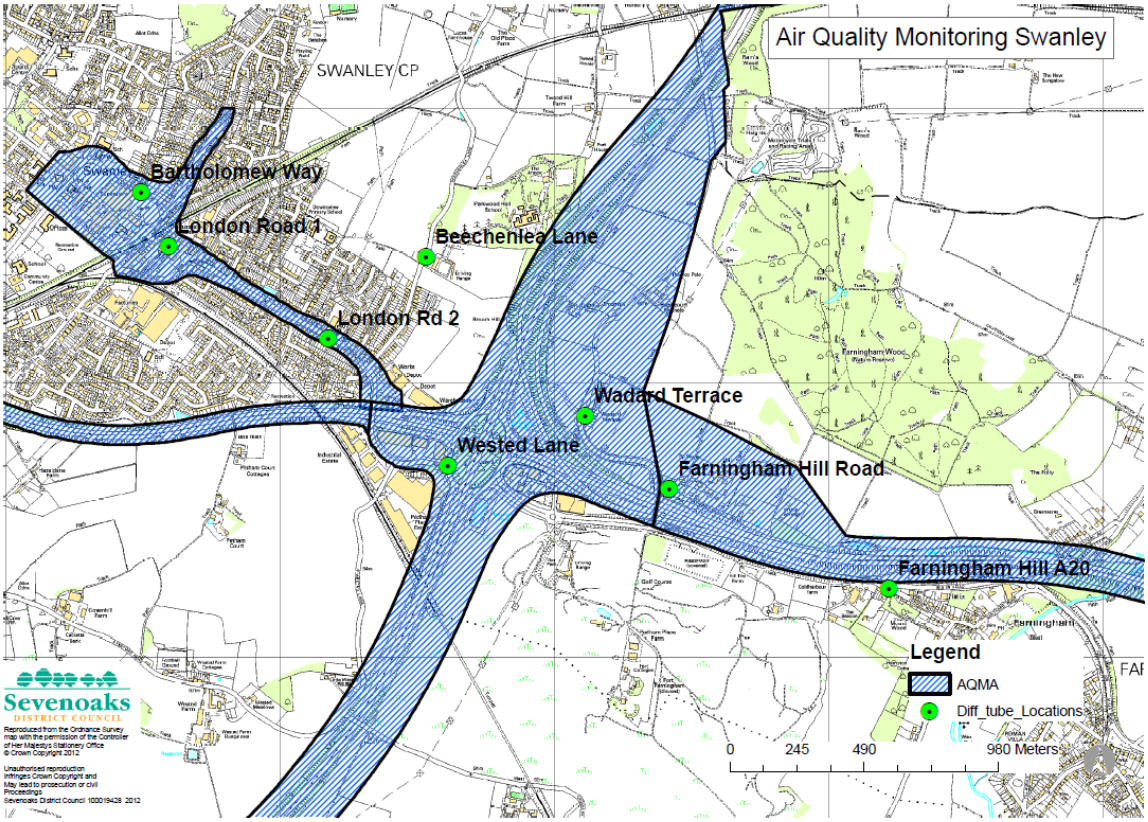
Appendix D: Map(s) of Monitoring Locations and AQMAs

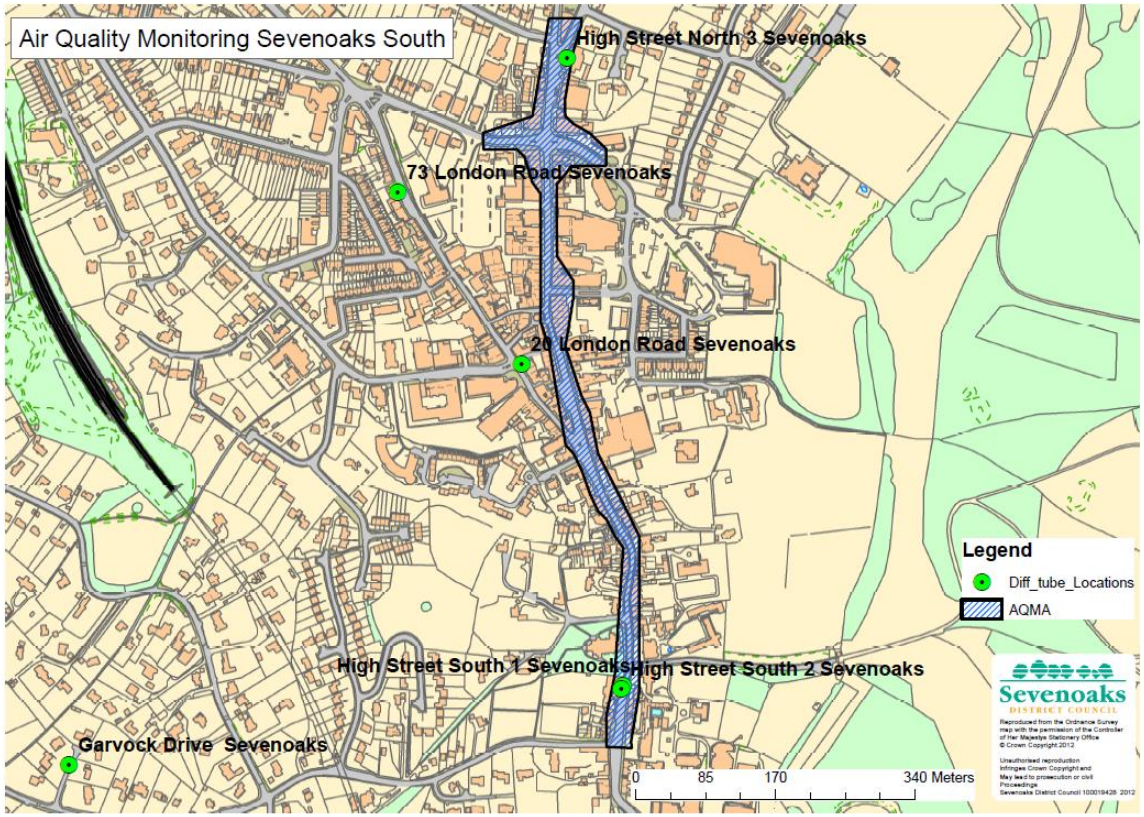
Automatic Monitoring Stations

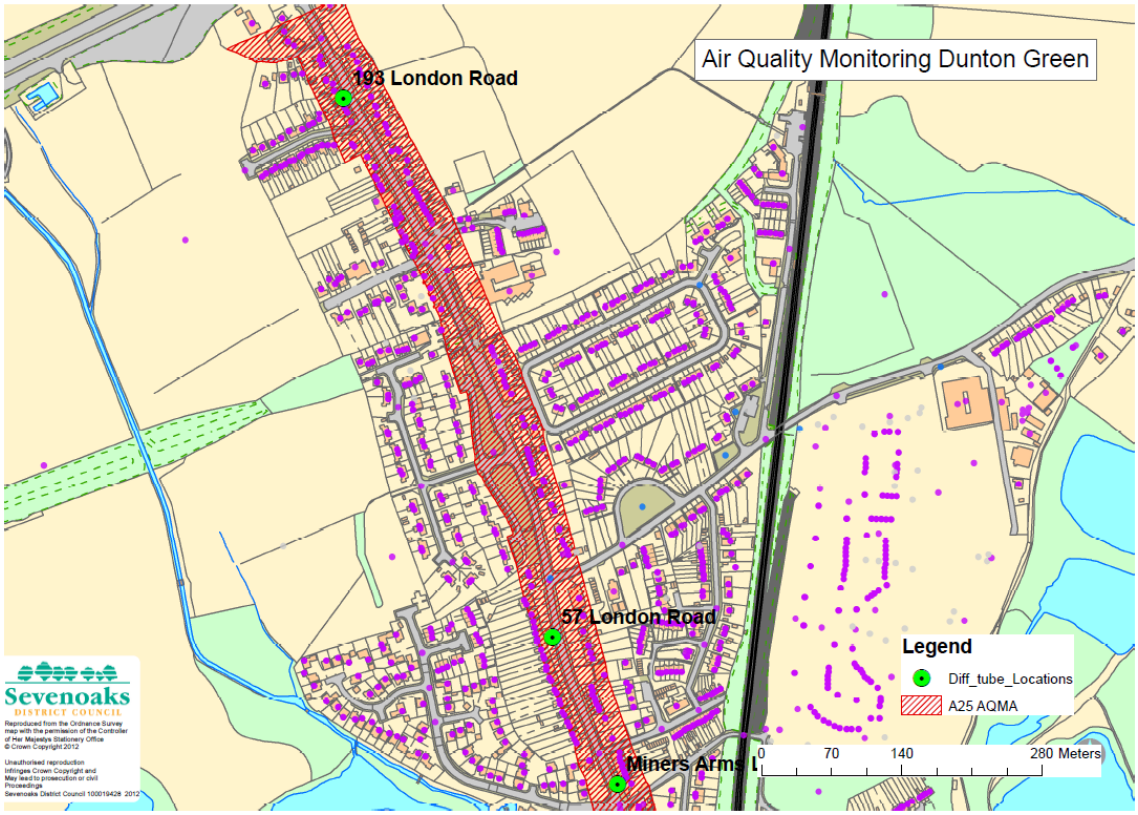


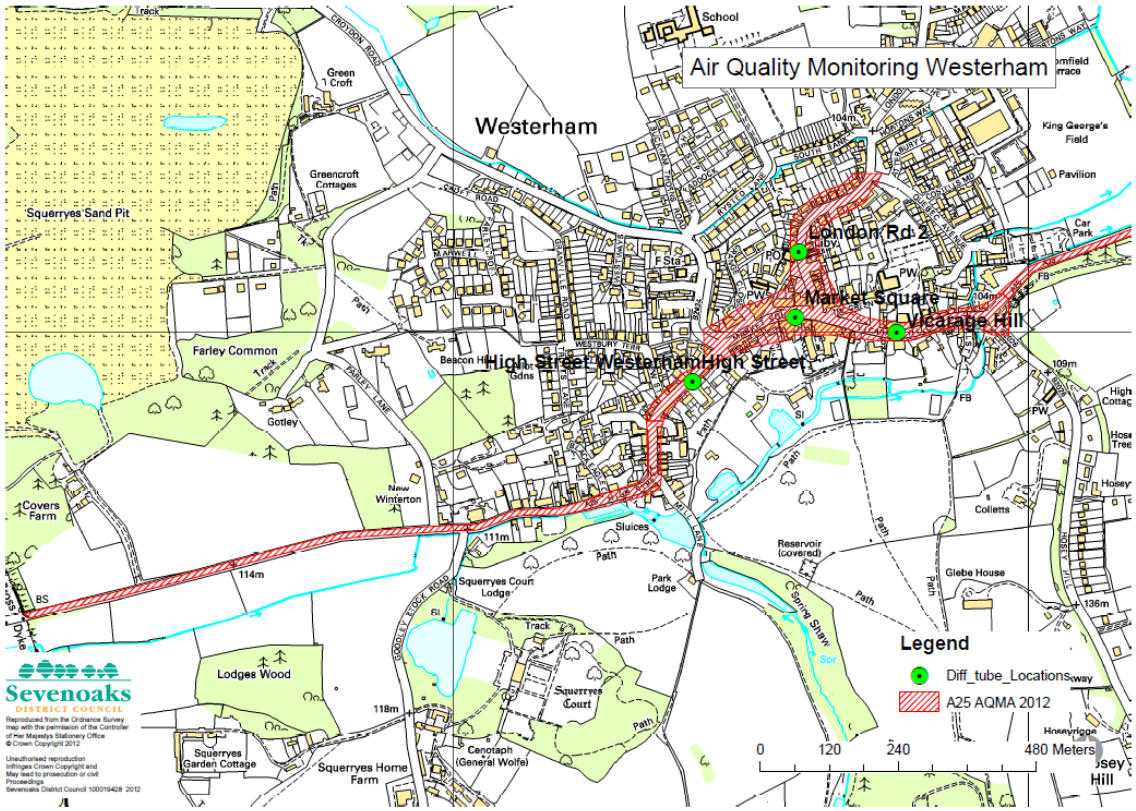
Diffusion Tube Locations

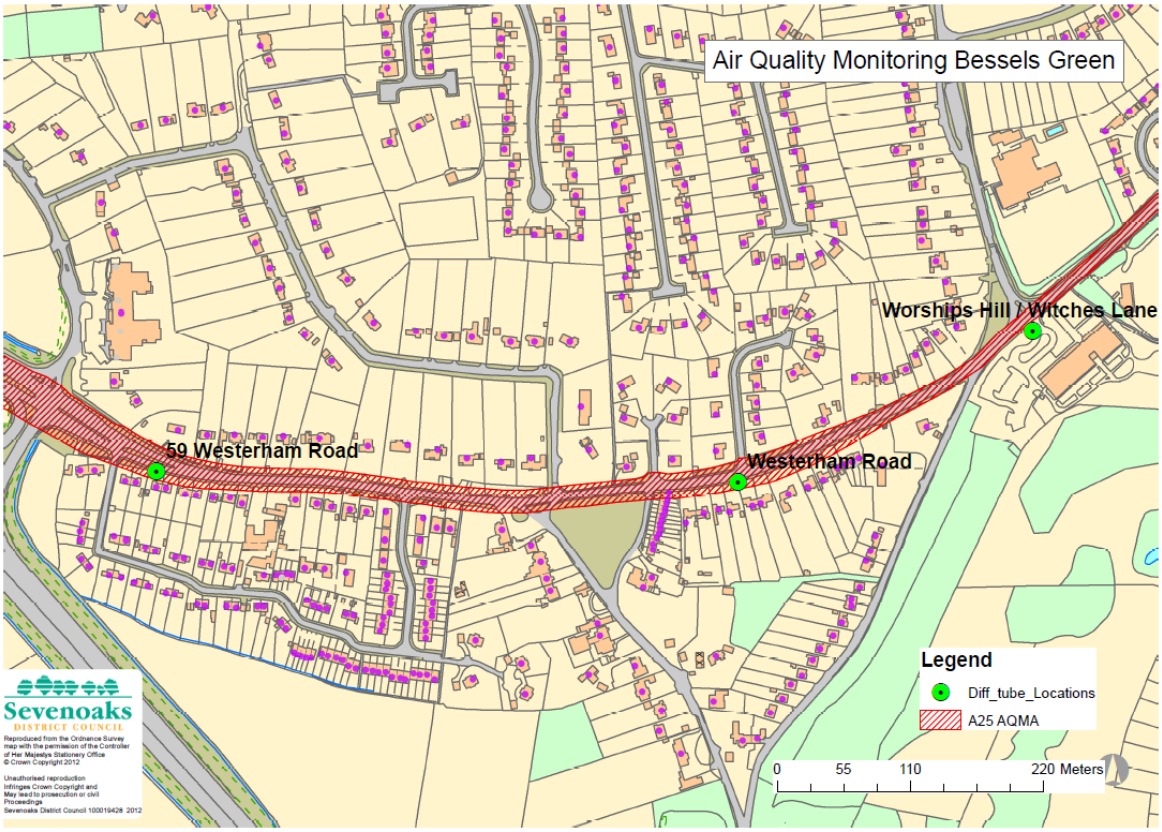


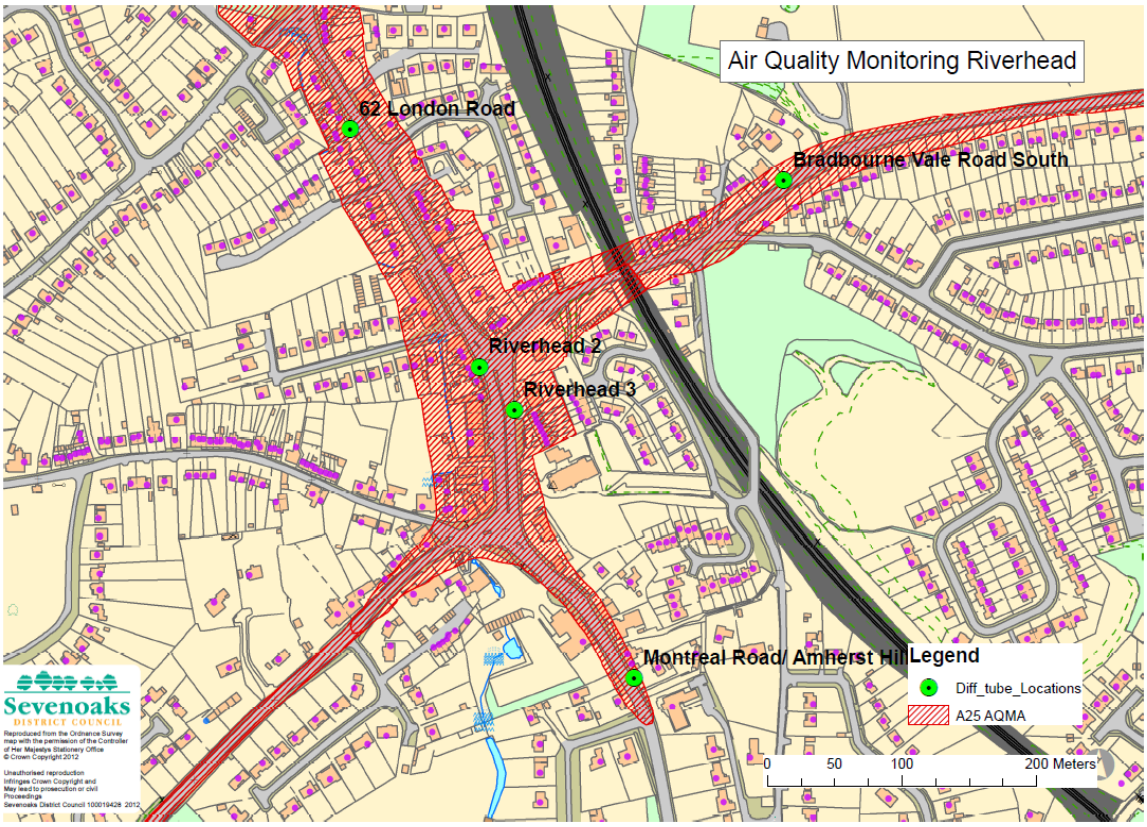

Air Quality Monitoring Swanley
SWANLEY CP
Bartholomew Way
London Road 1
Beechenlea Lane
London Rd 2
Wadard Terrace
Wested Lane
Farningham Hill Road
Farningham Hill A20
Legend
AQMA
Diff_tube_Locations
0
245
490
980 Meters
Sevenoaks
DISTRICT COUNCIL

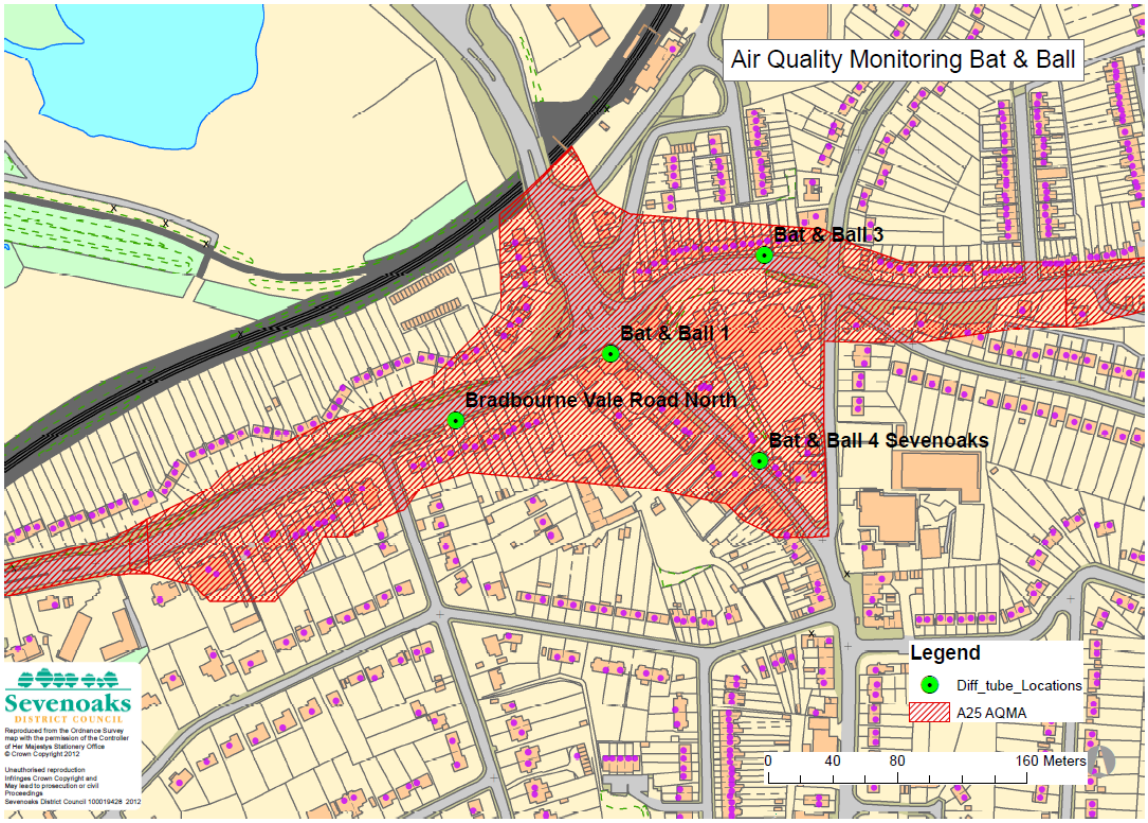

Air Quality Monitoring Sevenoaks South
High Street North 3 Sevenoaks
73 London Road Sevenoaks
20 London Road Sevenoaks
High Street South 1 Sevenoaks
High Street South 2 Sevenoaks
Garvock Drive Sevenoaks
Legend
Diff_tube_Locations
AQMA
0
85
170
340 Meters
Sevenoaks
DISTRICT COUNCIL

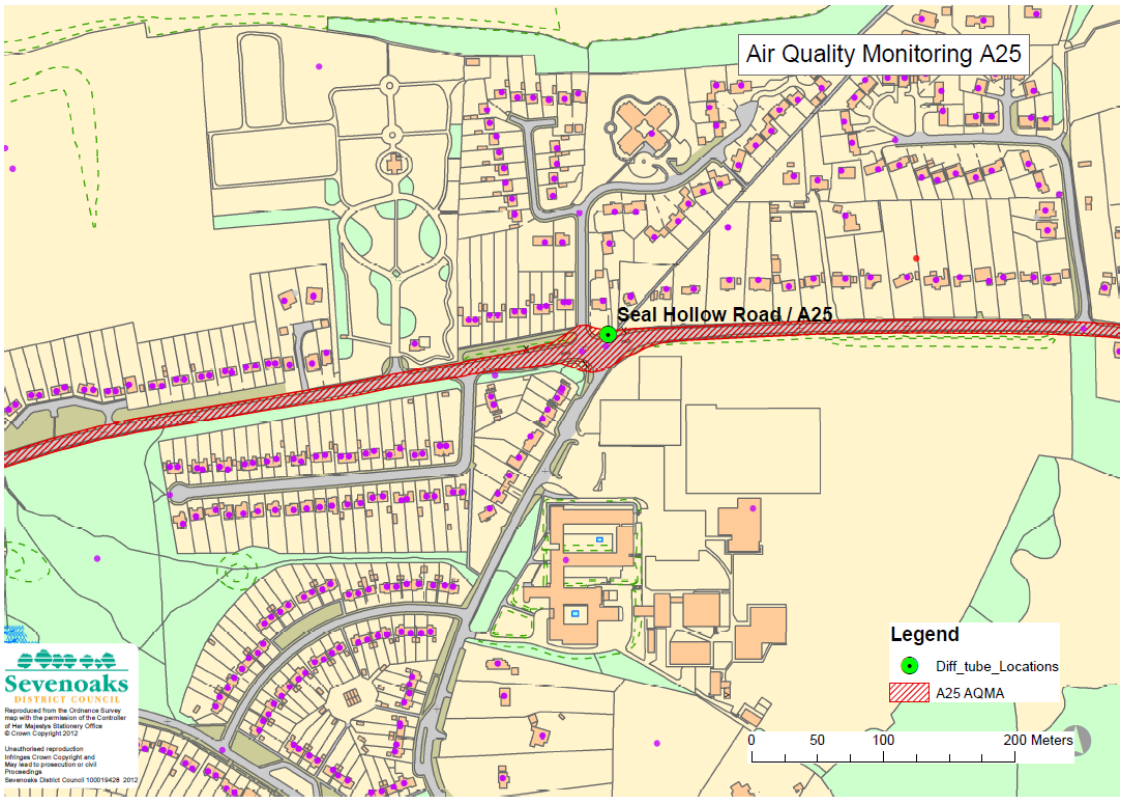

Air Quality Monitoring Dunton Green
193 London Road
57 London Road
Miners Arms
Legend
Diff_tube_Locations
A25 AQMA
0
70
140
280 Meters
Sevenoaks
DISTRICT COUNCIL

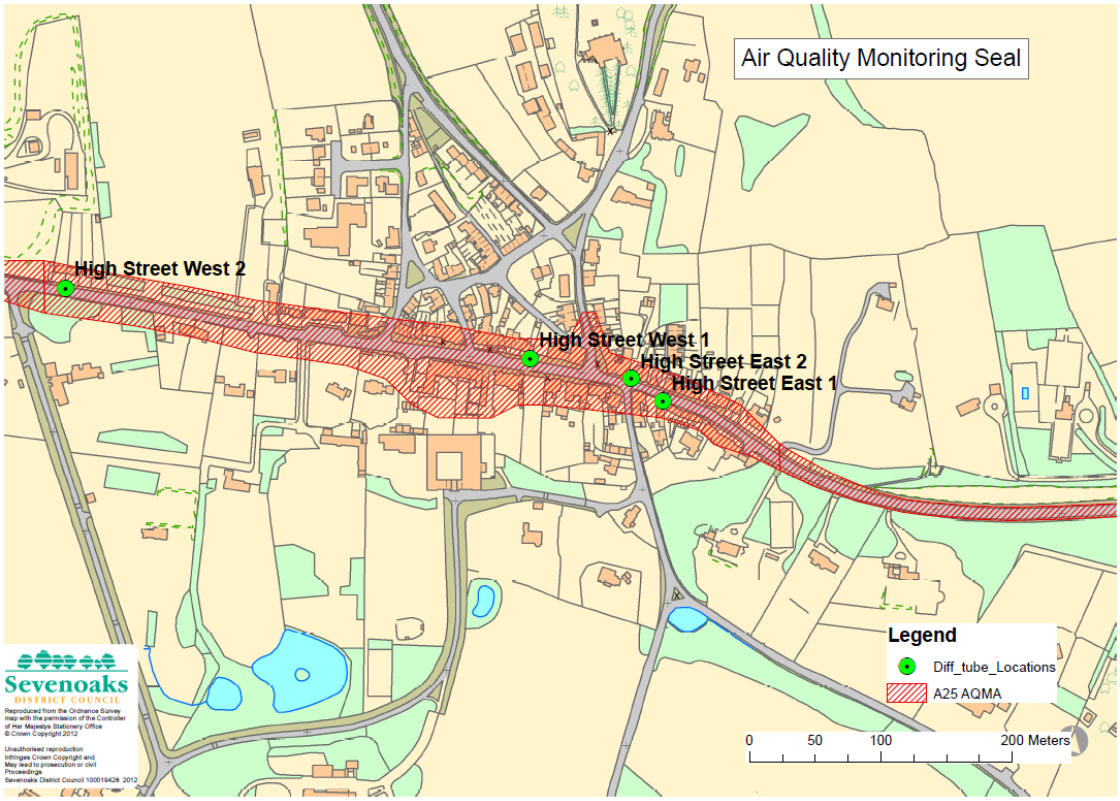

Air Quality Monitoring Westerham
Westerham
London Rd 2
Market Square
Vicarage Hill
High Street Westerham
High Street
Squerryes Sand Pit
Farley Common
Gotley
Covers Farm
New Winterton
Squerryes Court Lodge
Park Lodge
Squerryes Court
Lodges Wood
Squerryes Garden Cottage
Squerryes Home Farm
Cenotaph (General Wolfe)
Sluices
Reservoir (covered)
Glebe House
Colletts
Spring Shaw
Legend
Diff_tube_Locations
A25 AQMA 2012
0
120
240
480 Meters
Sevenoaks
DISTRICT COUNCIL

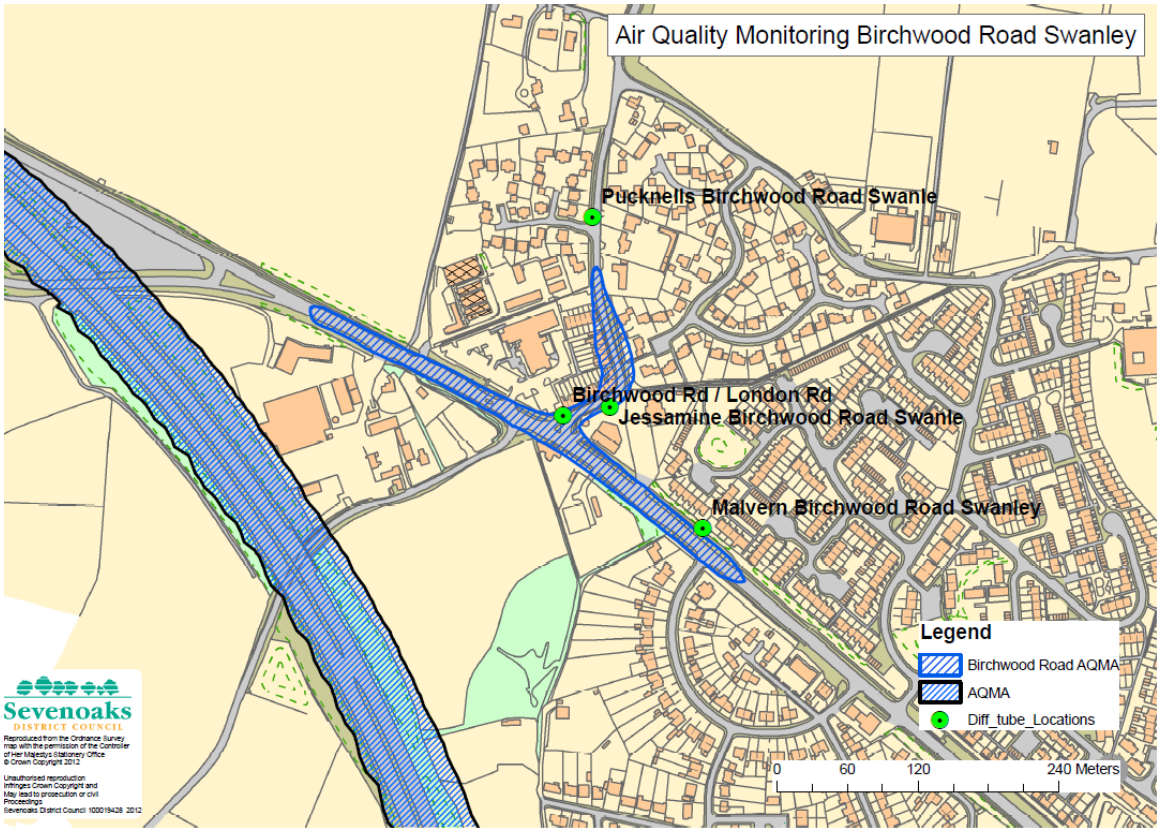

Air Quality Monitoring Bessels Green
Worships Hill / Witches Lane
59 Westerham Road
Westerham Road
Legend
Diff_tube_Locations
A25 AQMA
0
55
110
220 Meters
Sevenoaks
DISTRICT COUNCIL

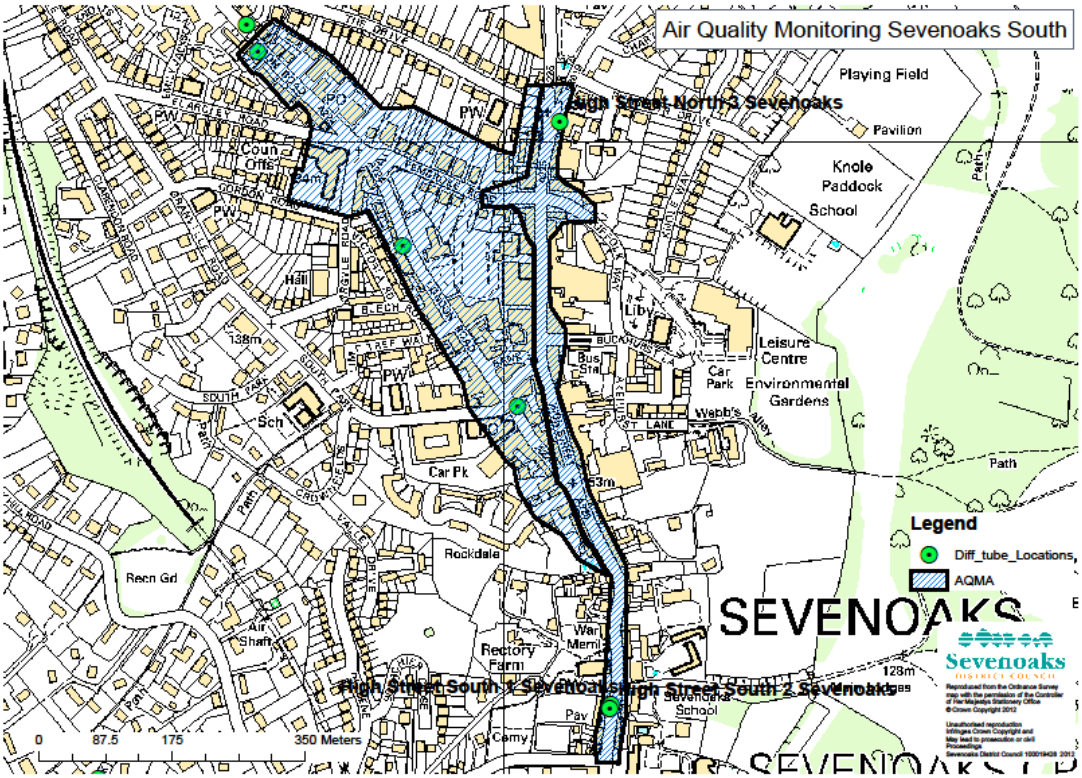

Air Quality Monitoring Riverhead
62 London Road
Bradbourne Vale Road South
Riverhead 2
Riverhead 3
Montreal Road/ Amherst Hill
Legend
Diff_tube_Locations
A25 AQMA
0
50
100
200 Meters
Sevenoaks
DISTRICT COUNCIL


Air Quality Monitoring Bat & Ball
Bat & Ball 3
Bat & Ball 1
Bradbourne Vale Road North
Bat & Ball 4 Sevenoaks
Legend
Diff_tube_Locations
A25 AQMA
0
40
80
160 Meters
Sevenoaks
DISTRICT COUNCIL


Air Quality Monitoring A25
Seal Hollow Road / A25
Legend
Diff_tube_Locations
A25 AQMA
0
50
100
200 Meters
Sevenoaks
DISTRICT COUNCIL


Air Quality Monitoring Seal
High Street West 2
High Street West 1
High Street East 2
High Street East 1
Legend
Diff_tube_Locations
A25 AQMA
0
50
100
200 Meters
Sevenoaks
DISTRICT COUNCIL


Air Quality Monitoring Birchwood Road Swanley
Pucknells Birchwood Road Swanle
Birchwood Rd / London Rd
Jessamine Birchwood Road Swanle
Malvern Birchwood Road Swanley
Legend
Birchwood Road AQMA
AQMA
Diff_tube_Locations
0
60
120
240 Meters
Sevenoaks
DISTRICT COUNCIL


Air Quality Monitoring Sevenoaks South
High Street North 3 Sevenoaks
High Street South 1 Sevenoaks
High Street South 2 Sevenoaks
Playing Field
Pavilion
Knole Paddock School
Leisure Centre
Car Park
Environmental Gardens
Webb's Alley
Path
Car Pk
Rockdale
Recn Gd
Air Shaft
War Mem
Rectory Farm
Sevenoaks School
Pav
Camy
SEVENOAKS
Legend
Diff_tube_Locations
AQMA
0
87.5
175
350 Meters

Appendix E: Summary of Air Quality Objectives in England

Table E.1 – Air Quality Objectives in England

Pollutant	Air Quality Objective[4]	
	Concentration	Measured as
Nitrogen Dioxide (NO_2)	200 µg/m^3 not to be exceeded more than 18 times a year	1-hour mean
	40 µg/m^3	Annual mean
Particulate Matter (PM_{10})	50 µg/m^3, not to be exceeded more than 35 times a year	24-hour mean
	40 µg/m^3	Annual mean
Sulphur Dioxide (SO_2)	350 µg/m^3, not to be exceeded more than 24 times a year	1-hour mean
	125 µg/m^3, not to be exceeded more than 3 times a year	24-hour mean
	266 µg/m^3, not to be exceeded more than 35 times a year	15-minute mean

[4] The units are in microgrammes of pollutant per cubic metre of air (µg/m^3).

Glossary of Terms

Abbreviation	Description
AQAP	Air Quality Action Plan - A detailed description of measures, outcomes, achievement dates and implementation methods, showing how the local authority intends to achieve air quality limit values'
AQMA	Air Quality Management Area – An area where air pollutant concentrations exceed / are likely to exceed the relevant air quality objectives. AQMAs are declared for specific pollutants and objectives
ASR	Air quality Annual Status Report
Defra	Department for Environment, Food and Rural Affairs
DMRB	Design Manual for Roads and Bridges – Air quality screening tool produced by Highways England
EU	European Union
FDMS	Filter Dynamics Measurement System
LAQM	Local Air Quality Management
NO_2	Nitrogen Dioxide
NO_x	Nitrogen Oxides
PM_{10}	Airborne particulate matter with an aerodynamic diameter of 10µm (micrometres or microns) or less
$PM_{2.5}$	Airborne particulate matter with an aerodynamic diameter of 2.5µm or less
QA/QC	Quality Assurance and Quality Control
SO_2	Sulphur Dioxide
…	…

References

Defra - Local Air Quality Management Technical Guidance (TG16) (2016)

Defra - Local Air Quality Management Policy Guidance (PG16) (2016)

Kent County Council - Local Transport Plan: Delivering Growth without Gridlock (2016)

Sevenoaks District Council - Updating and Screening Assessment (2015)

Sevenoaks District Council – Air Quality Annual Status Report (2016)