



## 2018 Air Quality Annual Status Report (ASR)

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

## Sevenoaks District Council

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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.

Monitoring in 2017 shows a fall in Annual Mean NO<sub>2</sub> concentrations at all monitoring locations (with the exception of DT48). These reductions are in line with a general trend of reducing NO<sub>2</sub> levels over the past 5 years. At seven monitoring locations NO<sub>2</sub> levels have now fallen below objective levels. It should be recognised that reductions in NO<sub>2</sub> can be as a result of fortuitous weather conditions however if trends continue the District Council may be able to consider the revocation or modification of some the existing Air Quality Management Areas.

There have been no significant changes in PM<sub>10</sub> at Greatness or Bat and Ball Automatic Monitoring Stations.

In July 2015 the District Council commenced monitoring of PM<sub>10</sub> at Sevenoaks Quarry. In 2017 there were no exceedances of the objective levels (85% capture) and therefore the District Council is not required to declare an AQMA and the site will be closed.

## 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<sup>1,2</sup>.

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<sup>1</sup> Environmental equity, air quality, socioeconomic status and respiratory health, 2010

<sup>2</sup> Air quality and social deprivation in the UK: an environmental inequalities analysis, 2006

The annual health cost to society of the impacts of particulate matter alone in the UK is estimated to be around £16 billion<sup>3</sup>.

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 14 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. All but one monitoring site shows a decrease in pollution across the district in comparison to previous years. The monitoring site at 73 London Road, Sevenoaks (DT48) has indicated a breach of the NO<sub>2</sub> annual mean objective. Data from this site maybe skewed by an uncharacteristically high tube result for August, however using the guidance there is no obvious reason to disregard the data.

Over recent years, monitoring at the Sevenoaks Quarry site has shown no breaches of the objective levels and therefore the site will be decommissioned shortly.

## **Actions to Improve Air Quality**

The primary source of air pollution within the district is 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.

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<sup>3</sup> Defra. Abatement cost guidance for valuing changes in air quality, May 2013

## Conclusions and Priorities

Pollution levels have fallen in all locations across the district bar two sites. The diffusion tube DT 48 recorded a result of 40.7 in comparison to the previous year's 27.7. This may be due to an anomaly with the tube in the month of August which provided an exceptionally high reading in comparison to other tubes, however there appears to be no valid reason to exclude the data.

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 2017. 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 (AQMA)s 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 AQMA)s declared by Sevenoaks District Council can be found in Table 2.1. Further information related to declared or revoked AQMA)s, 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 AQMA)s, 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 <sub>2</sub> 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		41.8 (DT26)	<a href="http://www.sevenoaks.gov.uk/services/community-and-living/pollution/air-quality">http://www.sevenoaks.gov.uk/services/community-and-living/pollution/air-quality</a>
AQMA 2	1/3/02	NO <sub>2</sub> 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		40.0 (DT12)	<a href="http://www.sevenoaks.gov.uk/services/community-and-living/pollution/air-quality">http://www.sevenoaks.gov.uk/services/community-and-living/pollution/air-quality</a>
AQMA 3	1/3/02	NO <sub>2</sub> annual mean		M26 - from junction 5 of the M25 to the district boundary with Tonbridge and Malling Borough Council.	Yes		No current monitoring	<a href="http://www.sevenoaks.gov.uk/services/community-and-living/pollution/air-">http://www.sevenoaks.gov.uk/services/community-and-living/pollution/air-</a>

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								<a href="#">quality</a>
AQMA 4	1/3/02	NO <sub>2</sub> 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	<a href="http://www.sevenoaks.gov.uk/services/community-and-living/pollution/air-quality">http://www.sevenoaks.gov.uk/services/community-and-living/pollution/air-quality</a>
AQMA 6	1/9/06	PM <sub>10</sub>		Junction 5 to Kent / Surrey border	Yes		No current monitoring	<a href="http://www.sevenoaks.gov.uk/services/community-and-living/pollution/air-quality">http://www.sevenoaks.gov.uk/services/community-and-living/pollution/air-quality</a>
AQMA 8	1/9/06	NO <sub>2</sub> annual mean	Swanley	Swanley – London Road (East); High Street; Bartholomew Way and parts of Central town area	Yes		40.9 (DT40)	<a href="http://www.sevenoaks.gov.uk/services/community-and-living/pollution/air-quality">http://www.sevenoaks.gov.uk/services/community-and-living/pollution/air-quality</a>

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AQMA 10	1/9/06	NO <sub>2</sub> annual mean	Sevenoaks	Sevenoaks – High Street	Yes		48.1 (DT2)	<a href="http://www.sevenoaks.gov.uk/services/community-and-living/pollution/air-quality">http://www.sevenoaks.gov.uk/services/community-and-living/pollution/air-quality</a>
AQMA 13	14/1/14	NO <sub>2</sub> 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		51.2 (DT31)	<a href="http://www.sevenoaks.gov.uk/services/community-and-living/pollution/air-quality">http://www.sevenoaks.gov.uk/services/community-and-living/pollution/air-quality</a>
AQMA 14	14/1/14	NO <sub>2</sub> annual mean	Swanley	The junction of London Road and Birchwood Road, Swanley.	Yes		49.8 (DT83)	<a href="http://www.sevenoaks.gov.uk/services/community-and-living/pollution/air-quality">http://www.sevenoaks.gov.uk/services/community-and-living/pollution/air-quality</a>

☐ 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

Currently, we have not received any feedback from DEFRA from last year's report. This may be due to an error with the report submission website.

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	Officers continue to work with JTB to establish measures which may improve Air Quality. These include lobbying GIS providers to change prioritisation routes,
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	Officers continue to review new developments and where appropriate request air quality assessment and appropriate mitigation

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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	The Council continues to review procurement of green vehicles. In 2017 Parking Services procured a full electric vehicle
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	

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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/m³	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	The Council has run promotion campaigns within residents magazines and via our engagement with vulnerable residents through housing grant schemes

## **2.3 PM<sub>2.5</sub> – 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<sub>2.5</sub> (particulate matter with an aerodynamic diameter of 2.5µm or less). There is clear evidence that PM<sub>2.5</sub> 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<sub>2.5</sub> 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 2017. 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<sub>2</sub> at 50 sites during 2017. 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<sub>2</sub>)**

Table A.3 in Appendix A compares the ratified and adjusted monitored NO<sub>2</sub> annual mean concentrations for the past 5 years with the air quality objective of 40µg/m<sup>3</sup>.

For diffusion tubes, the full 2017 dataset of monthly mean values is provided in Appendix B.

Nitrogen dioxide diffusion tube monitoring has shown 14 roadside locations where results are above objective levels, all of which are within current AQMA's. There were no tubes that demonstrated a risk of a breach of the 1 hour mean objective.

Automatic monitoring for nitrogen dioxide is below the objective levels with no recorded breaches of the 1 hour mean objective.

It should be noted that the reductions in nitrogen dioxide levels identified in 2017 may be as a result of favourable climatic conditions.

### **3.2.2 Particulate Matter (PM<sub>10</sub>)**

Table A.5 in Appendix A compares the ratified and adjusted monitored PM<sub>10</sub> annual mean concentrations for the past 5 years with the air quality objective of 40µg/m<sup>3</sup>.

Table A.6 in Appendix A compares the ratified continuous monitored PM<sub>10</sub> daily mean concentrations for the past 5 years with the air quality objective of 50µg/m<sup>3</sup>, 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 monitoring locations. The Sevenoaks quarry site commenced monitoring in July 2015, however data capture for subsequent years was hindered by teething problems. However for this reporting period, a data capture rate of 85% was achieved. Results from the monitoring have not shown any breaches of the objective levels. Therefore the site is due to be closed and no declaration of an AQMA will be required for this area.

### **3.2.3 Particulate Matter (PM<sub>2.5</sub>)**

PM<sub>2.5</sub> is not currently monitored for.

### **3.2.4 Sulphur Dioxide (SO<sub>2</sub>)**

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) <sup>(1)</sup>	Distance to kerb of nearest road (m) <sup>(2)</sup>	Inlet Height (m)
CM1	Greatness	Urban background	553603	156774	NO <sub>x</sub> , NO, NO <sub>2</sub> , PM <sub>10</sub> , O <sub>3</sub>	N	TEOM	Y	46m	1.8
CM2	Bat & Ball	Roadside	553044	156690	NO <sub>x</sub> , NO, NO <sub>2</sub> , PM <sub>10</sub>	Y	TEOM	N - (30m)	8m	1.8
CM3	Sevenoaks Quarry	Roadside	553195	157195	PM <sub>10</sub>	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) <sup>(1)</sup>	Distance to kerb of nearest road (m) <sup>(2)</sup>	Tube collocated with a Continuous Analyser?	Height (m)
DT2	High Street South 1 (Guitar) Sevenoaks	Roadside	553141	154263	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 Cott/ Amherst Hill Sevenoaks	Roadside	551529	155967	NO2	Ny	N (4m)	2	N	2.5m
DT87	Bradbourne Vale Road South	Roadside	551640	156335	NO2	Y	N (10m)	2.5	N	2.5m
DT88	Bradbourne Vale Road North	Roadside	552963	156583	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	Roadside	553059	156624	NO2	Y	Y	4	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) <sup>(1)</sup>	Distance to kerb of nearest road (m) <sup>(2)</sup>	Tube collocated with a Continuous Analyser?	Height (m)
	(Ferrari)									
DT30	Bat & Ball 2 Otford Road Sevenoaks	Roadside	553019	155692	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	553151	156558	NO2	Y	Y	1.5	N	2.5m
DT5	Riverhead 2 (Laundry) North West	Kerbside	551414	156197	NO2	Y	N (1.5m)	0.5	N	2.5m
DT6	Riverhead 3 (Opp shops) East	Roadside	551440	156165	NO2	Y	N (6m)	3	N	2.5m
DT42	62 London Road Riverhead	Roadside	551318	156373	NO2	Y	N (2m)	2	N	2.5m
DT76	Worships Hill/ Witches Lane, Riverhead	Roadside	551026	155710	NO2	Y	N (36m)	2	N	2.5m
DT7	High Street East 1 (Road Sign) Seal	Roadside	555092	156694	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
DT33	High Street East 2 (Pizza) Seal	Roadside	555068	156711	NO2	Y	Y	1.5	N	2m
DT34	16 Main Road, Sundridge Dunbrik		549427	155691	NO2	N			N	
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	551281	156860	NO2	Y	N (2.5m)	2	N	2.5m
DT54	57 London Road, Dunton Green	Roadside	551216	157007	NO2	Y	N (8m)	2	N	2.5m
DT74	Westerham Road, (Devon Cott) Bessels	Roadside	550782	155585	NO2	Y	N (8m)	2	N	2.5m

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Site ID	Site Name	Site Type	X OS Grid Ref	Y OS Grid Ref	Pollutants Monitored	In AQMA ?	Distance to Relevant Exposure (m) <sup>(1)</sup>	Distance to kerb of nearest road (m) <sup>(2)</sup>	Tube collocated with a Continuous Analyser?	Height (m)
	Green									
DT86	59 Westerham Road, Bessels Green	Roadside	550872	155585	NO2	Y	Y	1.5	N	2m
DT71	204 Main Road, Sundridge	Roadside	548251	155354	NO2	Y	N (1.5m)	1	N	2.5m
DT12	Station Road (M25) Brasted	Roadside	546815	155866	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, Westeham	kerbside	544594	154025	NO2	Y	N (3m)	1	N	2.5m
DT13	Wested Lane, Swanley	Roadside	552610	167700	NO2	Y	N (14m)	5	N	2.5m
DT14	Wadard Terrace, Button St Swanley	Roadside	553109	167880	NO2	Y	N (15m)	115m to M25	N	2.5m
DT39	Bartholomew Way, Swanley	Roadside	551492	168695	NO2	Y	N (13m)	2	N	2.5m
DT40	London Road 1(traffic lights) Swanley	Kerbside	551592	168162	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	550298	169582	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	Roadside	550258	169575	NO2	Y	N (10m)	2	N	2m

Site ID	Site Name	Site Type	X OS Grid Ref	Y OS Grid Ref	Pollutants Monitored	In AQMA ?	Distance to Relevant Exposure (m) <sup>(1)</sup>	Distance to kerb of nearest road (m) <sup>(2)</sup>	Tube collocated with a Continuous Analyser?	Height (m)
	London Road									
DT95	Malvern, Birchwood Road, Swanley	Roadside	550377	169479	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

**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<sub>2</sub> Monitoring Results

Site ID		Site Type	Monitoring Type	Valid Data Capture 2017 (%) <sup>(2)</sup>	NO <sub>2</sub> Annual Mean Concentration (µg/m <sup>3</sup> ) <sup>(3)</sup>				
					2013	2014	2015	2016	2017
CM1:	Greatness	Urban Background	Automatic	73	20	17	17	17	16
CM2 :	Bat & Ball	Roadside	Automatic	93	31	29	31.8 <sup>3</sup>	31	28
DT02	Sevenoaks, High St South 1	Roadside	Diffusion Tube	100	<b>62</b>	<b>56.7</b>	<b>53.6</b>	<b>54.7</b>	<b>48.1</b>
DT03	Sevenoaks, Garvock Drive	Urban Background	Diffusion Tube	100	14.3	12.3	10.8	12.7	11.1
DT05	Riverhead, Riverhead 2	Kerbside	Diffusion Tube	100	<b>50.2</b>	<b>48.2</b>	<b>42.8</b>	<b>47.0</b>	<b>42.7</b>
DT06	Riverhead, Riverhead 3	Roadside	Diffusion Tube	100	<b>51.6</b>	<b>47.1</b>	<b>44.1</b>	<b>47.1</b>	<b>40.2</b>
DT07	Seal, High St East 1	Roadside	Diffusion Tube	100	<b>51</b>	<b>49.5</b>	<b>44.3</b>	<b>46.8</b>	<b>42.7</b>
DT08	Seal, High St West 1	Roadside	Diffusion Tube	83.33	36.8	31.6	31.1	35.2	26.9
DT12	Brasted, Station Rd	Roadside	Diffusion Tube	100	<b>44.2</b>	<b>43.3</b>	<b>46.5</b>	<b>43.1</b>	40.0
DT13	Swanley, London Rd/Wested Lane	Roadside	Diffusion Tube	100	<b>40.7</b>	37.1	31.4	36.5	30.5
DT14	Swanley, Wadard Terrace (Button St)	Roadside	Diffusion Tube	91.66	36	35.4	32.4	32.6	30.1
DT23	Sevenoaks, Bat & Ball 1	Roadside	Diffusion Tube	100	<b>43.9</b>	38.8	35.6	<b>40.5</b>	34.3
DT24	Westerham, High St	Roadside	Diffusion Tube	100	<b>43.8</b>	35.0	32.7	35.3	30.4
DT25	Westerham, Vicarage Hill	Roadside	Diffusion Tube	100	35.8	30.1	28.3	29.8	25.9
DT26	Farningham, Farningham Hill	Roadside	Diffusion Tube	100	<b>46.3</b>	<b>42.3</b>	<b>41.7</b>	<b>45.8</b>	<b>41.8</b>
DT27	Sevenoaks, High St South 2	Roadside	Diffusion Tube	100	<b>41.8</b>	39.4	37.2	39.8	38.2
DT28	Sevenoaks, High St North 2	Kerbside	Diffusion Tube	100	<b>49.8</b>	<b>46.0</b>	<b>42.4</b>	<b>44.1</b>	36.7



Site ID		Site Type	Monitoring Type	Valid Data Capture 2017 (%) <sup>(2)</sup>	NO <sub>2</sub> Annual Mean Concentration (µg/m <sup>3</sup> ) <sup>(3)</sup>				
					2013	2014	2015	2016	2017
DT29	Sevenoaks, High St North 3	Roadside	Diffusion Tube	100	32.5	30.0	27.8	31.5	28.0
DT30	Sevenoaks, Bat & Ball 2	Roadside	Diffusion Tube	100	39.9	35.1	32.2	36.1	32.4
DT31	Sevenoaks, Bat & Ball 3	Roadside	Diffusion Tube	100	<b>54.1</b>	<b>52.0</b>	<b>46.9</b>	<b>57.9</b>	<b>51.2</b>
DT32	Sevenoaks, Bat & Ball 4	Roadside	Diffusion Tube	100	<b>55.9</b>	<b>55.3</b>	<b>49.9</b>	<b>56.3</b>	<b>47.6</b>
DT33	Seal, High St East 2	Roadside	Diffusion Tube	100	<b>48.4</b>	<b>46.7</b>	<b>42.5</b>	<b>48.1</b>	<b>40.5</b>
DT34	Seal, High St West 2 / Dunbrick	Roadside	Diffusion Tube	100	37	35.3	30.9	31.7	27.5
DT35	Sevenoaks, Seal Hollow Rd	Roadside	Diffusion Tube	91.66	<b>40.3</b>	<b>40.5</b>	36.3	39.6	32.5
DT36	Westerham, Market Sq	Kerbside	Diffusion Tube	100	<b>55.8</b>	<b>51.7</b>	<b>44.6</b>	<b>45.1</b>	39.6
DT39	Swanley, Bartholomew Way 2, opposite ASDA delivery	Roadside	Diffusion Tube	100	<b>42.4</b>	38.4	34.7	<b>40.9</b>	34.5
DT40	Swanley, London Rd 1	Kerbside	Diffusion Tube	100	<b>51.6</b>	<b>48.5</b>	<b>42.3</b>	<b>51.5</b>	<b>40.9</b>
DT41	Swanley, London Rd 2	Roadside	Diffusion Tube	100	<b>43.5</b>	<b>43.0</b>	37.5	<b>42.7</b>	<b>40.1</b>
DT42	Riverhead, London Rd	Roadside	Diffusion Tube	91.66	<b>41.9</b>	<b>44.4</b>	37.1	39.3	35.5
DT43	Dunton Green, London Rd	Roadside	Diffusion Tube	91.66	36.8	33.9	28.0	34.1	29.5
DT48	Sevenoaks, 73 London Rd	Roadside	Diffusion Tube	100	34.1	32.6	25.6	27.7	<b>40.7</b>
DT49	Sevenoaks, 20 London Rd	Roadside	Diffusion Tube	91.66	38.5	34.9	30.4	33.7	28.2
DT51	Sevenoaks, 130 London Rd	Kerbside	Diffusion Tube	100	38.9	39.2	36.1	<b>40.4</b>	35.1
DT52	Sevenoaks, 142 London Rd	Roadside	Diffusion Tube	91.66	<b>42.7</b>	39.6	37.9	38.3	33.1
DT54	Dunton Green, 57 London Rd	Roadside	Diffusion Tube	75	36.8	38.1	35.6	36.0	33.8

Site ID		Site Type	Monitoring Type	Valid Data Capture 2017 (%) <sup>(2)</sup>	NO <sub>2</sub> Annual Mean Concentration (µg/m <sup>3</sup> ) <sup>(3)</sup>				
					2013	2014	2015	2016	2017
DT71	Sundridge, 204 Main Rd	Roadside	Diffusion Tube	100	39.9	32.4	29.8	33.5	30.0
DT74	Bessels Green, (A25) Westerham Rd	Roadside	Diffusion Tube	100	<b>41.9</b>	39.7	35.5	37.1	35.4
DT76	Worships Hill, Witches Lane	Roadside	Diffusion Tube	100	<b>43.1</b>	36.2	35.6	40.0	33.9
DT77	Sevenoaks, London Rd/Montreal Av	Roadside	Diffusion Tube	100	<b>46.5</b>	<b>42.8</b>	<b>40.7</b>	40.0	38.8
DT81	Swanley, Farningham Hill Rd	Urban Background	Diffusion Tube	100	36.1	32	32.2	32.9	30.9
DT83	Swanley, Birchwood Rd, Jessamine Terrace	Roadside	Diffusion Tube	100	<b>51.8</b>	<b>48.8</b>	<b>55.6</b>	<b>60.5</b>	<b>49.8</b>
DT84	Brasted, West End	Roadside	Diffusion Tube	100	<b>41.2</b>	34.9	32.8	35.4	31.2
DT85	Brasted, Chart Lane	Roadside	Diffusion Tube	100	<b>58.9</b>	<b>48.3</b>	<b>45.0</b>	<b>51.1</b>	<b>43.9</b>
DT86	Bessels Green, (A25) 59 Westerham Rd	Roadside	Diffusion Tube	100	<b>42.7</b>	39.4	36.7	<b>40.8</b>	36.0
DT87	Sevenoaks, Bradbourne Vale Rd South	Roadside	Diffusion Tube	100	<b>55.7</b>	<b>53.8</b>	<b>48.1</b>	<b>51.7</b>	<b>45.7</b>
DT88	Sevenoaks, Bradbourne Vale Rd North	Roadside	Diffusion Tube	100	36.8	35.1	29.1	32.9	28.7
DT90	Sevenoaks St Johns, A4 St Johns Hill	Roadside	Diffusion Tube	100	<b>40.9</b>	35.3	32.4	36.9	31.5
DT93	Swanley, Birchwood Rd, end of Pucknells Close	Roadside	Diffusion Tube	66.66	32.4	31.5	29.3	32.4	27.2
DT94	Swanley, Birchwood Rd, Beefeater Restaurant	Roadside	Diffusion Tube	91.66	36.5	35.1	33.7	36.9	32.2
DT95	Swanley, Birchwood Rd, London Rd	Roadside	Diffusion Tube	100	36.6	35.2	34.1	38.0	33.6

Site ID	Site Type	Monitoring Type	Valid Data Capture 2017 (%) <sup>(2)</sup>	NO <sub>2</sub> Annual Mean Concentration (µg/m <sup>3</sup> ) <sup>(3)</sup>				
				2013	2014	2015	2016	2017
	opposite Malvern							

☐ 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<sub>2</sub> annual mean objective of 40µg/m<sup>3</sup> are shown in **bold**.

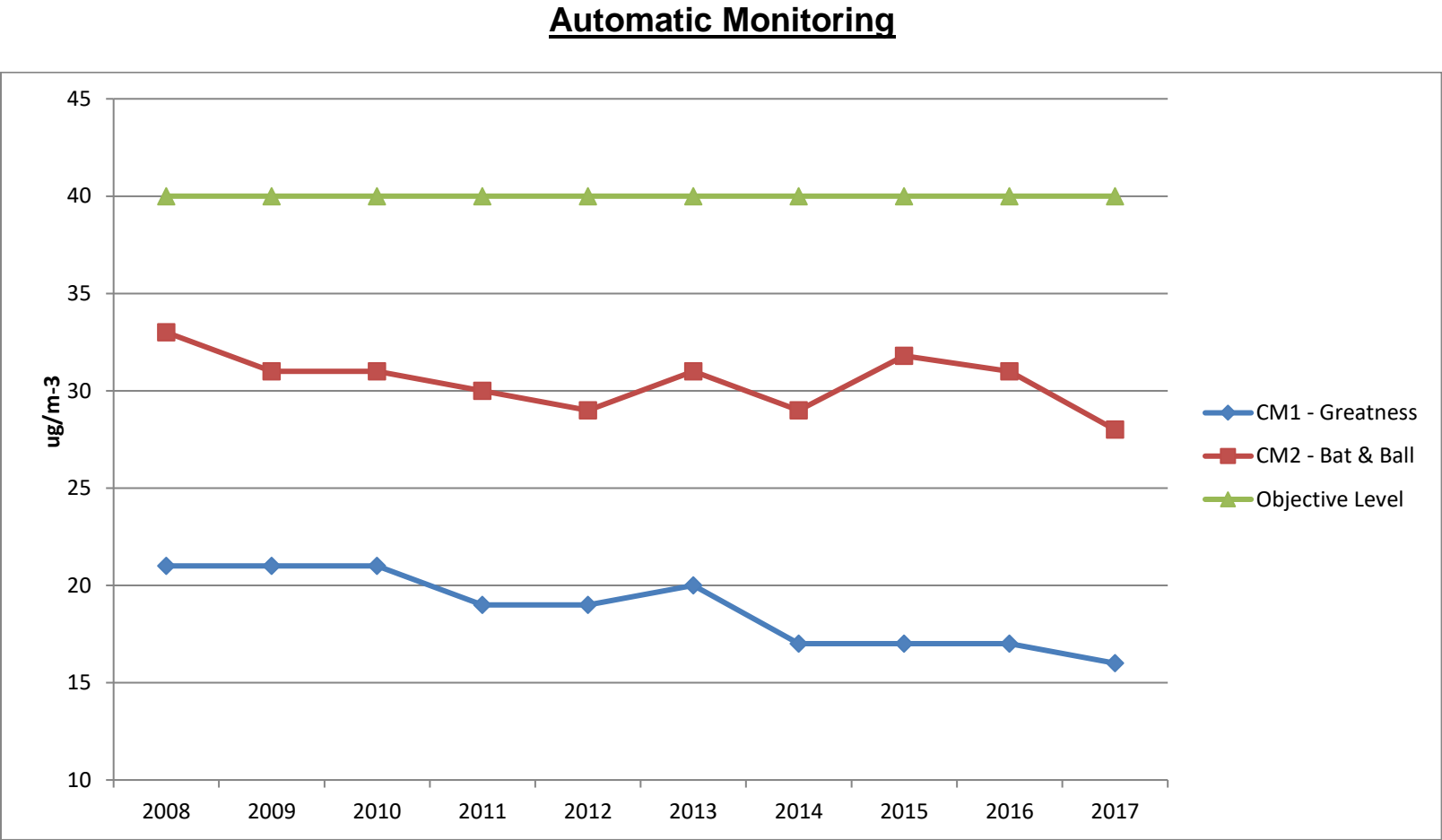
NO<sub>2</sub> annual means exceeding 60µg/m<sup>3</sup>, indicating a potential exceedance of the NO<sub>2</sub> 1-hour mean objective are shown in **bold and underlined**.

(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%).

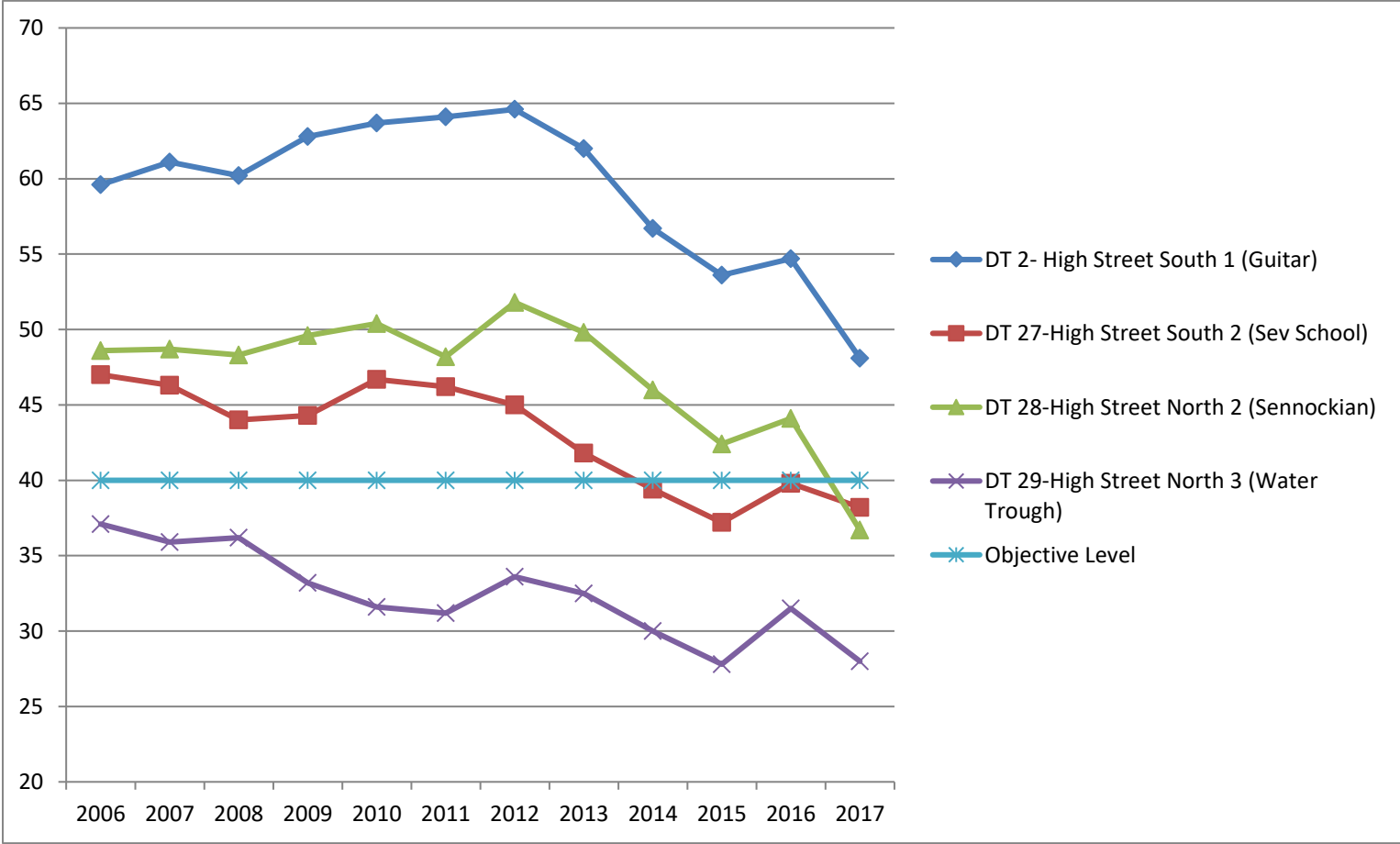
(3) Means for diffusion tubes have been corrected for bias. All means have been “annualised” as per Boxes 7.9 and 7.10 in LAQM.TG16 if valid data capture for the full calendar year is less than 75%. See Appendix C for details.

Figure A.1 – Trends in Annual Mean NO<sub>2</sub> Concentrations

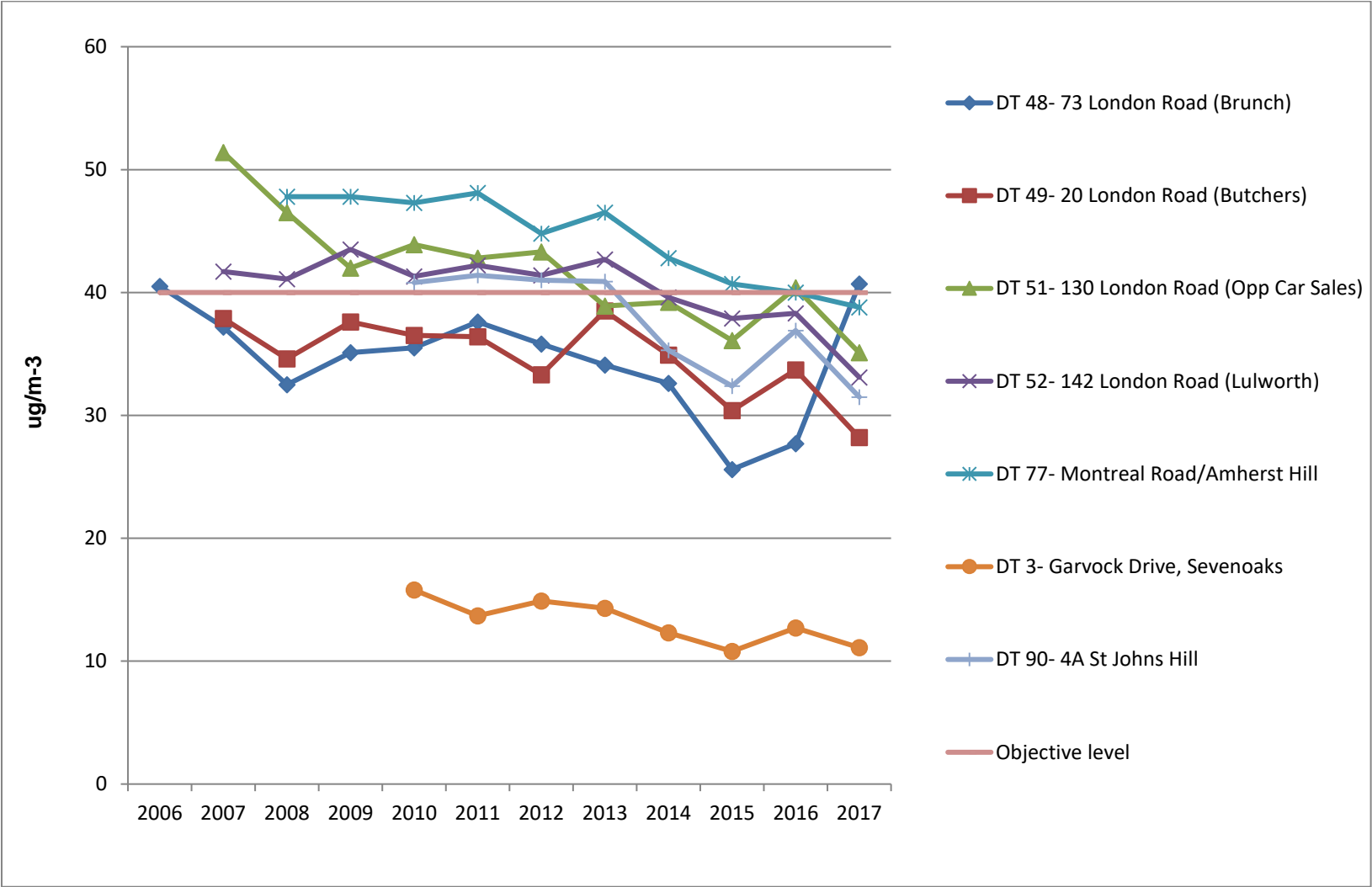


Diffusion Tube Network

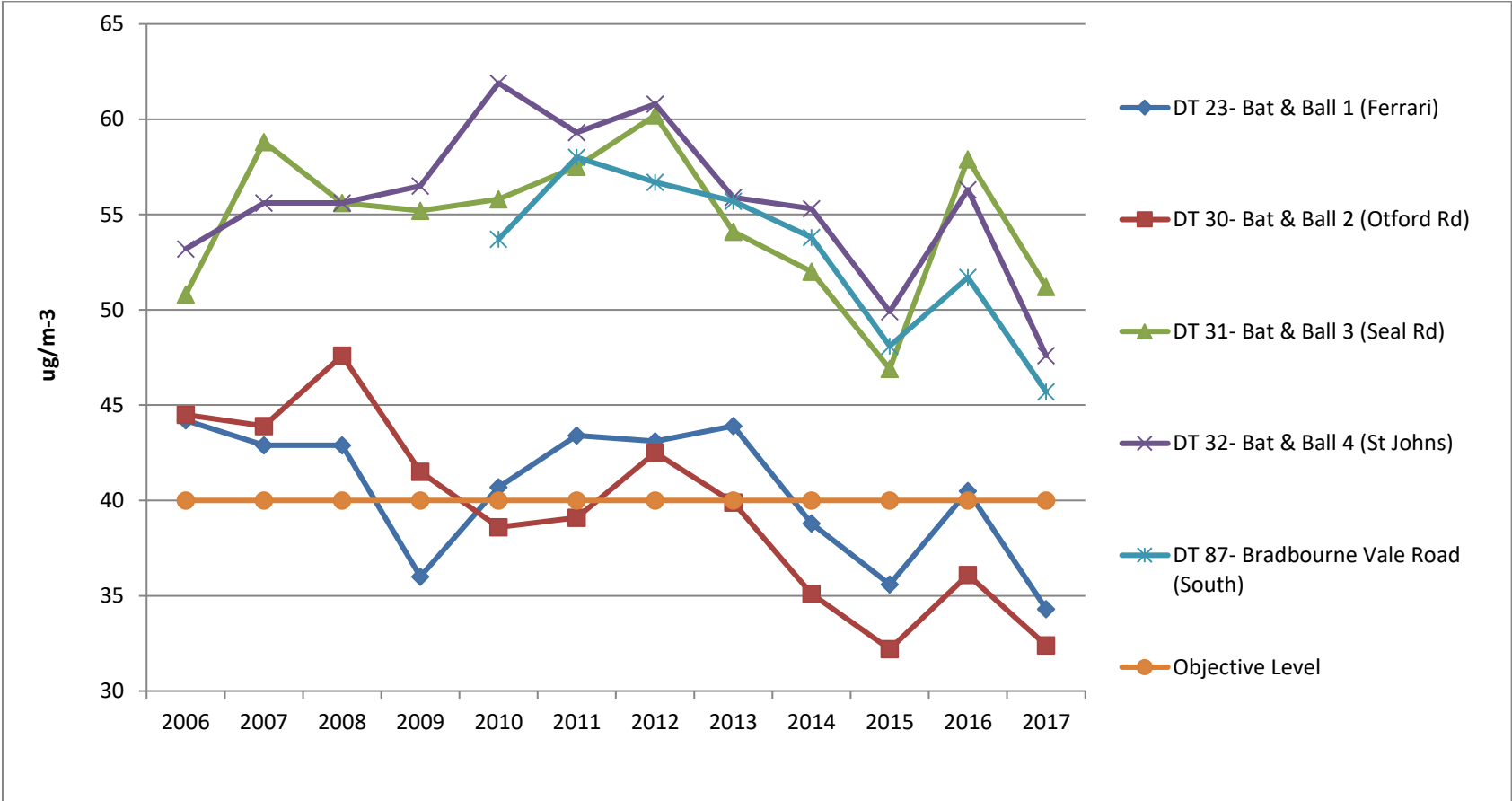
Sevenoaks High Street



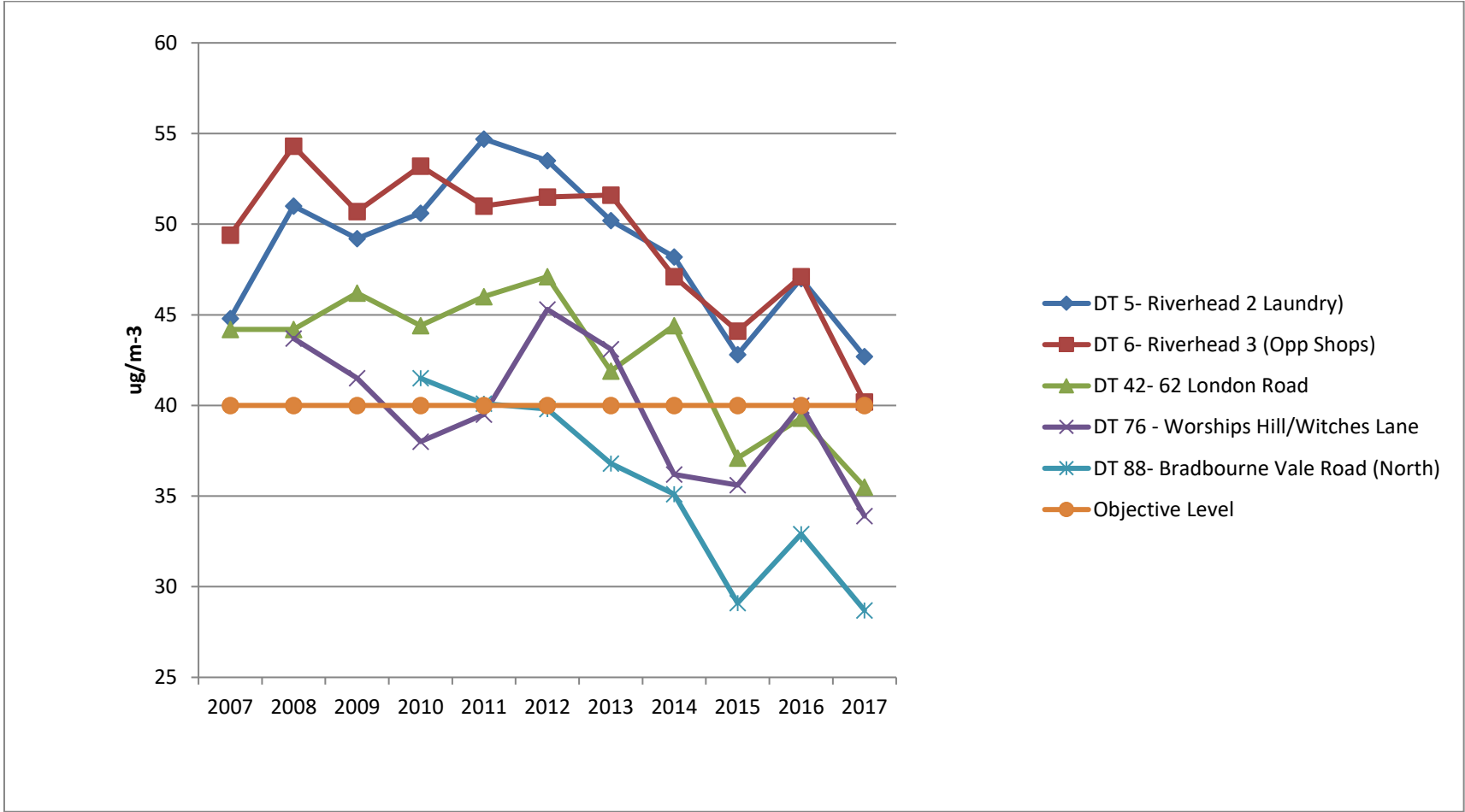
Sevenoaks



Bat and Ball

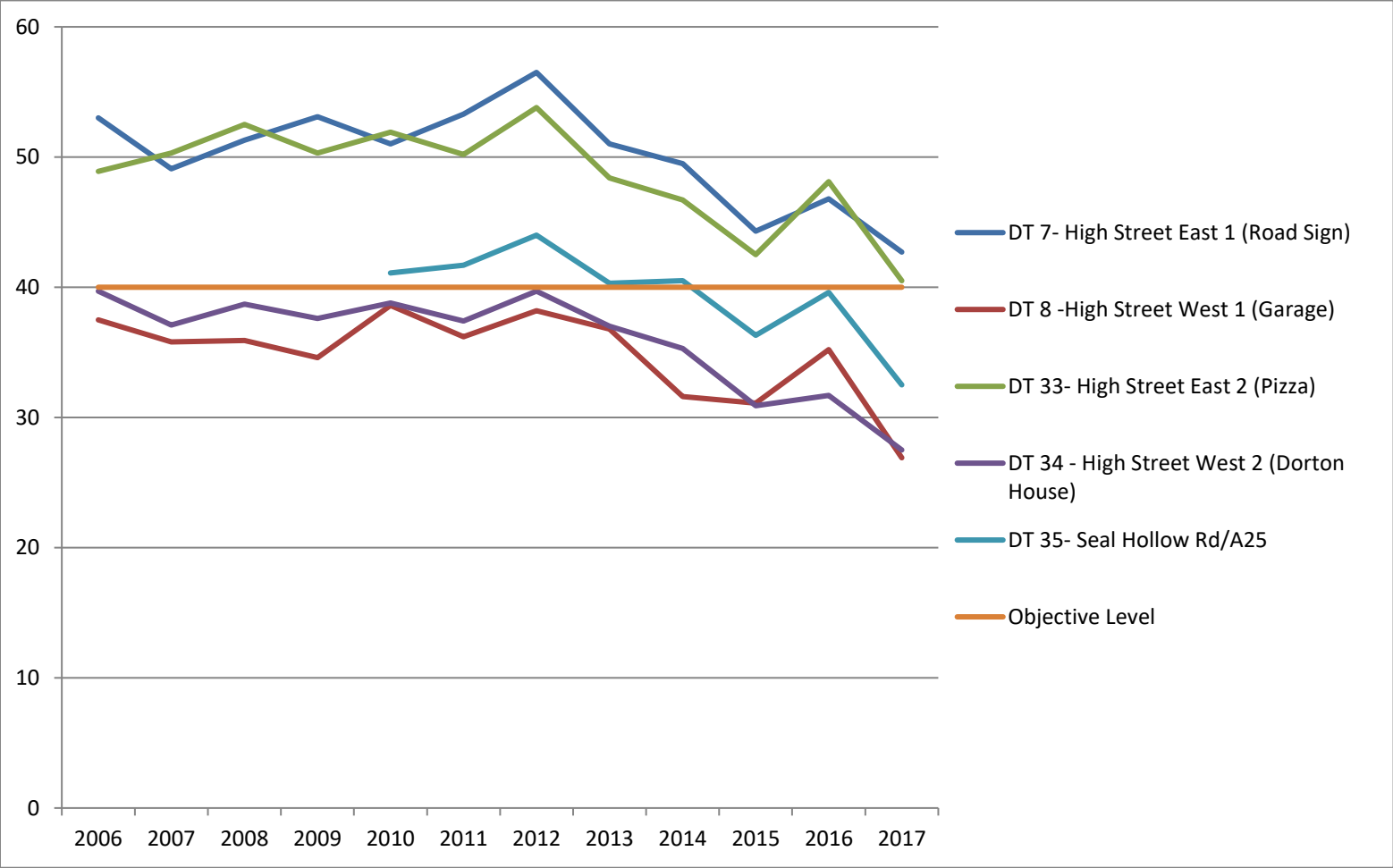


Riverhead

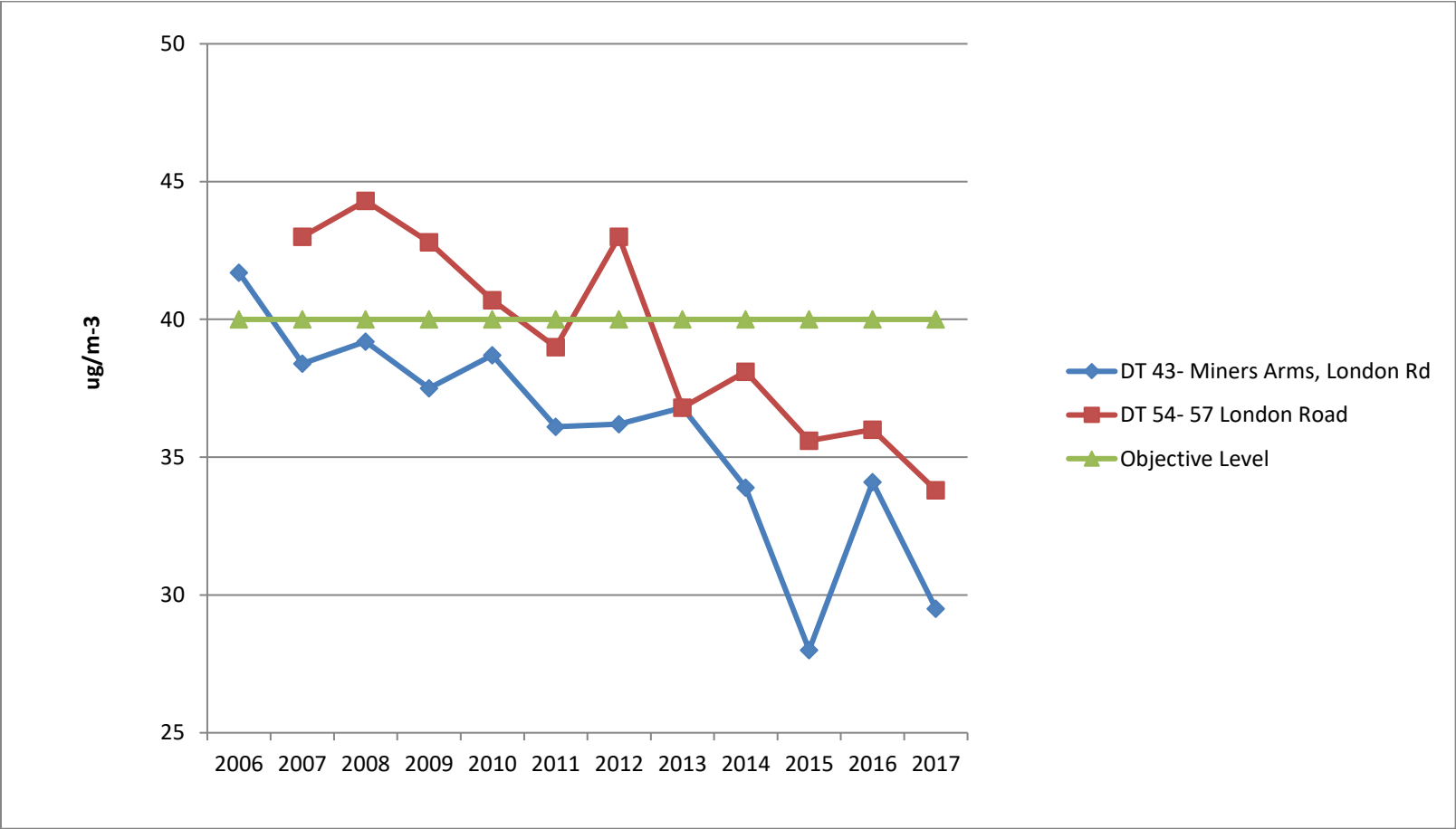




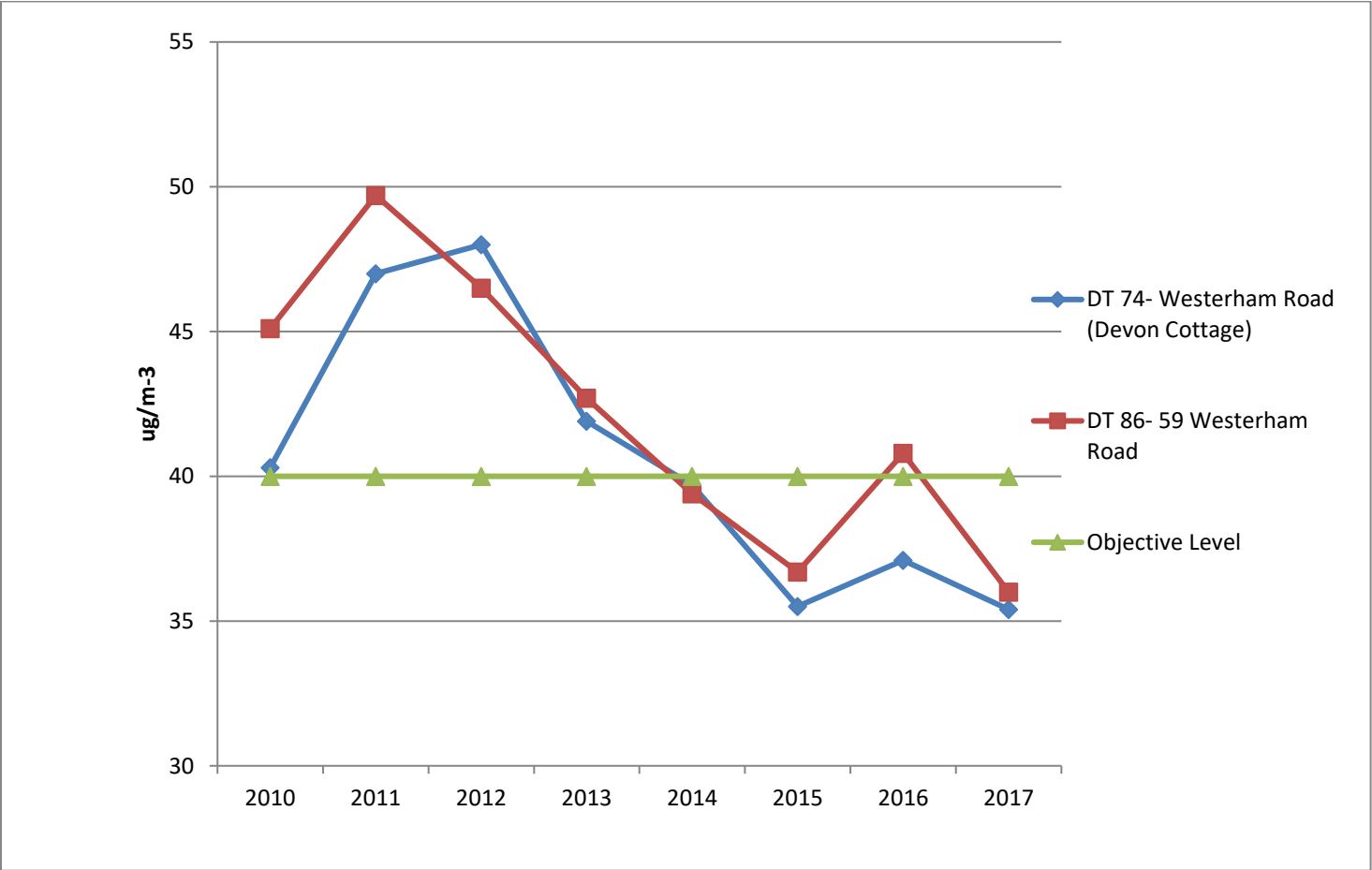
Seal



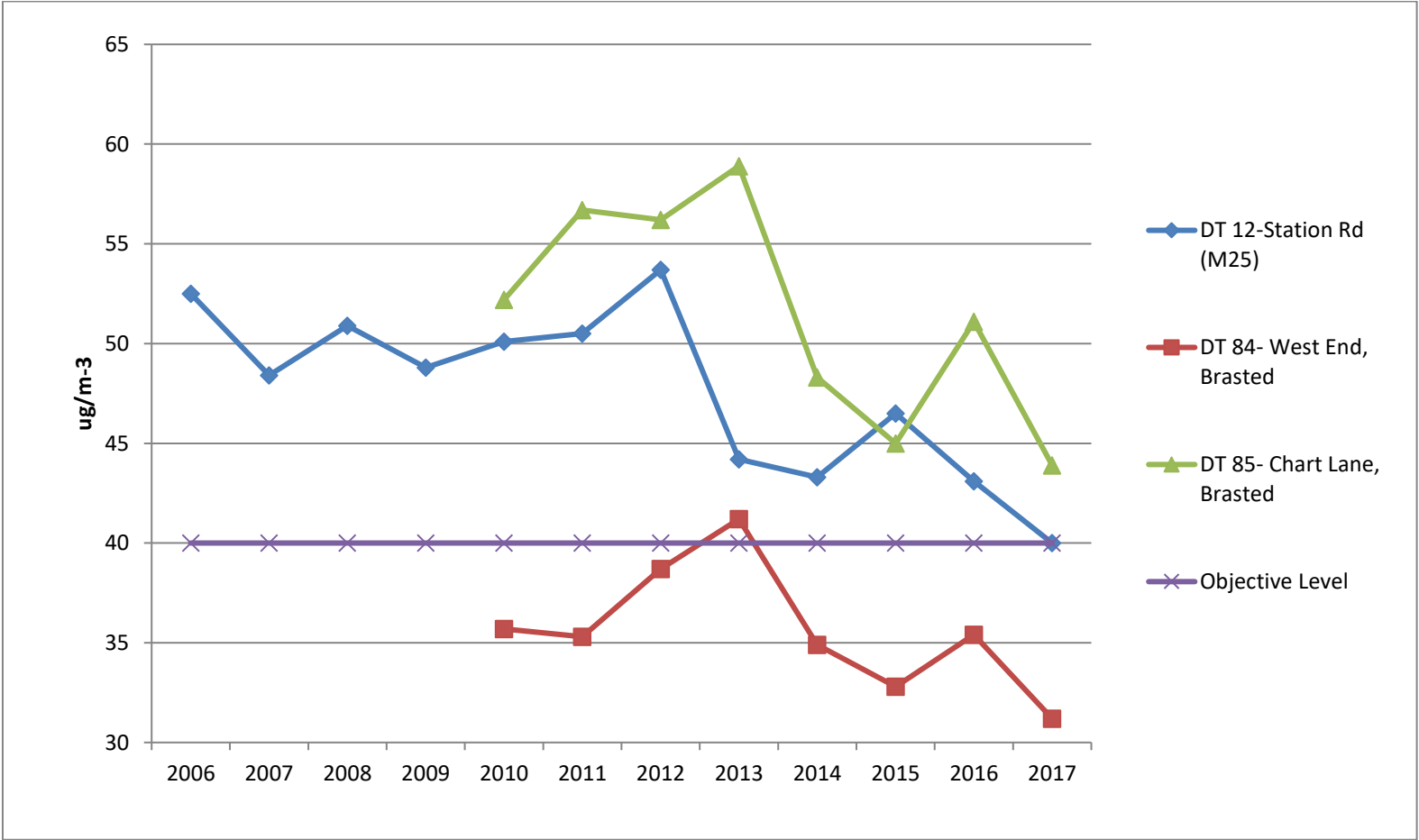
Dunton Green



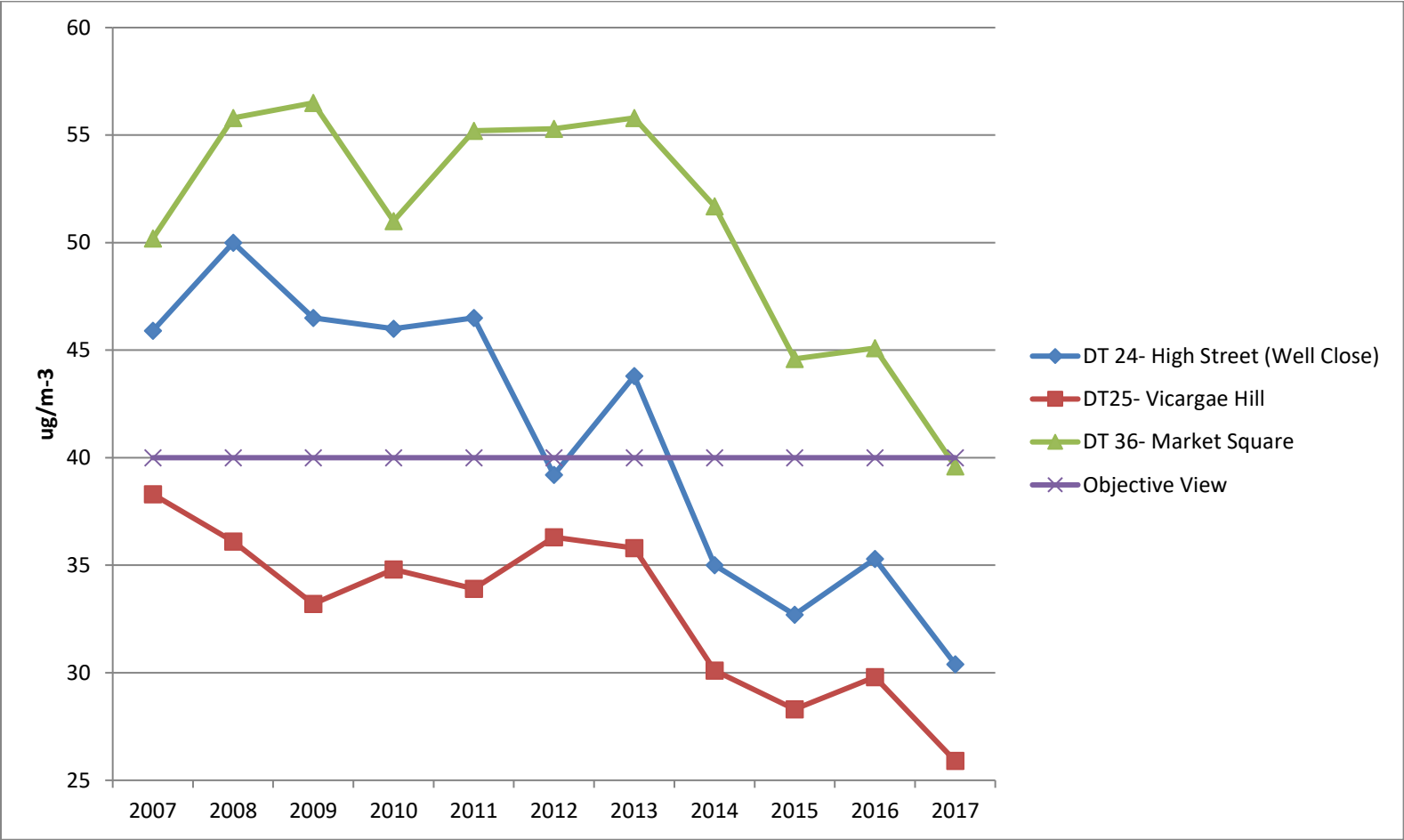
Bessels Green



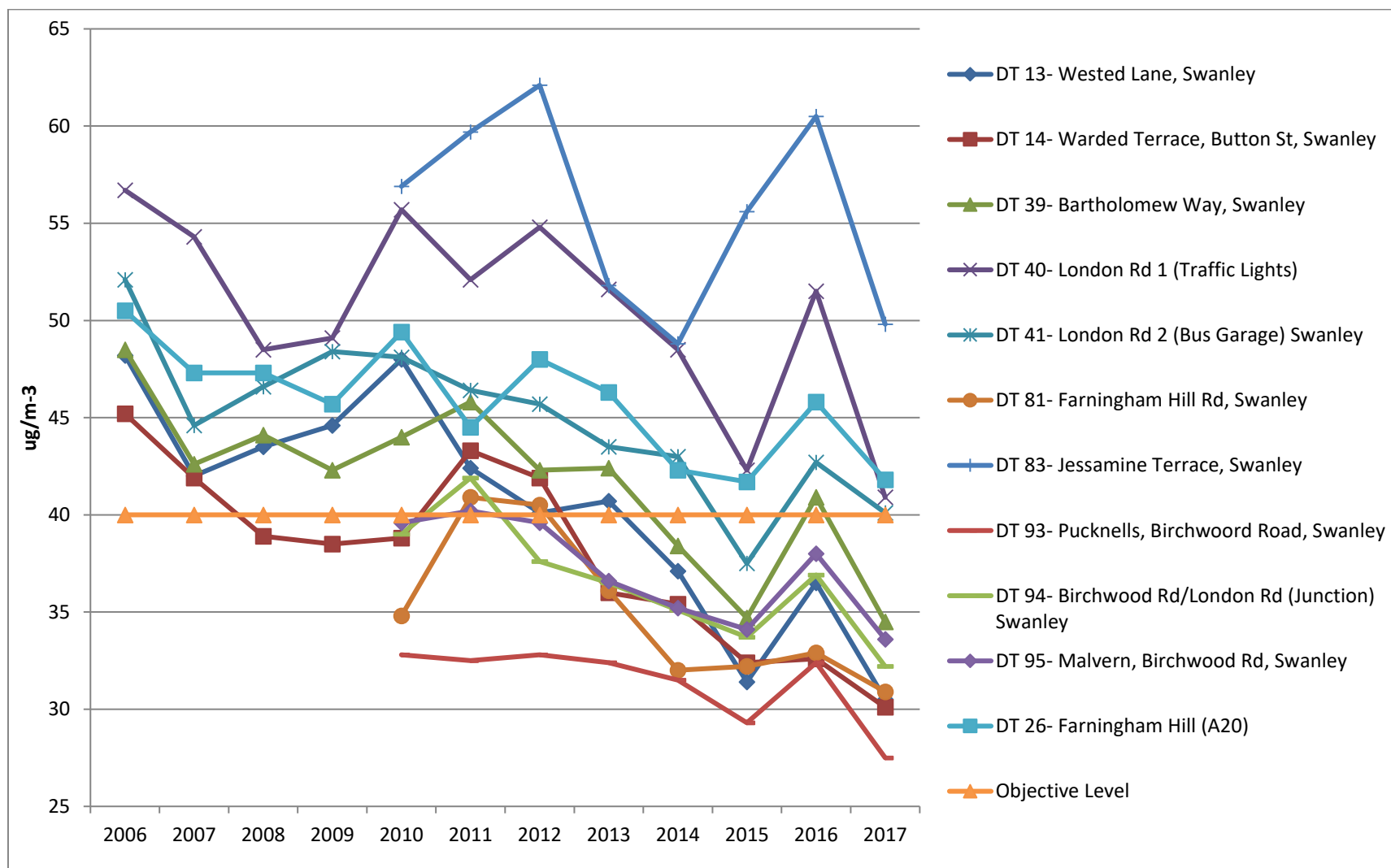
Brasted



Westerham



# Swanley



Sundridge

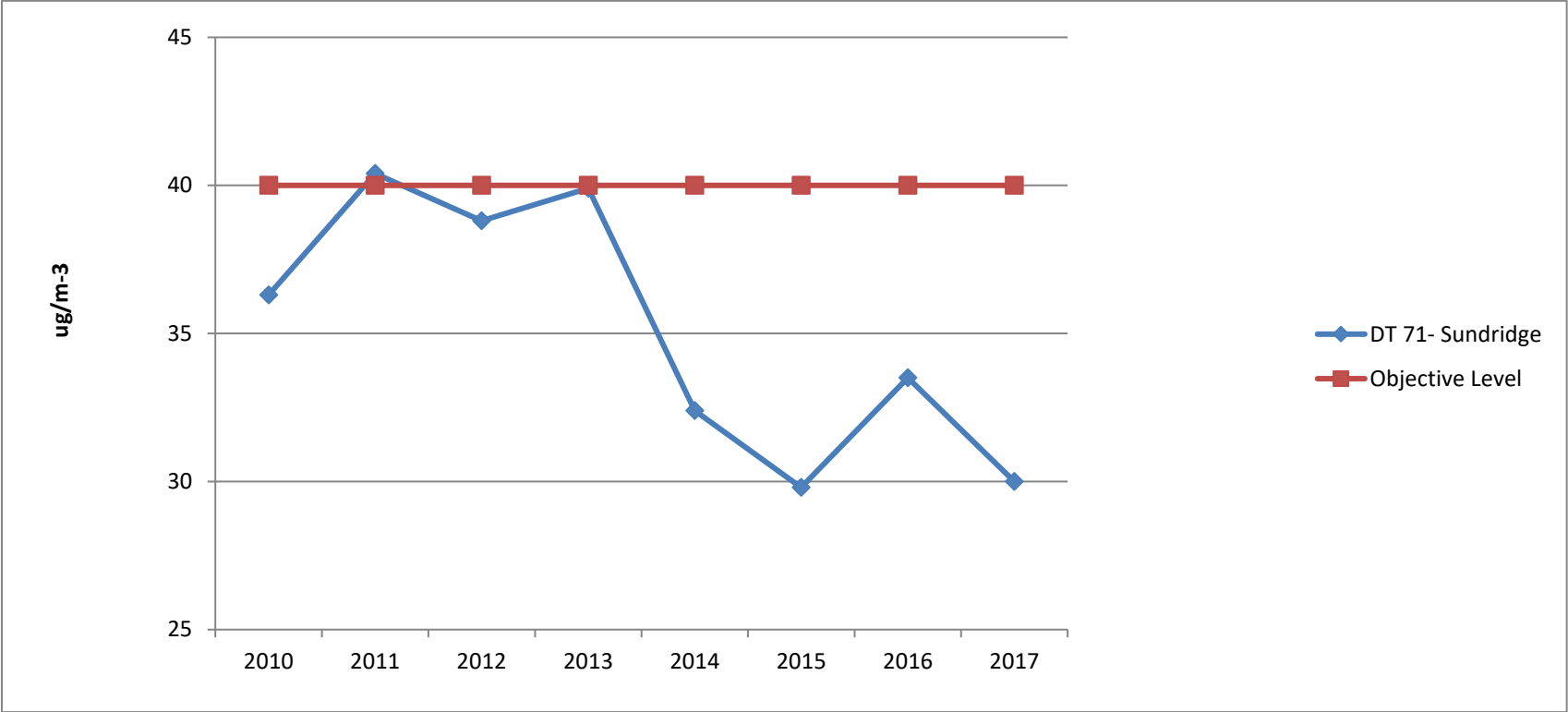


Table A.4 – 1-Hour Mean NO<sub>2</sub> Monitoring Results

Site ID	Site Type	Monitoring Type	Valid Data Capture for Monitoring Period (%) <sup>(1)</sup>	Valid Data Capture 2017 (%) <sup>(2)</sup>	NO <sub>2</sub> 1-Hour Means > 200µg/m <sup>3</sup> <sup>(3)</sup>				
					2013	2014	2015	2016	2017
CM1	Urban Background	Automatic		73	0	0	0	0	0
CM2	Roadside	Automatic		93	0	1	1	3	0

**Notes:**

Exceedances of the NO<sub>2</sub> 1-hour mean objective (200µg/m<sup>3</sup> 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 99.8<sup>th</sup> percentile of 1-hour means is provided in brackets.



Table A.5 – Annual Mean PM<sub>10</sub> Monitoring Results

Site ID	Site Type	Valid Data Capture for Monitoring Period (%) <sup>(1)</sup>	Valid Data Capture 2017(%) <sup>(2)</sup>	PM <sub>10</sub> Annual Mean Concentration (µg/m <sup>3</sup> ) <sup>(3)</sup>				
				2013	2014	2015	2016	2017
CM1	Urban Background		97	20	19	21	18	18
CM2	Roadside		99	22	21	21	21	20
CM3	Roadside		85	-	-	27*	27*	23

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

**Notes:**

Exceedances of the PM<sub>10</sub> annual mean objective of 40µg/m<sup>3</sup> 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<sub>10</sub> Concentrations

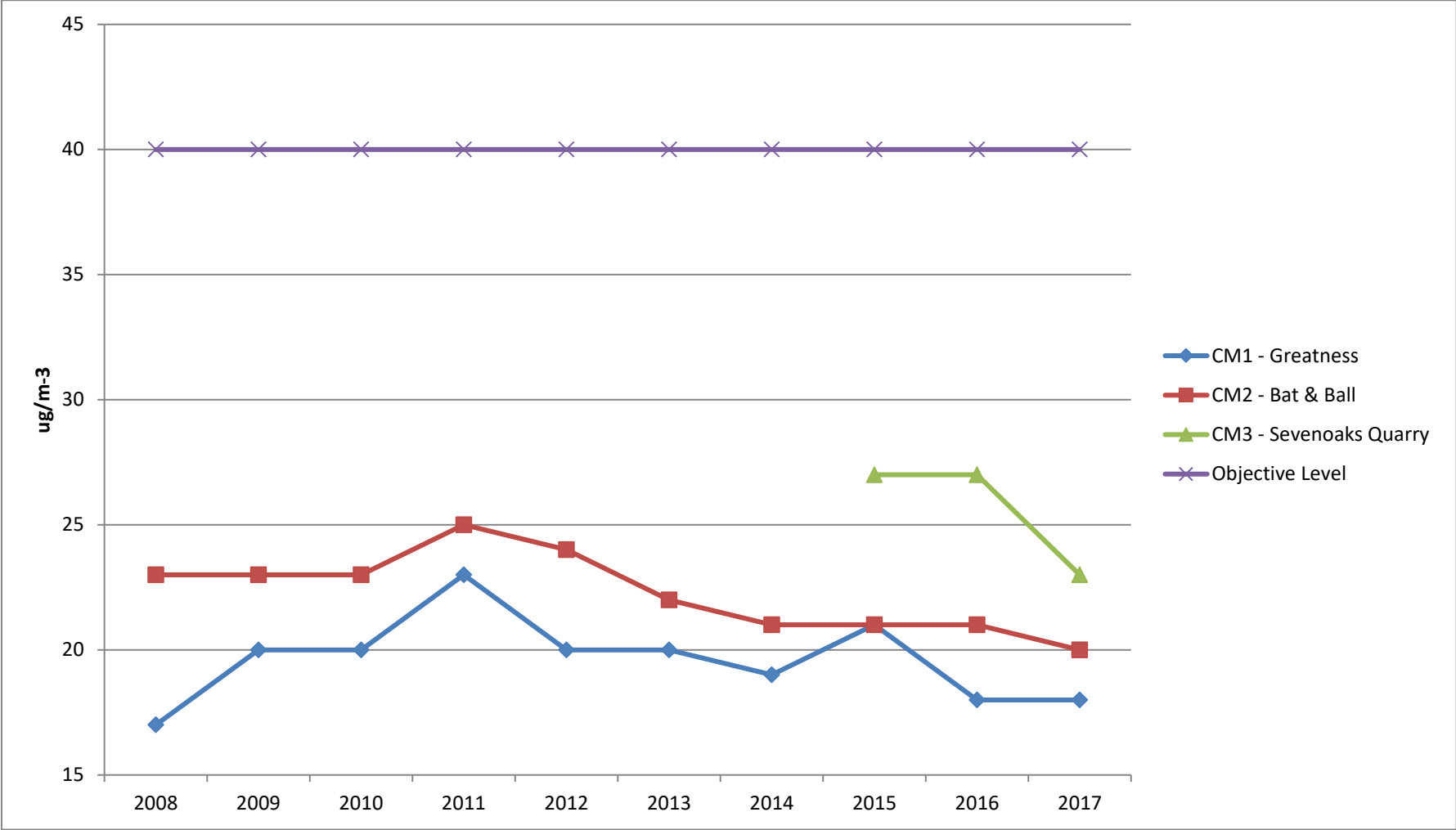


Table A.6 – 24-Hour Mean PM<sub>10</sub> Monitoring Results

Site ID	Site Type	Valid Data Capture for Monitoring Period (%) (1)	Valid Data Capture 2017 (%) (2)	PM <sub>10</sub> 24-Hour Means > 50µg/m <sup>3</sup> (3)				
				2013	2014	2015	2016	2017
CM1	Urban Background		97	4	5	2	0	4
CM2	Roadside		99	-	4	3	7	5
CM3	Roadside		85	-	-	4	14	5

**Notes:**

Exceedances of the PM<sub>10</sub> 24-hour mean objective (50µg/m<sup>3</sup> 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 90.4<sup>th</sup> percentile of 24-hour means is provided in brackets.

## Appendix B: Full Monthly Diffusion Tube Results for 2016

Table B.1 – NO<sub>2</sub> Monthly Diffusion Tube Results - 2016

Site ID	NO <sub>2</sub> Mean Concentrations (µg/m <sup>3</sup> )														
	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual Mean		
													Raw Data	Bias Adjusted (0.77) and Annualised <sup>(1)</sup>	Distance Corrected to Nearest Exposure <sup>(2)</sup>
BC01	30	19.6	17.5	19			12.6	14.2	18.2	18.9	32.6	23	20.56	N/A	N/A
BC02	32.6	24.4	17.9	14.2			11.9	13.2	18.8	17.6	32.9	21	20.45	N/A	N/A
BC03	31.3	21.7	18.1	19.3			10.2	14	19.3	17.9	28.4	22.6	20.28	N/A	N/A
BC04	54.4	43.3	36.1	36.6	30.8	30.5	30.4	25.4	35.7	41.1	47.6	37.4	37.44	N/A	N/A
BC05	52.1	40.4	36.5	37.4	29.3	31.9	29.2	27.6	40.9	40.8	46.7	36	37.40	N/A	N/A
BC06	43.3	41.9	36	34.5	28.2	30.6	28.3	29.9	41.4	39.1	47.3	34.7	36.27	N/A	N/A
DT02	91.3	62	59.8	66.7	59.2	57.2	49.3	47.5	65.6	55.1	77.5	59	62.52	48.1	44.5
DT03	29.8	18.7	13.1	14.3	11.2	9.3	8.3	9.2	14.1	12.7	17.5	15.2	14.45	11.1	N/A
DT05	76.5	55.6	57	62.6	49.2	55.4	49.5	49.1	41.4	52.1	64.3	52	55.39	42.7	35.9
DT06	72.2	49.8	54.7	59.6	59.7	50	49.9	41.8	53	49.3	48	38.6	52.22	40.2	30.7
DT07	83.3	57.6	58.5	57.5	50.2	49.6	49.6	41.1	55.8	52	59.7	50	55.41	42.7	41
DT08			37.7	45.2	34.5	28.8	27.7	29.7	27.3	35.2	49	33.8	34.89	26.9	23.2
DT12	44.1	62.8	66.3	68.5	52.4	49.5	43.3	40.8	48.3	27.3	59.8	60.7	51.98	40.0	29.8
DT13	64.2	41.5	41.2	41.6	37.2	32.4	29.6	30.1	40.1	31.2	48.8	37.1	39.58	30.5	26.8
DT14	59.9	48.2	42.1	33.7	29.7	31.6	27.4	32.9	37.7	43.4		43.8	39.13	30.1	33

# Sevenoaks District Council

DT23	61.2	48.5	45.1	44.8	44	39.7	37	33	39.8	41.6	61	38.5	44.52	34.3	25.9
DT24	60.2	40.4	41.9	39.9	40.3	36.1	31	29.4	35.5	38.6	42.4	37.7	39.45	30.4	24.1
DT25	38.5	39.4	34.7	39.3	29.6	30.4	28.5	27	32.3	33.8	48.3	21.8	33.63	25.9	22.8
DT26	81.8	53	53.4	63.1	52.6	50.6	42.4	48.3	50.9	55.4	61.5	39.1	54.34	41.8	30.5
DT27	63.7	55.5	47.3	53.8	42.7	42.5	35.6	39.3	49.4	51.1	62.8	52	49.64	38.2	38.4
DT28	66.8	49	46.6	52	42.5	42.8	42.5	40.2	50.8	49.6	64.2	25.7	47.73	36.7	35.1
DT29	57.8	38.8	35.2	34.3	30.3	27.3	27	28.2	35.3	35.1	50.9	36.9	36.43	28.0	24.2
DT30	50.3	51.8	41.9	44.7	40.6	41.7	34.5	33.3	41.9	38.3	49.2	37.4	42.13	32.4	23.7
DT31	81.5	71.5	60.4	73	58.7	58.1	54.4	52.1	77.7	69.8	73.4	68	66.55	51.2	41
DT32	81.5	52.1	54.4	72.3	66.4	55.1	56.1	48.4	65.8	54.6	82.6	52.3	61.80	47.6	46.5
DT33	71	59.9	56	56	48.3	46.7	43.1	44.2	51.9	48.3	63.1	43	52.63	40.5	38.1
DT34	54.8	37.1	36.3	29.3	30.5	30.4	25.6	27.7	36.1	39.1	45.8	35.4	35.68	27.5	19.6
DT35	57	<0.7	36.1	40.2	40.4	40.3	36.5	35.8	46.4	44.3	51.9	35.5	42.22	32.5	20.9
DT36	70	56.1	54.8	47.3	45.9	49.1	43	42.9	49.9	53.6	56.6	48.7	51.49	39.6	31.9
DT39	61.9	45.9	47.8	49.1	42.5	39	37.3	34.7	42.3	41.9	55.5	39	44.74	34.5	26.2
DT40	80.1	55	45.8	54	54.2	44.8	45.6	43.8	55.2	45.1	65.4	49.1	53.18	40.9	30
DT41	73.6	57.7	50.5	46.6	43	45	42.2	41.2	53.1	49.4	66.3	56.4	52.08	40.1	31.7
DT42	66.6	51.8	45.8	48	39.7	40.8	37.8	39.6	51.1	44.8		41.3	46.12	35.5	32.8
DT43	63.6	46.3	31.1	38.9	36.4	27.3	29	28.7	37.8	33.9	48.8		38.35	29.5	25.8
DT48	102.1	82.1	71.8	51.6	26.5	24.5	21.4	125.4	42.3	24.6	37.4	24.1	52.82	40.7	40.4
DT49	58.1	32.5	42.4	35	36.5	30.2	29.2	26.7	34.5	31	46.6		36.61	28.2	28
DT51	66.4	43.9	46.6	54.5	47.4	34.8	34.6	26.1	50	37.1	59.6	45.3	45.53	35.1	31.4
DT52	63.8	43.6	43.6	50	43.9	35.7	34.3	27.4	43	36.6	51.2		43.01	33.1	26
DT54	52.3	48.6	40	46.9	39.3	41.3	39.3	39	48.8				43.94	33.8	25.7
DT71	47.4	45.7	42.6	39.7	33	32.2	29.7	27.2	25.9	42.2	58.3	43.5	38.95	30.0	23.2
DT74	65.2	47	49.2	45	37.2	35.6	36.1	35.9	52.4	47	60	41.2	45.98	35.4	23.6
DT76	62	48.5	41.8	45.1	43.5	42.8	36.4	37	43.5	49	56.7	22.4	44.06	33.9	17.8

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<b>DT77</b>	62.5	55.2	40.7	51.7	53.8	51.8	42	43.3	52.1	46.6	59.7	45.1	50.38	38.8	37.8
<b>DT81</b>	61	47	40.9	40.1	31	35.1	31.9	32.6	39.4	36.8	48.8	37.3	40.16	30.9	30.8
<b>DT83</b>	87	66.3	69.7	66.1	52	59	51.7	53.7	65.1	63.7	78.3	63.9	64.71	49.8	43.8
<b>DT84</b>	51.9	39.5	48	38	40.5	36.7	36.2	35.2	26	41.1	52.6	41.3	40.58	31.2	26.8
<b>DT85</b>	78.7	63.4	61.7	66.9	42.4	51.8	48.1	45.2	46.8	57.6	72.9	48.7	57.02	43.9	43.1
<b>DT86</b>	72.4	53.5	49.2	53.9	37.3	38.6	36.2	33.5	44.7	46.4	46.2	49.7	46.80	36.0	27.3
<b>DT87</b>	81.9	68.1	62.6	66	49.4	49.7	51.1	41.5	54.3	57.9	71.4	58.6	59.38	45.7	38.4
<b>DT88</b>	53.1	41.5	36.9	38.2	33.1	31.9	29.9	27.8	36	35.3	46.9	36.3	37.24	28.7	21.4
<b>DT90</b>	71.4	40.3	39.7	46.2	40.7	35.2	30.1	30.9	40.5	33.4	53.4	29.5	40.94	31.5	23.8
<b>DT93</b>	56.2	40.1	33.7	39.1		25.6	26.9	27.4				37.2	35.78	27.2	22.3
<b>DT94</b>	63.3		42.3	38.9	41.8	36.6	28.7	35.8	40.5	40.2	49.7	42.1	41.81	32.2	30.6
<b>DT95</b>	59.2	49.4	44.5	47.9	39.8	36	36.8	31.4	44.8	39.9	51.8	42.9	43.70	33.6	25

☐ Local bias adjustment factor used

☐ National bias adjustment factor used

☐ Annualisation has been conducted where data capture is <75%

### Notes:

Exceedances of the NO<sub>2</sub> annual mean objective of 40µg/m<sup>3</sup> are shown in **bold**.

NO<sub>2</sub> annual means exceeding 60µg/m<sup>3</sup>, indicating a potential exceedance of the NO<sub>2</sub> 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 DT93 (Swanley/Birchwood Road Pucknells) diffusion tube site, the data capture was less than 75%. Therefore this data has been annualised using the methodology within LAQM (TG16).

	Chatham		Rochester		Canterbury		Average Ratio	DT 93	
	Monthly Average	Monthly Ratio	Monthly Average	Monthly Ratio	Monthly Average	Monthly Ratio		measured data	derived data
Jan	40.01520182	1.573543131	28.44605546	1.931164661	26.31733986	1.76626442	1.756990738	56.2	
Feb	25.9484511	1.020387381	15.49108571	1.051669091	16.66202912	1.118256988	1.06343782	40.1	
Mar	24.75575233	0.973486132	12.87312349	0.873939137	15.31641302	1.027947182	0.958457484	33.7	
Apr	24.34160064	0.957200183	11.7849016	0.800061208	14.12729811	0.948140813	0.901800735	39.1	
May	19.77832635	0.777755657	12.38555127	0.840838511	12.98601887	0.871544891	0.830046353		29.69905851
Jun	19.00331455	0.747279377	12.4148013	0.842824257	11.35758011	0.762253699	0.784119111		28.05578178
Jul	21.96851708	0.863881914	8.758050175	0.594572313	9.55535996	0.641299326	0.699917851	25.6	
Aug	18.84344096	0.740992566	10.38977321	0.705347808	11.46727073	0.769615485	0.738651953	26.9	
Sep	21.88876771	0.860745879	11.55655944	0.784559365	12.3726698	0.830380523	0.825228589	27.4	
Oct	23.88404542	0.939207449	12.87065288	0.873771411	11.16632053	0.749417485	0.854132115		30.56084707
Nov	33.19645333	1.305405164	21.1977873	1.43908943	19.7023933	1.322308275	1.355600956		48.50340222
Dec	30.97831864	1.218180049	19.08552507	1.295690772	17.82066421	1.196017732	1.236629518	37.2	
Annual mean	25.43		14.73		14.9			35.78	35.2515908

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 (NO<sub>x</sub>, PM<sub>10</sub> & O<sub>3</sub>) since 1997. The Bat & Ball roadside site has monitored NO<sub>x</sub> and PM<sub>10</sub> since 2006. The Sevenoaks Quarry CMS commenced monitoring for PM<sub>10</sub> mid July 2015. This site is to be closed shortly.

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 PM<sub>10</sub> 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:**

NO<sub>2</sub> 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.

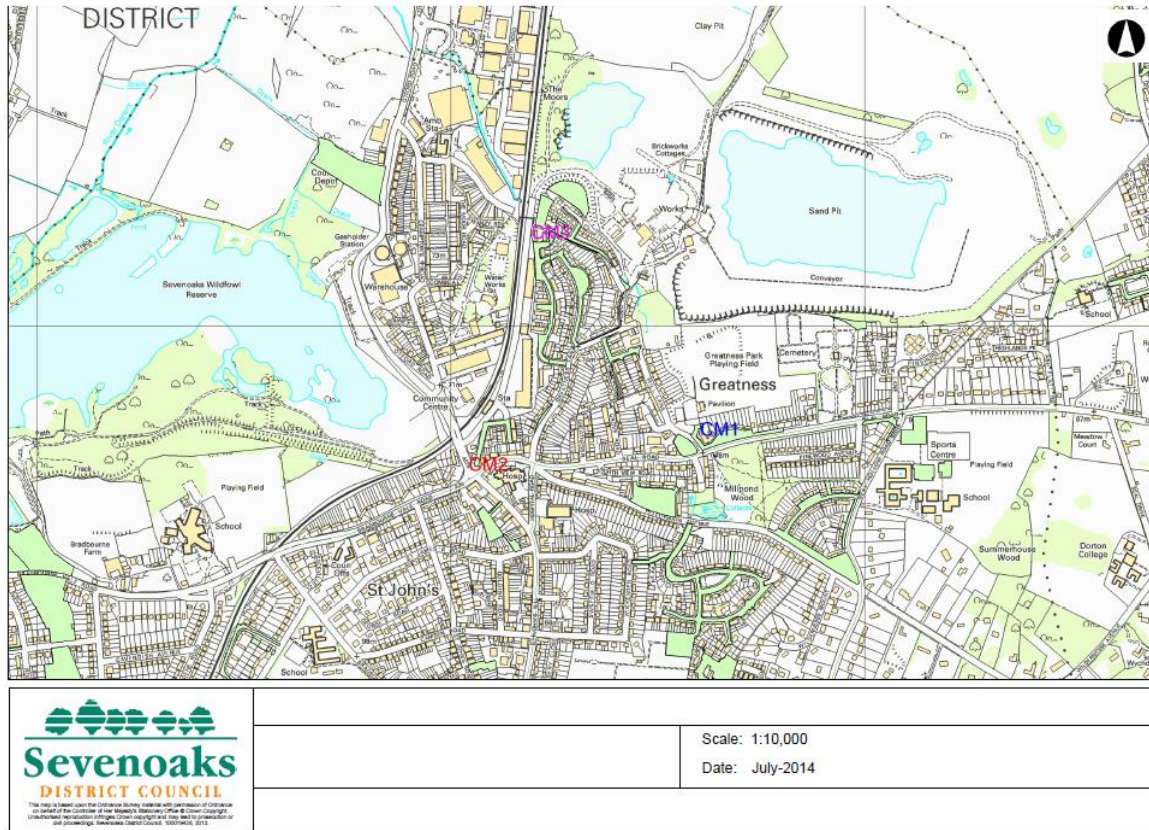
The tubes have been compared with the reference method by a triplicate co-location study with the chemiluminescent NO<sub>x</sub> analysers at Greatness Park, Sevenoaks.

The locally derived Bias Factor from the above co-location study for 2017 was 0.77

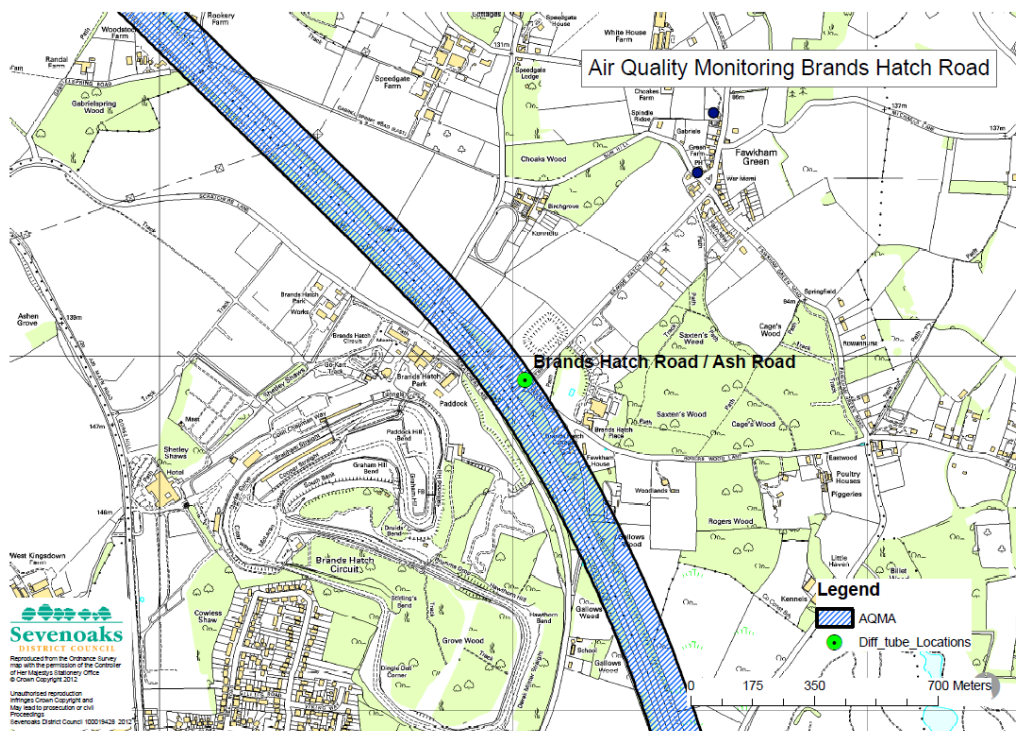


## Appendix D: Map(s) of Monitoring Locations and AQMAs

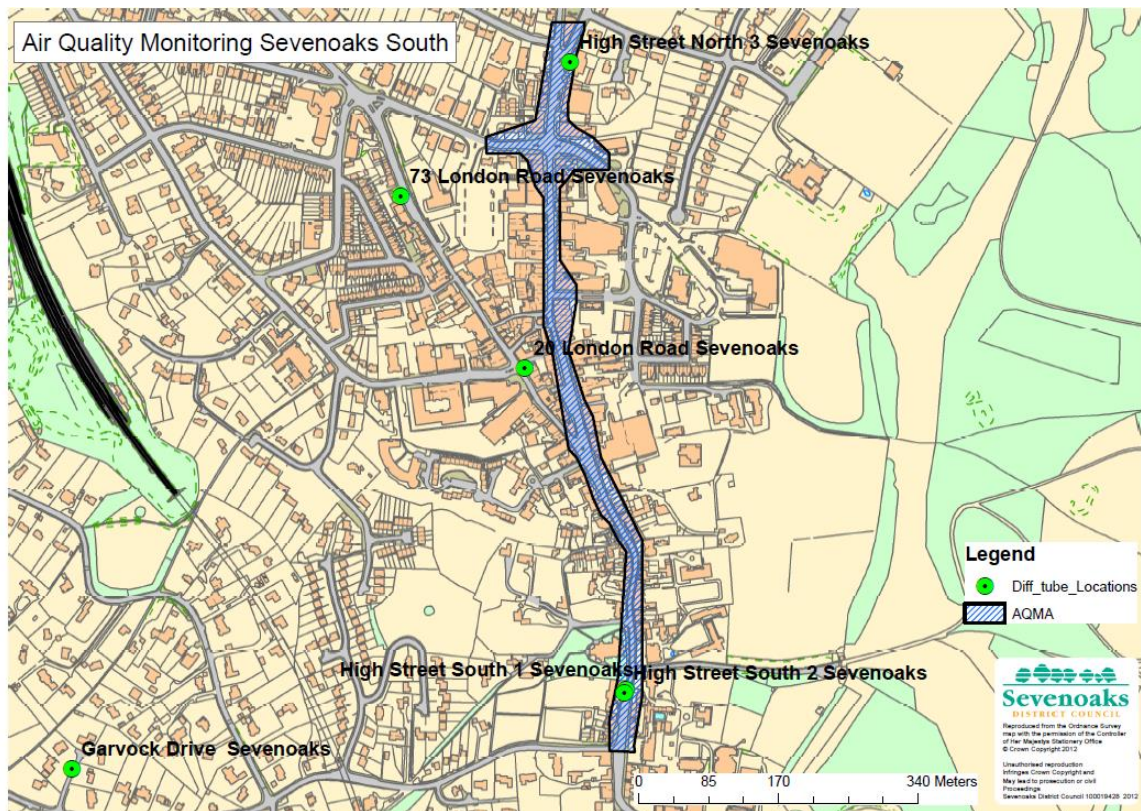
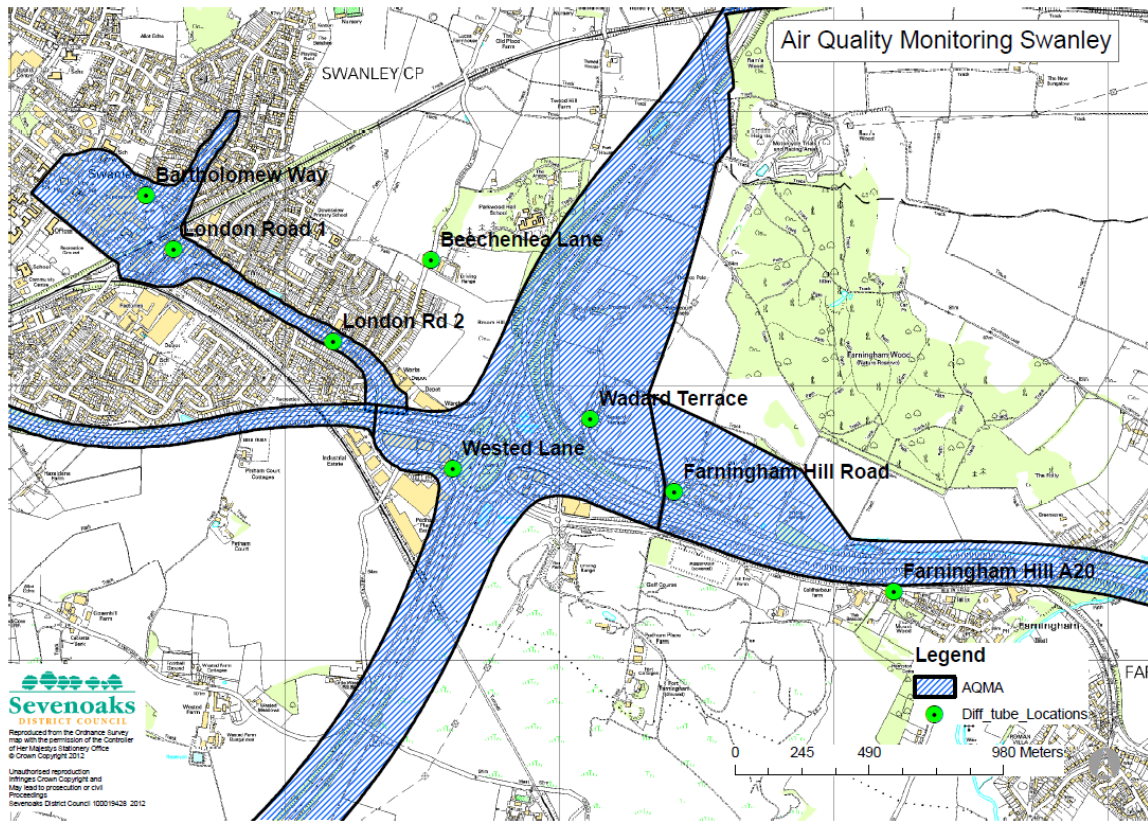
### Automatic Monitoring Stations



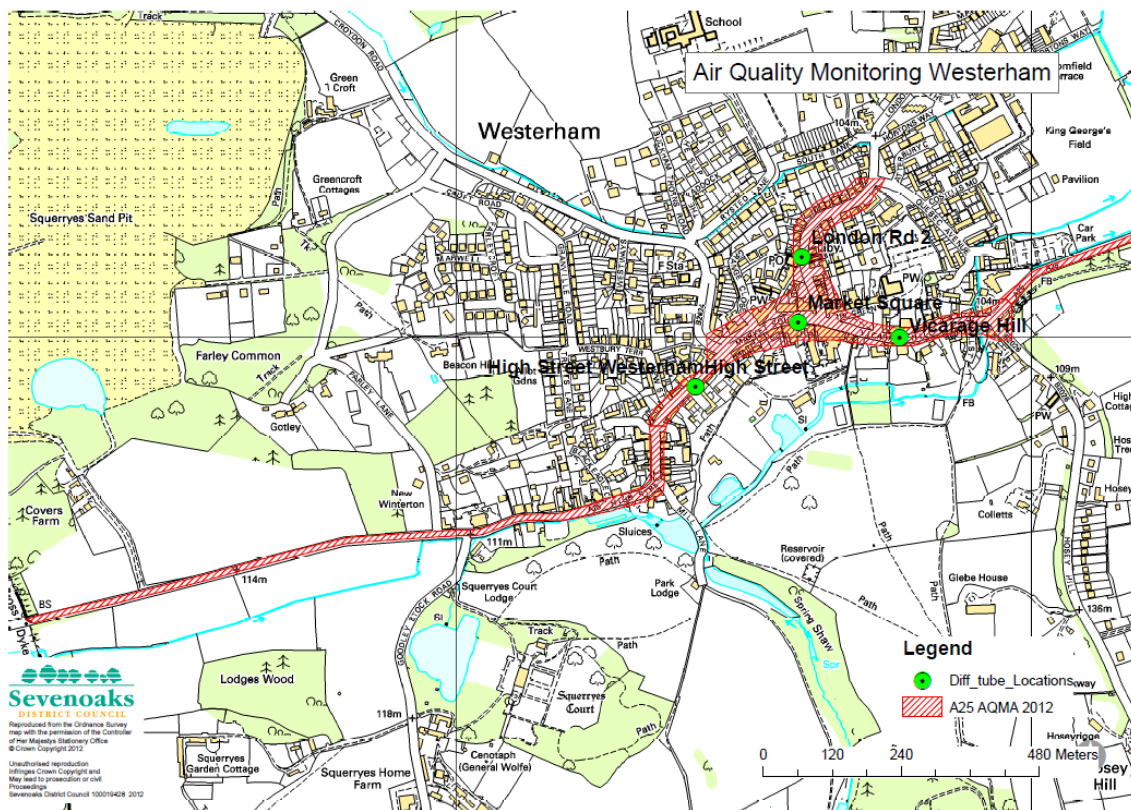
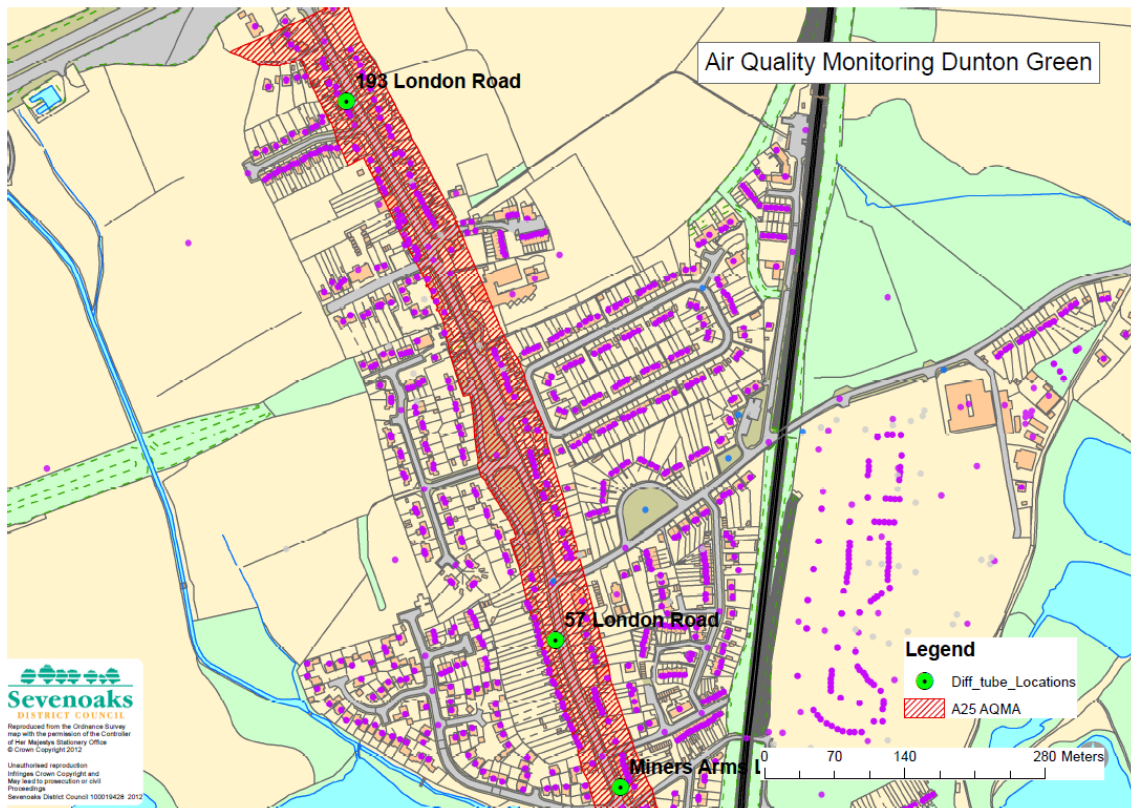
### Diffusion Tube Locations

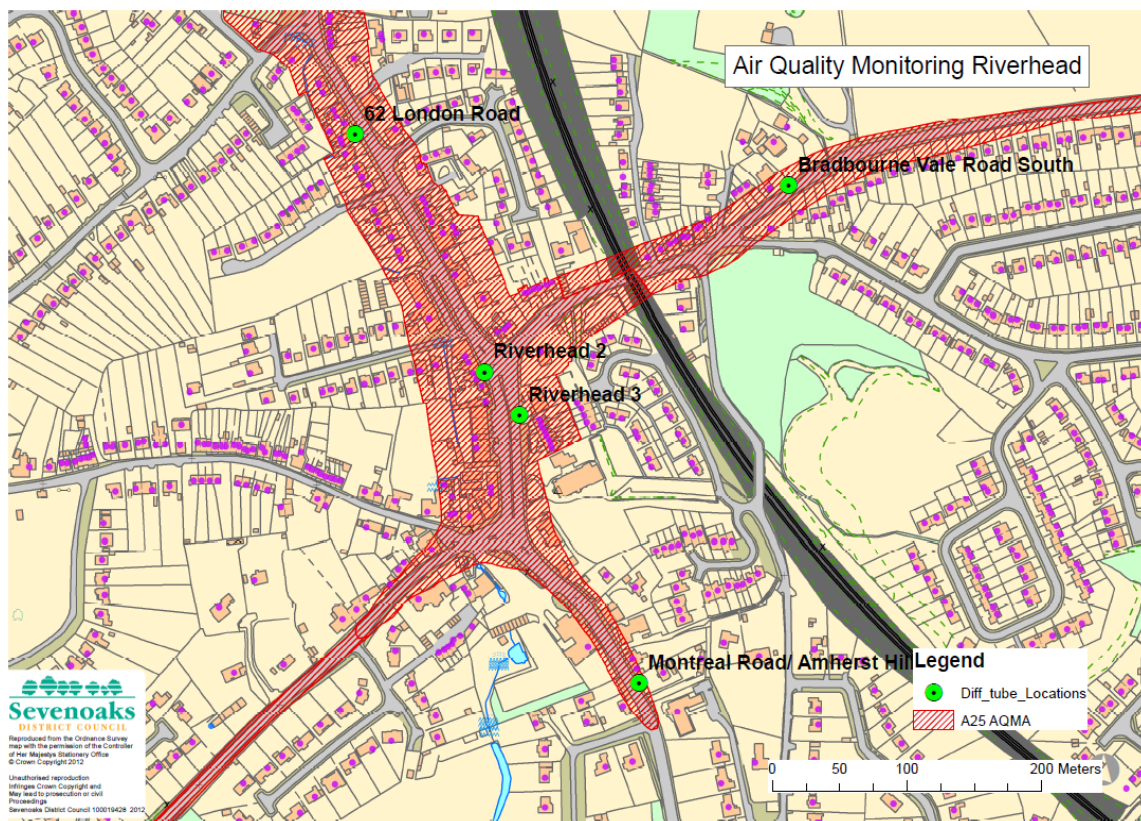
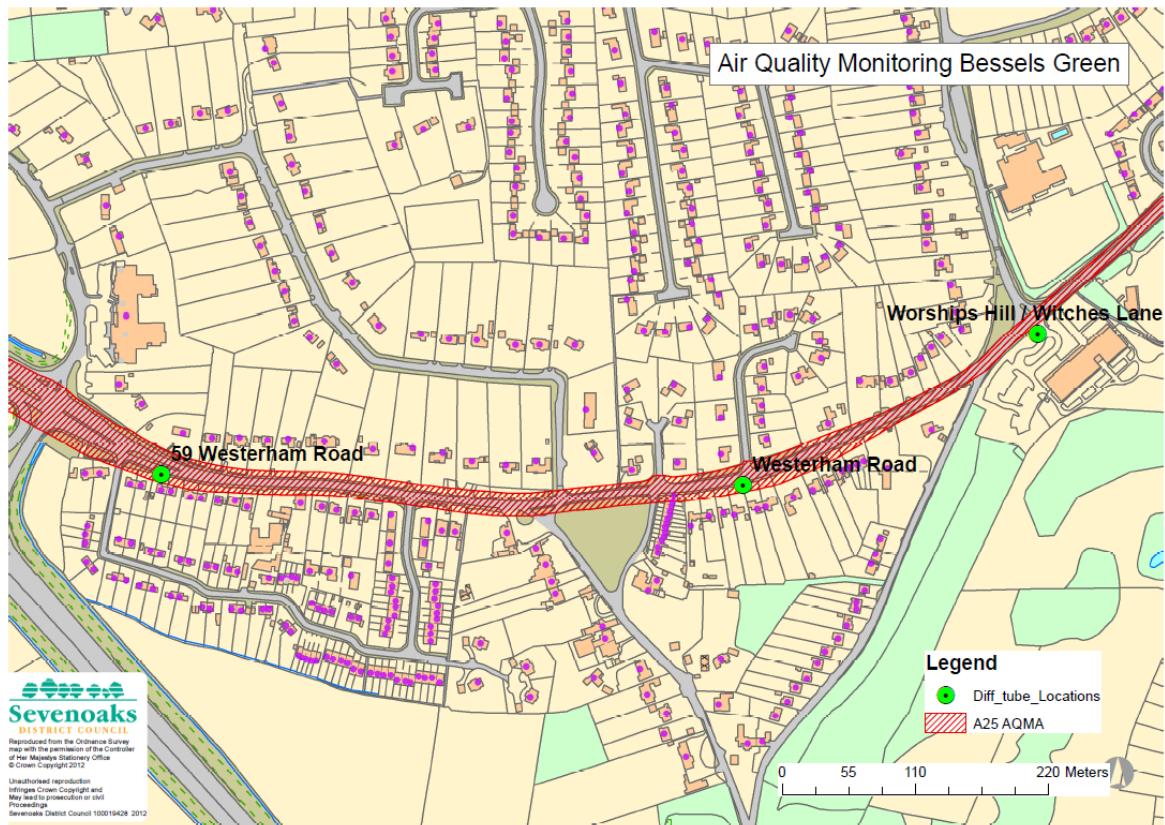




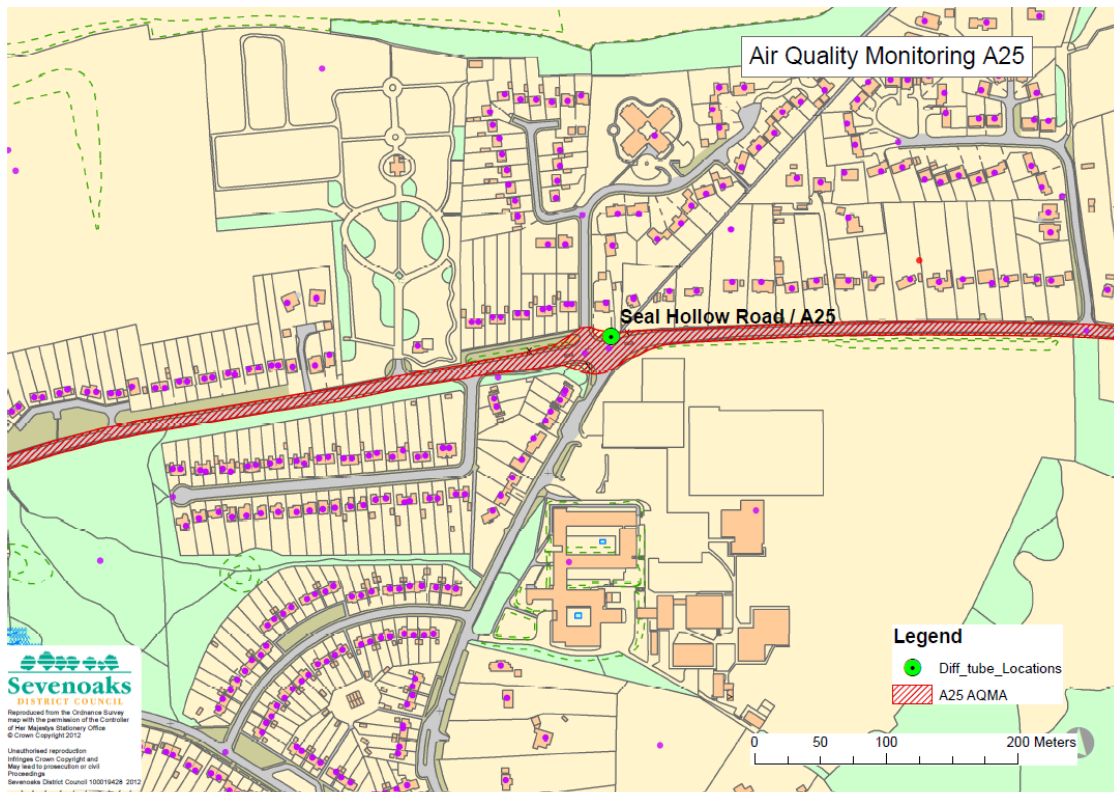
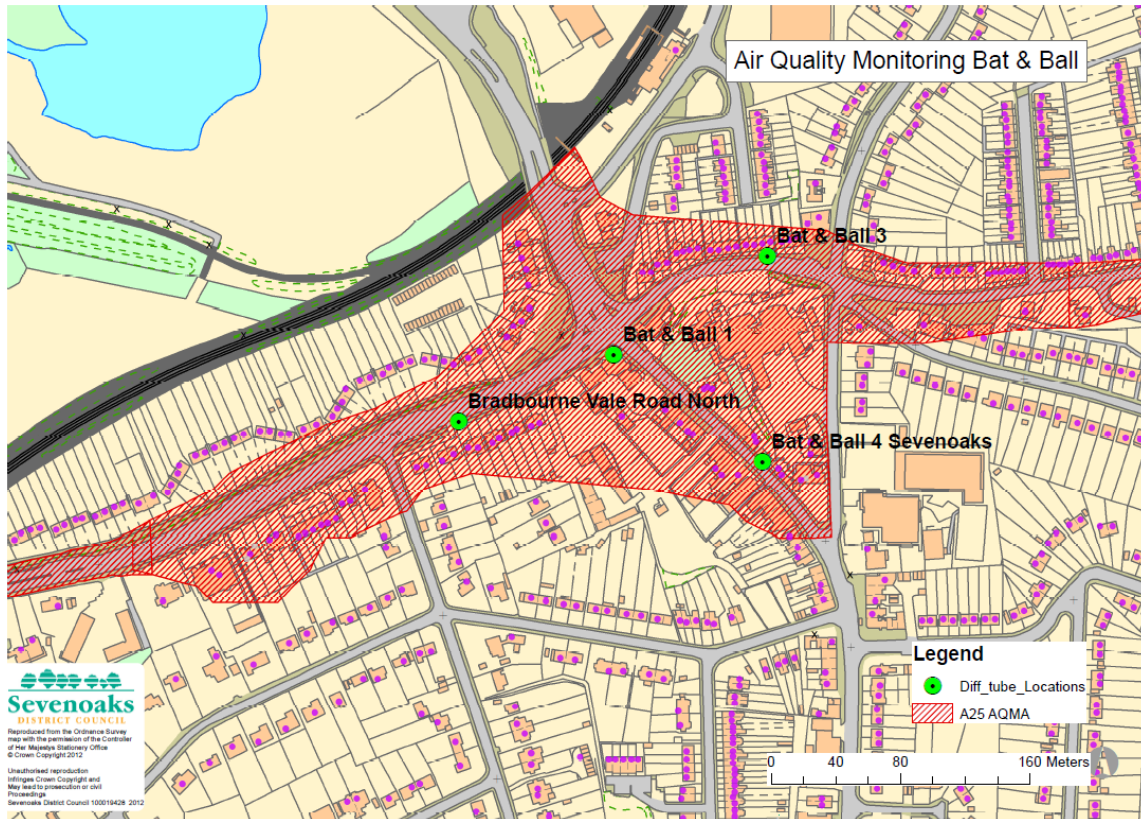


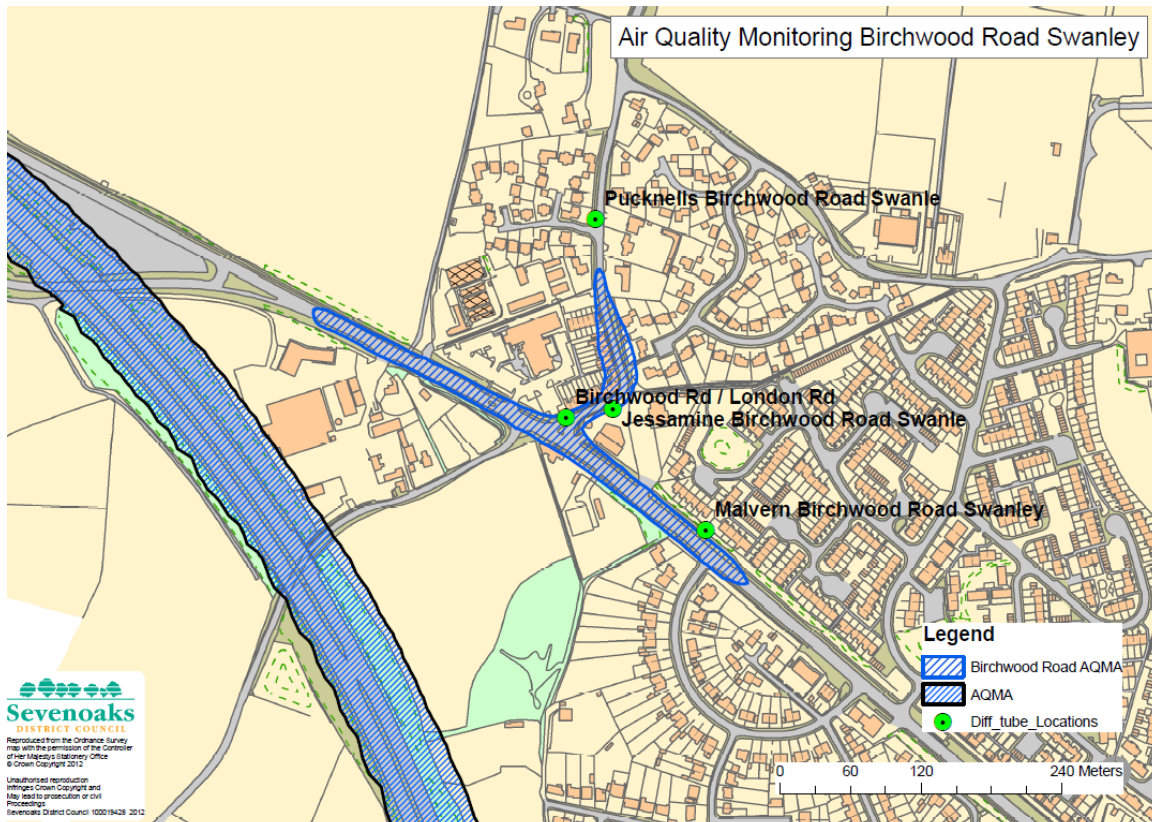
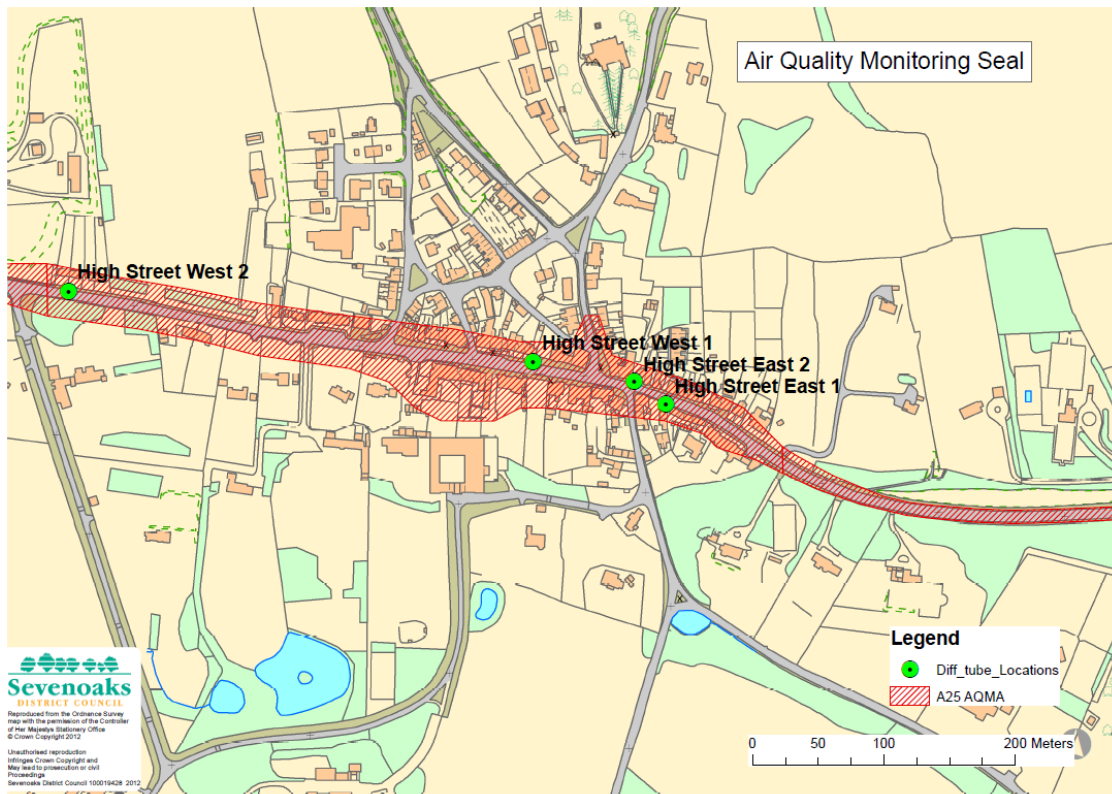




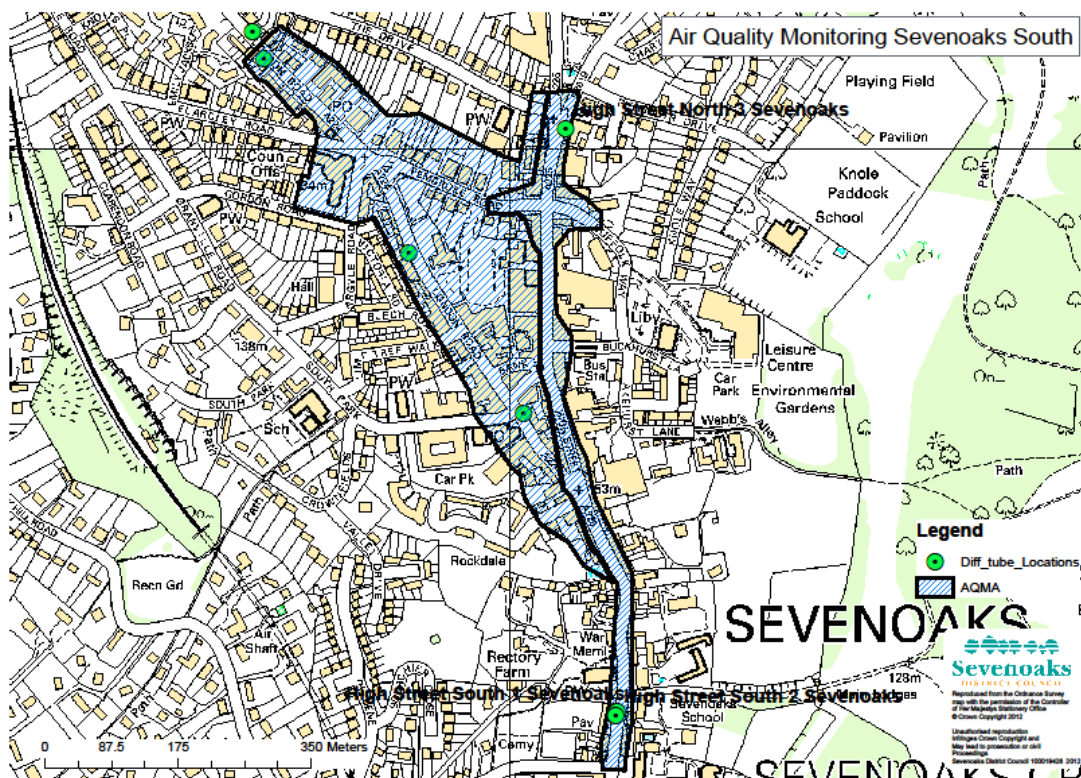












## Appendix E: Summary of Air Quality Objectives in England

Table E.1 – Air Quality Objectives in England

Pollutant	Air Quality Objective <sup>4</sup>	
	Concentration	Measured as
Nitrogen Dioxide (NO <sub>2</sub> )	200 µg/m <sup>3</sup> not to be exceeded more than 18 times a year	1-hour mean
	40 µg/m <sup>3</sup>	Annual mean
Particulate Matter (PM <sub>10</sub> )	50 µg/m <sup>3</sup> , not to be exceeded more than 35 times a year	24-hour mean
	40 µg/m <sup>3</sup>	Annual mean
Sulphur Dioxide (SO <sub>2</sub> )	350 µg/m <sup>3</sup> , not to be exceeded more than 24 times a year	1-hour mean
	125 µg/m <sup>3</sup> , not to be exceeded more than 3 times a year	24-hour mean
	266 µg/m <sup>3</sup> , not to be exceeded more than 35 times a year	15-minute mean

<sup>4</sup> The units are in microgrammes of pollutant per cubic metre of air (µg/m<sup>3</sup>).



## 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 <sub>2</sub>	Nitrogen Dioxide
NO <sub>x</sub>	Nitrogen Oxides
PM <sub>10</sub>	Airborne particulate matter with an aerodynamic diameter of 10µm (micrometres or microns) or less
PM <sub>2.5</sub>	Airborne particulate matter with an aerodynamic diameter of 2.5µm or less
QA/QC	Quality Assurance and Quality Control
SO <sub>2</sub>	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 – Annual Status Report (2017)