

AIR QUALITY MONITORING AND MANAGEMENT

Housing and Community Safety Advisory Committee - 11 February 2014

Report of Richard Wilson – Chief Officer – Environmental and Operational Services

Status: For information

Key Decision: No

Executive Summary: This report provides information on the statutory duty for the council to review both the current and future air quality within the district of Sevenoaks. The Environmental Health (EH) team are responsible for carrying out this duty in line with Department of Environment, Food and Rural Affairs (DEFRA) guidance. This involves the regular review and assessment of air quality and reporting according to prescribed protocols.

The effect on health and regional mortality is described and local monitoring information and trend graphs are included.

The District Council currently has nine Air Quality Management Areas (AQMAs) due to exceedances of national objective levels for Nitrogen Dioxide (NO₂) and Particulate Matter (PM₁₀) and an Air Quality Action Plan which was implemented in 2009.

The Air Alert scheme is an important Action Plan initiative which the Council is progressing which is being part funded by DEFRA grants as well as contributions from Section 106 agreements. Air Alert is a text/email service for people who suffer with asthma or other lung problems advising them in advance of poor pollution levels so they can take extra steps to manage their condition.

An invitation to the official launch of Air Alert will shortly be sent to all councillors.

Recently the EH team at Sevenoaks responded at length to a consultation from DEFRA on the validity of continuing local air quality management regime in its current format. The Council was broadly supportive of proposed changes to remove the current duties on Local Authorities who have little influence over the strategic decisions necessary to reduce air pollution which is primarily vehicle generated. This was a minority viewpoint and a new consultation is proposed during 2014.

This report supports the Key Aim of a Healthy Environment.

Portfolio Holder Cllr. Mrs Lowe

Contact Officer(s) Annie Sargent Ext 3085, Alex Dawson Ext 3129, James Fox Ext 3250

Recommendation to Housing & Community Safety Advisory Committee: That the report be noted.

Introduction and Background

Air Quality Legislation

1. The EU ambient air quality directives set limit values for certain pollutants which must not be exceeded. The Directive describes how to assess compliance by dividing countries into zones. In the UK, Defra monitors and models air quality across 43 zones to assess compliance with the Directive.
2. The UK Air Quality Strategy provides the policy context for Local Air Quality Management (LAQM) and assessment in the UK. This strategy establishes a range of air quality “standards”, and “objectives” for delivering the strategy. These air quality objectives are either effectively identical to the EU limit values, or more stringent.
3. Part IV of the Environment Act 1995, places a statutory duty on local authorities to periodically review and assess the air quality within their area and identify areas in which the outdoor air quality does not meet the national Air Quality Objectives (AQOs). Where it appears that the air quality objectives will not be met by the designated target dates, local authorities must declare an Air Quality Management Area (AQMA) and develop action plans in pursuit of those objectives.
4. Each Review and Assessment round consists of the LA initially undertaking an Updating and Screening Assessment (USA) and then carrying out the following stages if any objectives are found to be exceeded in an area:
 - Detailed Assessment of those areas identified in the USA as potential AQMA’s
 - Designation of AQMA
 - Further Assessment of air pollution in the AQMA
 - Amendment if necessary of AQMA boundaries
 - Air Quality Action Plan
 - Annual Action Plan Progress Reports in between USA’s

We are currently in the fifth round of Review and Assessment

Relevant UK Air Quality Objectives

Nitrogen Dioxide (NO₂) annual mean limit: 40µg/m³

Particulate Matter (PM₁₀) annual mean limit: 40µg/m³

Health Impacts of Air Pollution

5. Despite improvements in air quality over many decades poor air quality continues to impact upon public health and the environment. It has been estimated that poor air quality causes up to 50,000 deaths per year and probably causes more mortality and morbidity than passive smoking, road traffic accidents or obesity.

The equivalent to 29,000 deaths and an average loss of six months life expectancy is also attributable alone to Particulate Matter air pollution. In 2012 a new estimate of 1180 early deaths as a result of just PM2.5 air pollution across Kent & Medway during 2010 was calculated by the Kent & Medway Air Quality Partnership Health Sub Group. (See Appendix 1)

6. The financial burdens from the health, economic and social impacts in the UK are considerable with additional costs to the NHS from respiratory hospital admissions triggered for conditions such as Asthma and Chronic Obstructive Pulmonary Disease (COPD). Air pollution is considered to be one of the potential causes and exacerbating factor for COPD.
7. The UK like many other Member States is having problems meeting EU Air Quality standards and is also at significant risk of infraction, especially with regard to nitrogen dioxide exceedance. This exceedance in part is caused by the poor abatement performance of euro standards for certain vehicle classes and also increased use of diesel by the vehicle fleet.

Local Air Quality Management at Sevenoaks

8. Sevenoaks currently has 9 Air Quality Management Areas (AQMA) relating to exceedances of the NO₂ and PM₁₀ objectives. (See Appendix 2)

Air Quality Action Plan 2009

9. The Air Quality Action Plan 2009 outlines a number of measures and actions which are aimed at reducing levels of air pollution within the Council's original 11 AQMAs and generally across the District.
10. This plan will need to be reviewed during 2014/15 depending on final outcome of the Government's consultation of Local Air Quality Management delivery in England (See later)

Air Quality Monitoring Data

11. The Council has two continuous automatic air quality monitoring stations (CMS) which take real time measurements of selected pollutants. **Greatness** background site has monitored 3 pollutants Nitrogen Oxide (NO_x), PM₁₀, and Ozone (O₃) since 1997 and **Bat & Ball** roadside NO_x and PM₁₀ since 2006.
12. Sevenoaks is part of the London Air Quality Network and the monitoring data collected can be used in a variety of ways, including providing local information for developers preparing Environmental Impact and Air Quality Assessments, identifying trends, supporting the LAQM process and providing more strategic information for use by the Greater London Authority and central government.
13. In addition, there are 55 diffusion tube sites around the district. NO₂ diffusion tubes are used for ambient air monitoring within the District and are capable of

providing long term assessments for modelling and determining air management locations at a low cost.

14. See Appendix 3 for details of site locations and results of NO₂ Diffusion tube monitoring: 2010 – 2012
15. See Appendix 4 which shows trends in Annual Mean Nitrogen Dioxide Concentrations Measured at Diffusion Tube Monitoring Sites

Air Alert

16. The Air Alert scheme is a service for people with asthma or other lung problems, which sends a message to their mobile, home phone or email address on the day before high pollution is predicted in the area. This warning enables them to take extra preventive steps to manage their health and ideally help prevent admissions or the length of stay in hospital.
17. The scheme was established by the Sussex Air Quality Partnership (Sussex-air) in 2006 as a service model for other LAs. Sevenoaks Council operate it in partnership with them and Kings College London (ERG).
18. The scheme went live with a soft launch on the 10th January 2014 and will be formally launched in February 2014
19. The scheme will be free to Sevenoaks residents and will run for a minimum of 2 years.
20. The Council has received £41,402 in air quality grants from Defra to set up and run Air Alert and has received other contributions via Section 106 agreements towards it.

Funding

21. The current annual budget for air quality is £65,919 (excluding officer time and salary costs) and comprises the following elements:
 - Review and Assessment (consultant reports as required) - £22,359
 - Greatness and Bat and Ball Continuous Air Quality Monitoring Stations - £40,315
 - Diffusion Tubes - £3,245

Defra air quality grants

22. Since 2008, the Council has received seven grants totalling £116, 902 for use towards monitoring and equipment costs, investigating traffic options and schemes within AQMAs and Air Alert

Section 106 Agreements

23. The Council has obtained funding from the following eight local developments totalling £135,184 for use towards monitoring costs, Air Alert and actions within the Air Quality Action Plan 2009

- Tarmac Ltd (Greatness Quarry)
- West Kent Cold Storage Company Ltd
- Bellway Homes Ltd (formally St Barts Laundry)
- Sainsbury's Supermarkets Ltd – Otford
- Tesco Stores Ltd
- Greatness Mill, Sevenoaks
- Lidl, Sevenoaks
- Waitrose Ltd, Sevenoaks

Defra Consultation

24. During the summer of 2013, Defra consulted Local Authorities and a wide range of interested parties on the current LAQM regime. They set out the following aims to improve air quality in the UK.

- Local action be focused on what is necessary to support air quality improvements to benefit public health and to work towards EU air quality standards
- Local government and other stakeholders be clear on their roles and responsibilities and work together to improve air quality
- Local authorities have simple reporting requirements with less bureaucracy and time to concentrate on actions to improve air quality and public health
- Local authorities have access to information about evidence based measures to improve air quality, including on transport and communications

25. In order to achieve these aims, the Government proposed the following four options on how LAQM might be changed as a result of the consultation:

1. Business as usual with limited changes
2. Concentration on Action Planning and focuses reporting
3. Alignment with EU requirements to meet air quality limit values
4. Separate local air quality management duties do not exist

26. Sevenoaks District Council responded that it believed that either options 3 or 4 would address many of the issues associated with the current LAQM regime and make improving air quality a strategic function which would allow local authorities to determine their own priorities.

27. There was very little other support for option 4 though which was highlighted by many as likely to worsen rather than improve air quality and only limited support for option 3.
28. Option 3 was the Government's preferred option which would have seen the removal of local air quality reporting on LAQM objectives and instead use national monitoring and modelling to report on EU values. Defra were keen to stress that their preferred option 3 was not to be interpreted as a 'dismantling' of LAQM, as they wanted the regime to be a powerful tool in tackling poor air quality at the local level and local assessment and action would continue to play a role in this.
29. The consultation was also supported by an impact assessment which highlighted significant financial savings to local authorities as a result of reduction in air quality monitoring.
30. Option 2 was identified as being more generally able to achieve the aims of the review.
31. The consultation generated over 200 substantive responses and 18,000 campaign emails.
32. Following this consultation Defra have stated that their next steps are to:
 - Review the range of air quality objectives that apply to local authorities, taking into account the relevance of these objectives for health protection, and the levels assessed in recent years.
 - Review the need for additional guidance on these duties as part of its review of guidance to local authorities in fulfilling their duties under the Act.
 - Make proposals to introduce regular annual reporting on air quality for local authorities, taking into account comments made and following further discussions with stakeholders on the content of such reports.
 - Take account of the support for retaining AQMAs and review guidance on declaration/revocation procedures in order to reduce administrative burdens, taking into account matters of health impacts through exposure to air pollution and scope for measures.
 - Continue to explore (with delivery partners and stakeholders) ways of improving and disseminating evidence-based measures, including supporting innovative schemes. Revise official guidance to coincide with the implementation of changes to the LAQM system, likely to be mid-late 2015.
 - Explore all alternatives with key delivery partners in the early part of 2014, the outcome of which will inform a second consultation (in mid-late 2014) on regulatory changes and guidance.

Key Implications

Financial

The budget of £65,919 is specifically allocated to carrying out the statutory function of Air Quality Monitoring. DEFRA grants and Section 106 Agreements have been awarded and can assist with monitoring and equipment costs.

Legal Implications and Risk Assessment Statement

Part IV of the Environment Act 1995 requires local authorities in the UK to review air quality in their area and designate air quality management areas if improvements are necessary. Where an air quality management area is designated, local authorities are also required to work towards the Strategy's objectives prescribed in regulations for that purpose. An air quality action plan describing the pollution reduction measures must then be put in place. These plans contribute to the achievement of air quality limit values at local level.

Risk assessment – Air Quality Monitoring is statutory service. If submissions are not made to DEFRA at required intervals, may be subject to external scrutiny and possible intervention from DEFRA (with costs recharged to Council).

Equality Impacts

Consideration of impacts under the Public Sector Equality Duty:		
Question	Answer	Explanation / Evidence
a. Does the decision being made or recommended through this paper have potential to disadvantage or discriminate against different groups in the community?	No	
b. Does the decision being made or recommended through this paper have the potential to promote equality of opportunity?	No	
c. What steps can be taken to mitigate, reduce, avoid or minimise the impacts identified above?		

Conclusions

1. Local Air Quality Management is a statutory function
2. Poor air quality can adversely affect health and reduce life expectancy. Financially it costs the country substantial amounts in terms of treatments and hospital admissions with a social and economic impact on those affected.

3. The Council's existing monitoring programme provides good coverage for the District, with two CMS and a wide network of diffusion tubes.
4. Monitoring data collected provides valuable information about local pollution levels which is useful for informing planning decisions and public health issues
5. The Council currently has nine AQMAS
6. Previous review and assessment rounds have established that the AQS Objective and EU Limit Values for NO₂ have been exceeded in eight locations and in one area for PM₁₀.
7. The current Air Quality Action Plan 2009 contains a number of measures and actions aimed at reducing levels and mitigating the effects of air pollution within the AMQAs and across the District.
8. The Council has successfully obtained over £252,000 from Defra Air Quality Grants and Section 106 funding for use towards monitoring costs and undertaking measures contained in the Air Quality Action Plan 2009.
9. The Government is continuing to review the LAQM regime and is aiming to launch a fresh consultation in mid to late 2014 following its failure to receive sufficient support to change the existing regime as proposed. This was due to widespread concerns that removing local authority duties to monitor air quality would result in poorer air quality and in an inability to adhere to national European targets.

Appendices

Appendix 1 - Table 1 Early deaths in Kent and Medway from PM_{2.5} pollution in 2010

Appendix 2 – Table 2 - Local Air Quality Management at Sevenoaks

Appendix 3 -Site Locations and results of NO₂ Diffusion Tube Monitoring 2010- 2012

Appendix 4 - Selected Trends in Annual Mean Nitrogen Dioxide Concentrations Measured at Diffusion Tube Monitoring Sites

Background Papers:

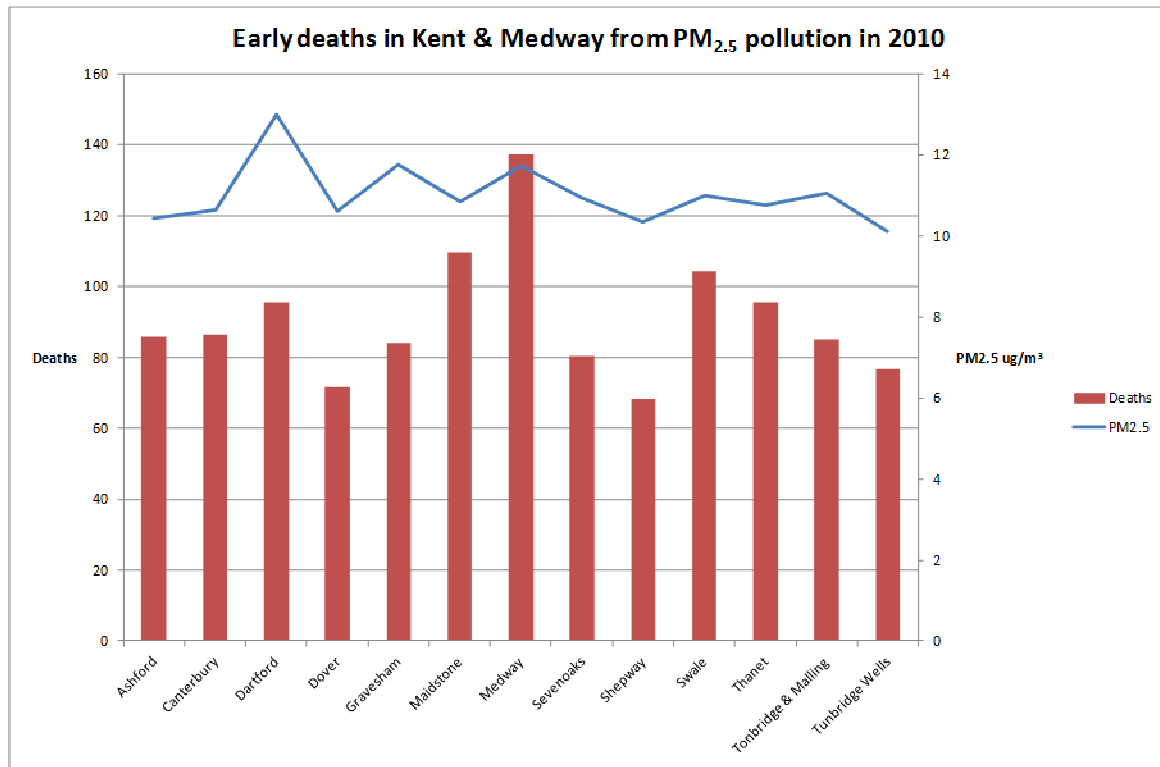
1. The Environment Act 1995
2. Kent and Medway Air Quality Partnership – Health Sub group
3. Air quality Action Plan 2009
4. Annual air quality progress report 2013
5. Local Air Quality Management Consultation on options to improve air quality management in England

Richard Wilson

Chief Officer Environmental and Operational Services

Appendices

Appendix 1 - Table 1 Early deaths in Kent and Medway from PM_{2.5} pollution in 2010



Appendix 2 - Table 2 - Local Air Quality Management at Sevenoaks

Sevenoaks currently has 9 Air Quality Management Areas (AQMA) relating to exceedances of the NO₂ and PM₁₀ objectives.

Air Quality Management Area Number	Location	Pollutants Monitored
1	M20 - from Junction 3 of the M25 to Tonbridge and Malling BC	NO ₂
2	M25 - Between Surrey and Dartford & from Junction 3 M25/M20 to Tonbridge and Malling BC	NO ₂
3	M26 - from Junction 5 of the M25 to Tonbridge and Malling Borough Council (5.6 miles)	NO ₂
4	A20 (T) Swanley Bypass - from Junction 3 of the M25 to LB Bromley (2.7miles)	NO ₂
6	M25 - Junction 5 to Kent / Surrey border	PM ₁₀
8	B2173 Swanley: London Road (East); High Street; Bartholomew Way & parts of Central town area.	NO ₂
10	A225 Sevenoaks High Street Sevenoaks	NO ₂
13	A25 Between Tonbridge & Malling BC and Tandridge DC (For NO ₂)	NO ₂
14	Swanley – Junction between Birchwood Road and London Road	NO ₂

Air Quality Management Area's that have now been Revoked

Air Quality Management Area Number	Location	Pollutants Monitored
5	A25 Riverhead - between its northern and southern junctions with the A224	NO ₂
7	Not an AQMA	
9	A25 Seal High Street	NO ₂

11	A25 Westerham: High Street; Market Square; Vicarage Hill & A233 London Road	NO2
12	A25 Bat and Ball - Junction with A225	NO2

Appendix 3 -Site Locations and results of NO₂ Diffusion Tube Monitoring 2010- 2012

Location	Within AQMA?	Full Calendar Year Data Capture 2012 (Months)	Annual Mean Concentration (µg/m ³)		
			2010	2011	2012
Sevenoaks					
Garvock Drive.	N	12	15.8	13.7	14.9
High Street. South 1	Y	12	<u>63.7</u>	<u>64.1</u>	<u>64.6</u>
High Street. South 2	Y	12	46.7	46.2	45
High Street North 2	Y	12	50.4	48.2	51.8
High Street North 3	Y	12	31.6	31.2	33.6
London Road 73	Y	10	35.5	37.6	35.8
London Road 20	Y	12	36.5	36.4	33.3
London Road 130	Y	12	43.9	42.8	43.3
London Road 133	Y	11	35.8	36.9	36.2
London Road 142	Y	12	41.3	42.2	41.4
London Road / Montreal Rd	N	12	47.3	48.1	44.8
Bradbourne Vale Road South	N	12	53.7	58	56.7
Bradbourne Vale Road North	N	12	41.5	40.1	39.8
4A St Johns Hill	N	12	40.8	41.4	41
St Johns Egdean Walk	N	12	22.2	23.6	22.9

Bat & Ball					
Bat & Ball. 1	Y		40.7	43.4	43.1
Bat & Ball 2 Otford Rd	Y	11	38.6	39.1	42.5
Bat & Ball 3 Seal Rd	Y	12	55.8	57.5	<u>60.2</u>
Bat & Ball 4 St Johns	Y	12	<u>61.9</u>	59.3	<u>60.8</u>
Riverhead					
Riverhead 2.	Y	11	50.6	54.7	53.5
Riverhead 3.	Y	12	53.2	51	51.5
London Road R	Y	12	44.4	46	47.1
Worships Hill	N	12	38	39.5	45.3
Seal					
High Street. East 1 Seal.	Y	11	51	53.3	56.5
High Street. East 2	Y	12	51.9	50.2	53.8
High Street. West 1 .	Y	11	38.6	36.2	38.2
High Street. West 2	Y	12	38.8	37.4	39.7
Seal Hollow Rd Jcn with A25	N	12	41.1	41.7	44
Dunton Green					
London Rd DG Miners Arms	Y	12	38.7	36.1	36.2
London Rd DG 57	Y	11	40.7	39	43
London Rd DG 193	Y	12	33.7	38.3	32.8

Bessels Green					
Westerham Road	N	12	40.3	47	48
59 Westerham Rd	N	12	45.1	49.7	46.5
Eynsford					
High Street	N	12	29.8	30.4	31.2
Sundridge					
A25 204 Main Rd	N	12	36.3	40.4	38.8
8 Chevening Rd	N	12	33.9	32.6	33.7
Brasted					
Station Rd.	Y	12	50.1	50.5	53.7
Chart Ln Brasted	N	12	52.2	56.7	56.2
West End Brasted	N	12	35.7	35.3	38.7

Location	Within AQMA?	Full Calendar Year Data Capture 2012 (Months)	Annual Mean Concentration ($\mu\text{g}/\text{m}^3$)		
			2010	2011	2012
Westerham					
High Street	Y	12	46	46.5	39.2
Vicarage Hill	Y	12	34.8	33.9	36.3
Market Square	Y	12	51.8	55.2	55.3
London Road 2 Westerham	Y	12	33.5	34	33.9

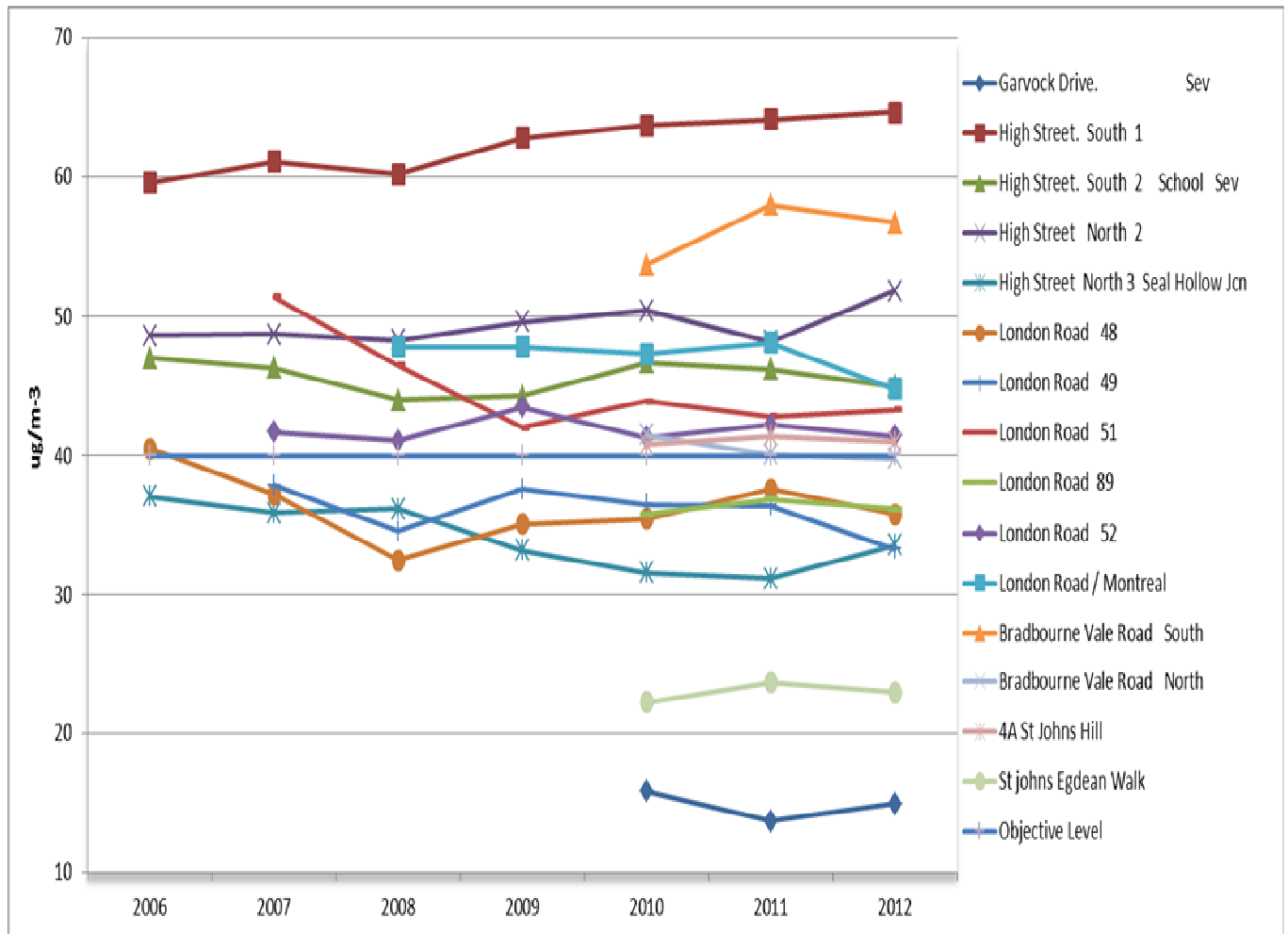
Swanley					
Batholomew Way 2	Y	12	44	45.8	42.3
London Road 1 Swanley	Y	12	55.7	52.1	54.8
London Road 2	Y	12	48.1	46.4	45.7
London Road/Wested Ln Swanley	Y	12	48	42.4	40.1
Wardard Terrace Button St. Swanley	Y	12	38.8	43.3	41.9
Farningham Hill Rd	Y	12	34.8	40.9	40.5
Birchwood Rd - Jessamine	N	12	56.9	59.7	<u>62.1</u>
Birchwood - Pucknells	N	12	32.8	32.5	32.8
Birchwood Rd - Malvern	N	12	39.6	40.2	39.6
Birchwood Junction London Rd	N	12	39	41.9	37.6
Farningham					
Farningham Hill (A20)	Y	12	49.4	44.5	48
West Kingsdown					
Brands Hatch Road/Ash Road	N	12	32.3	36.5	33.7

Bold: Highlights exceedance of the NO₂ annual mean AQS objective of 40µg/m³

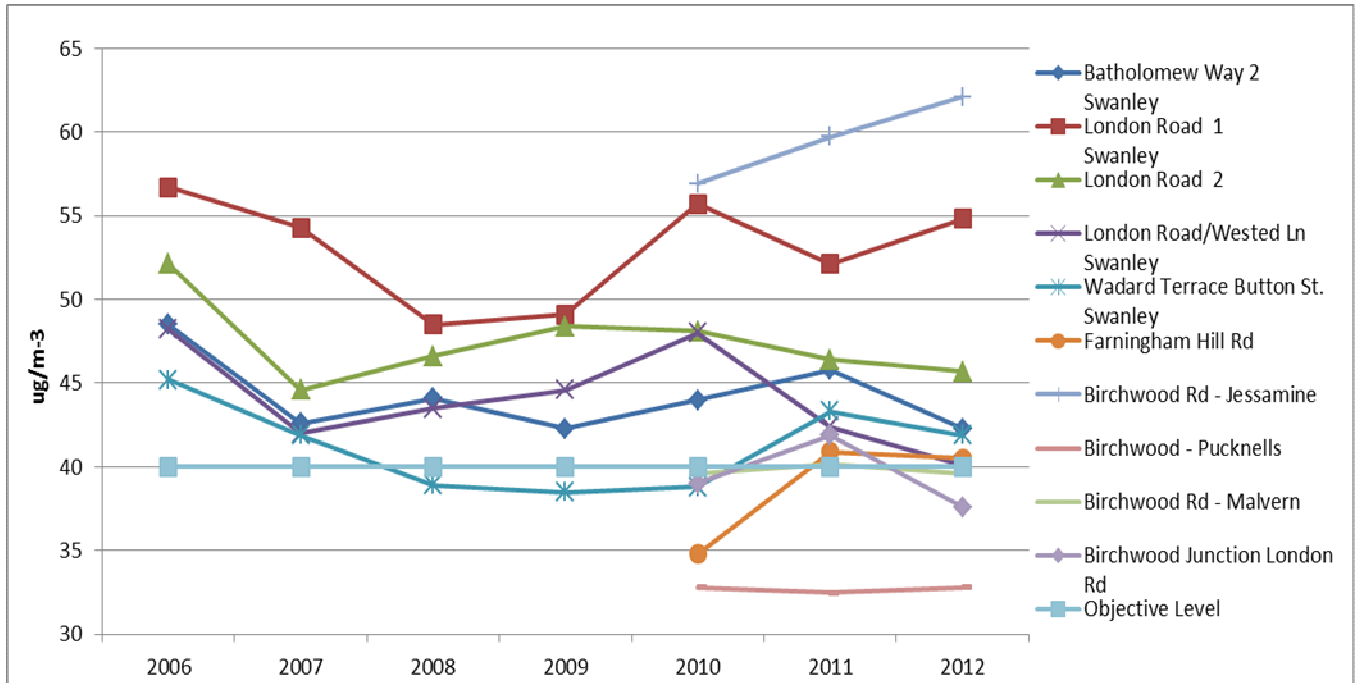
Underlined: Highlights annual mean > 60µg/m³, indicating a potential exceedance of the NO₂ hourly mean AQS objective

Appendix 4 - Selected Trends in Annual Mean Nitrogen Dioxide Concentrations Measured at Diffusion Tube Monitoring Sites

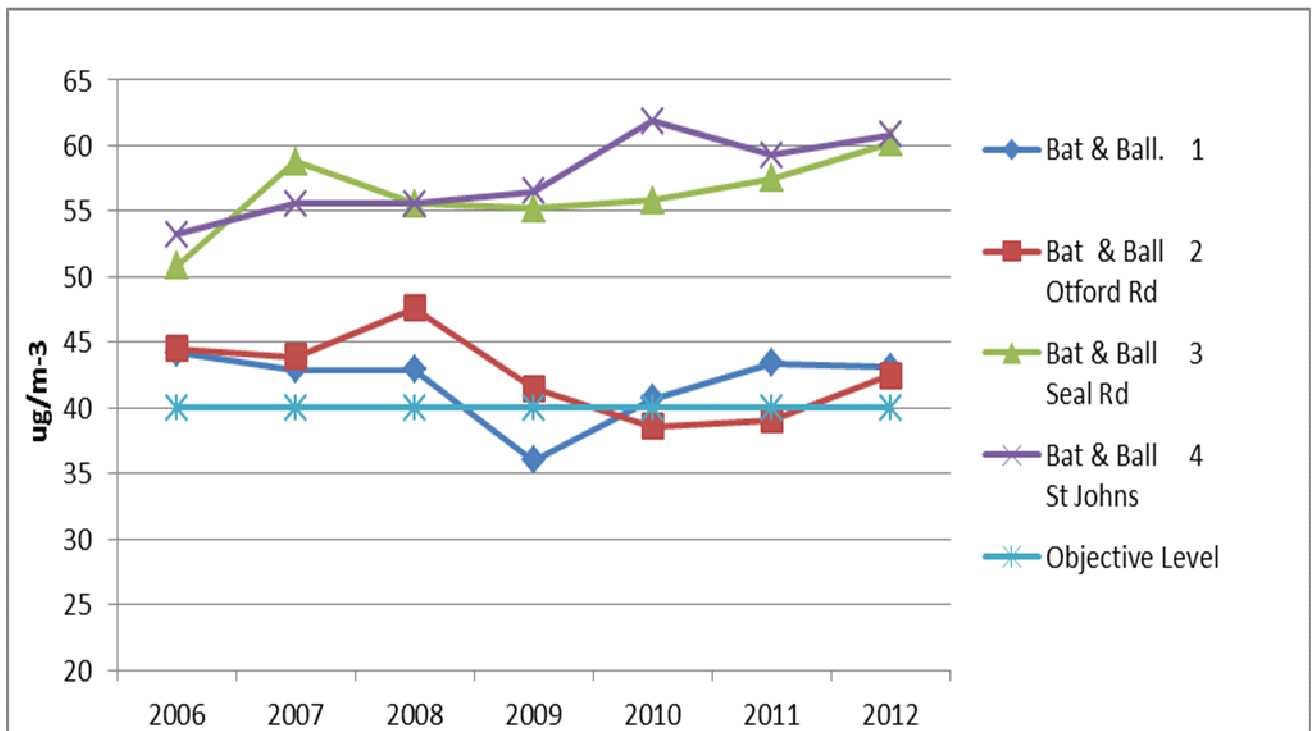
Sevenoaks



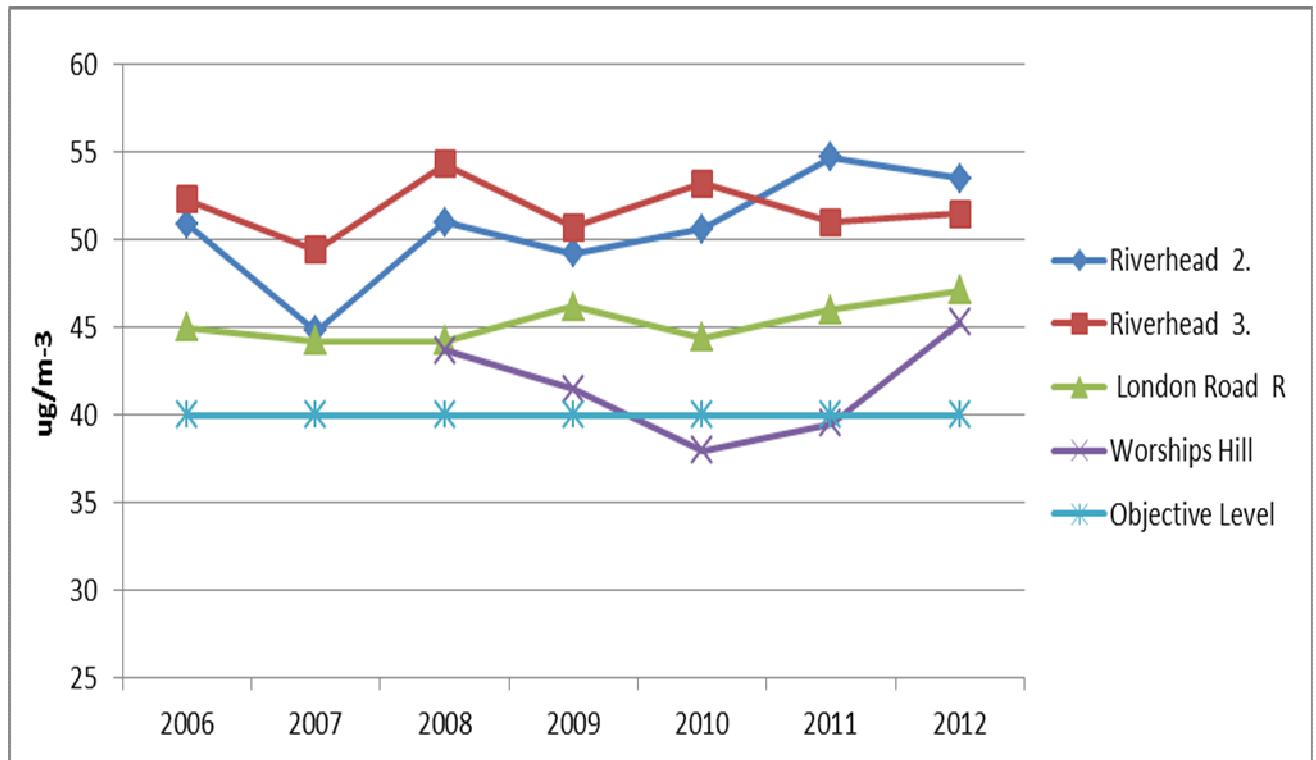
Swanley



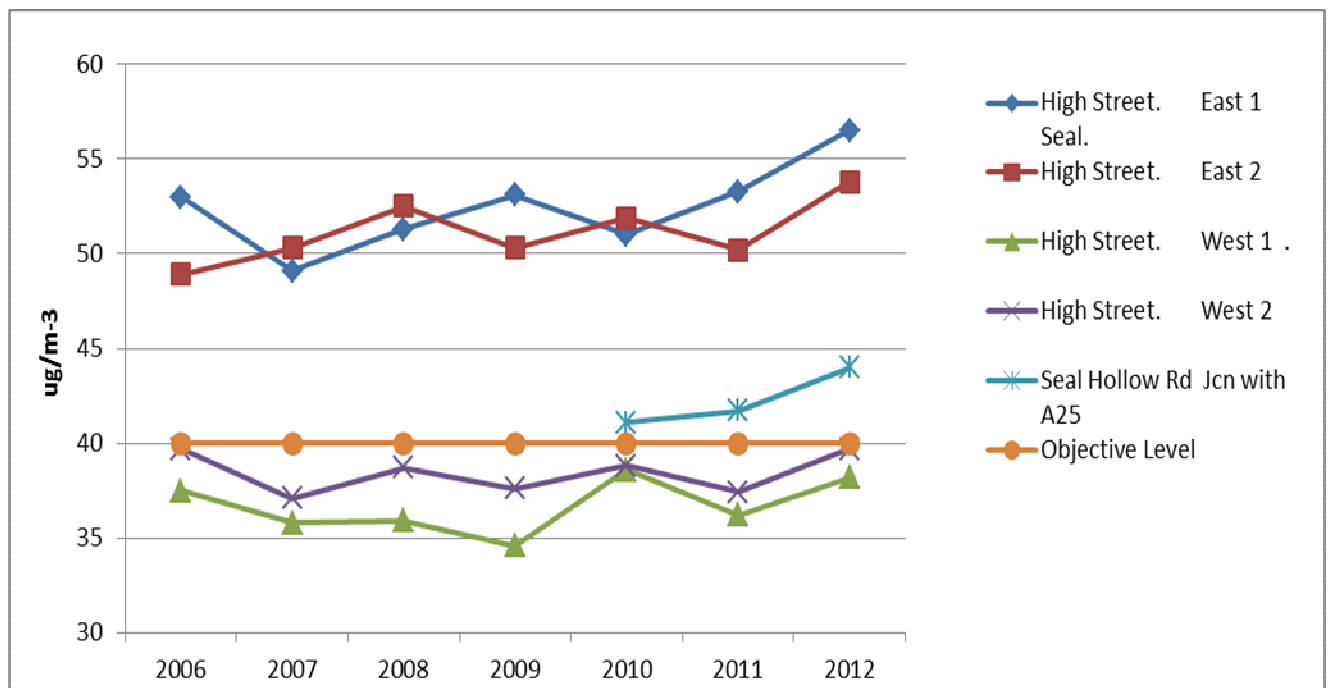
Bat and Ball



Riverhead



Seal



Westerham

