



2013 Air Quality Progress Report Waverley Borough Council

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

Date: April 2013

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Report Reference number	AQAP/WBC/PROG/2013
Date	April 2013

Executive Summary

This report presents the findings of Waverley Borough Council's Annual Progress Report of Air Quality within the Borough. The Progress Report evaluates new and changed sources to identify those that may require consideration in further reports.

Previous air quality assessments have concluded that concentrations of carbon monoxide, benzene, 1-3-butadiene, lead, sulphur dioxide (SO₂) and particulates (PM₁₀) are compliant with UK air quality objectives. However, concentrations of nitrogen dioxide (NO₂) have been found to exceed the annual mean objective at various locations within the Borough. A Detailed Assessment was carried out in 2004 and three Air Quality Management Areas (AQMAs) for annual mean nitrogen dioxide objectives were declared. This declaration committed Waverley to taking action towards achieving air quality objectives in AQMAs. In line with statutory requirements Waverley Borough Council put in place its Air Quality Action Plan in 2008. The Action Plan is an evolving document and since its publication in July 2008 changes have occurred. This includes the Air Quality behaviour-changing campaign that was carried out throughout 2010 and other improving actions associated with inter-agency Air Quality Workshops and Steering Groups. Further to this work, the Farnham project was undertaken. The main objective of this study was to assess the effectiveness of existing and proposed traffic management options included in the AQAP, to determine which would deliver satisfactory reductions in emissions to produce lower concentrations of nitrogen dioxide and attain the NO₂ Limits Value by 2015. The Farnham project assessed various low emissions schemes to consider the potential reduction in emissions affecting the Farnham AQMA. This resulted in the publication of the Farnham Traffic Management and Low Emission Feasibility Study.

A further Detailed Assessment was carried out in 2010 which led to the installation of two new nitrogen dioxide diffusion tubes, taking the total site network to 43 diffusion tubes across the Borough. The new monitoring sites were installed at streets approaching Farnham Level Crossing, where the assessment has determined that the concentrations of nitrogen dioxide are close to, but not exceeding, the annual mean objectives at locations of relevant exposure in the vicinity of Farnham Level Crossing. Therefore an Air Quality Management Area is not required in this location. However, it should be noted that if measured concentrations increase in the future, the results of the Detailed Assessment should be reconsidered.

The 2012 air monitoring results show that PM₁₀ concentrations in the Borough meet the relevant objectives and have remained fairly constant in the last few years. However, nitrogen dioxide concentrations exceeded the annual mean objective in some but not all locations. Four exceedences were recorded within AQMAs, and two sites outside. These locations were identified on the latest Updating and Screening Assessment (USA) which was carried out in 2012, and subsequently they have been closely monitored. These results show that the nitrogen dioxide concentrations have reduced overall throughout 2012, but

monitoring will continue and any further exceedences will therefore lead to Detailed Assessments being carried out.

Future 'Air Quality Progress Reports' will be published annually except during the years when Defra require a more detailed 'Updating and Screening Assessment' report to be undertaken.

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1 Introduction

1.1 Description of Local Authority Area

Waverley Borough is situated in the south-western corner of Surrey. The Borough is largely rural with four main population centres: Farnham, Godalming, Haselmere and Cranleigh. Road traffic has been recognised as the major source of pollution in the Borough.

Two main trunk routes cross Waverley: the A31 London to Winchester and the A3 London to Portsmouth dual carriageways. The latter includes the site of the new Hindhead tunnel which opened in August 2011 in order to relieve a serious bottleneck on the A3 route in the village of Hindhead.

Three Air Quality Management Areas (AQMA) have been declared in the Borough of Waverley where exceedences of the annual mean Air Quality Strategy (AQS) objective for nitrogen dioxide (NO₂) were identified, mainly due to traffic congestion.

1.2 Purpose of Progress Report

Progress Reports are required in the intervening years between the three-yearly Updating and Screening Assessment (USA) reports, the last USA report was published in 2012. The purpose of the Progress Report is to maintain continuity in the Local Air Quality Management process.

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

1.3 Air Quality Objectives

The air quality objectives applicable to Local Air Quality Management (LAQM) in England are set out in the Air Quality (England) Regulations 2000 (SI 928), and the Air Quality (England) (Amendment) Regulations 2002 (SI 3043). They are shown in Table 1.1. This table shows the objectives in units of microgrammes per cubic metre $\mu\text{g}/\text{m}^3$ (for carbon monoxide the units used are milligrammes per cubic metre, mg/m^3). Table 1.1 includes the number of permitted exceedences in any given year (where applicable).

Table 1.1 Air Quality Objectives included in Regulations for the purpose of Local Air Quality Management in England.

Pollutant	Concentration		Measured as	Date to be achieved by
Benzene	16.25 $\mu\text{g}/\text{m}^3$		Running annual mean	31.12.2003
	5.00 $\mu\text{g}/\text{m}^3$		Running annual mean	31.12.2010
1,3-Butadiene	2.25 $\mu\text{g}/\text{m}^3$		Running annual mean	31.12.2003
Carbon monoxide	10.0 mg/m^3		Running 8-hour mean	31.12.2003
Lead	0.5 $\mu\text{g}/\text{m}^3$		Annual mean	31.12.2004
	0.25 $\mu\text{g}/\text{m}^3$		Annual mean	31.12.2008
Nitrogen dioxide	200 $\mu\text{g}/\text{m}^3$ not to be exceeded more than 18 times a year		1-hour mean	31.12.2005
	40 $\mu\text{g}/\text{m}^3$		Annual mean	31.12.2005
Particles (PM ₁₀) (gravimetric)	50 $\mu\text{g}/\text{m}^3$, not to be exceeded more than 35 times a year		24-hour mean	31.12.2004
	40 $\mu\text{g}/\text{m}^3$		Annual mean	31.12.2004
Sulphur dioxide	350 $\mu\text{g}/\text{m}^3$, not to be exceeded more than 24 times a year		1-hour mean	31.12.2004
	125 $\mu\text{g}/\text{m}^3$, not to be exceeded more than 3 times a year		24-hour mean	31.12.2004
	266 $\mu\text{g}/\text{m}^3$, not to be exceeded more than 35 times a year		15-minute mean	31.12.2005

1.4 Summary of Previous Review and Assessments

In addition to the standard USA report 2012 and Progress Reports, Waverley Borough Council has to date completed a Detailed Assessment (2004) and an associated Further Assessment (2007). An additional Detailed Assessment was carried out in 2010, at Station Hill, in close proximity to Farnham level crossing.

The first round of review and assessment concluded that no exceedences of statutory air quality objectives were occurring in the Borough and in consequence, no Air Quality Management Areas (AQMAs) were required. However, the 2003 USA report determined that exceedences of the objectives were possible for nitrogen dioxide and therefore Detailed Assessment of nitrogen dioxide levels were required for three locations: the centres of Farnham and Godalming and in Hindhead at the junction of the A3 and the A287.

The subsequent Detailed Assessment based on computer dispersion modelling and local monitoring, confirmed that exceedences were likely at these locations so the Council declared three AQMAs in 2005, (Figures 1.1 to 1.3 below). These are located in central Farnham, central Godalming, and in Hindhead.

A Further Assessment was undertaken in 2007, which confirmed the findings of the Detailed Assessment and recommended: that the Farnham AQMA be extended and that the other two AQMAs be left unaltered. An Air Quality Action Plan was subsequently developed in relation to the three AQMAs, to meet the requirements under Part IV of the Environment Act 1995, to work towards air quality objectives. However, the opening of the Hindhead Relief Road (Hindhead Tunnel) in August 2011 was expected to improve the air quality problem in that AQMA.

The Council published a detailed USA report of local air quality in 2009, as a result of changes in TG (09) guidance, regarding the identification of narrow congested streets. The USA identified one potential new source and a Detailed Assessment was undertaken. The DA was carried out on the streets approaching and surrounding Farnham railway level crossing. Results determined that the concentrations of nitrogen dioxide are close to, but not exceeding, the annual mean objective at locations of relevant exposure in the vicinity. Therefore an Air Quality Management Area is not required in this location. However, if concentrations measured at this location increase in the future, the result of the Detailed Assessment must be reconsidered.

A further Updating and Screening Assessment was carried out in 2012. This identified a number of monitoring sites outside of existing AQMAs that measured exceedences of the annual mean nitrogen dioxide objective. Further assessments were undertaken in the identified areas and these sites have since recorded lower measured nitrogen dioxide concentrations, and now fall below the annual mean objectives.

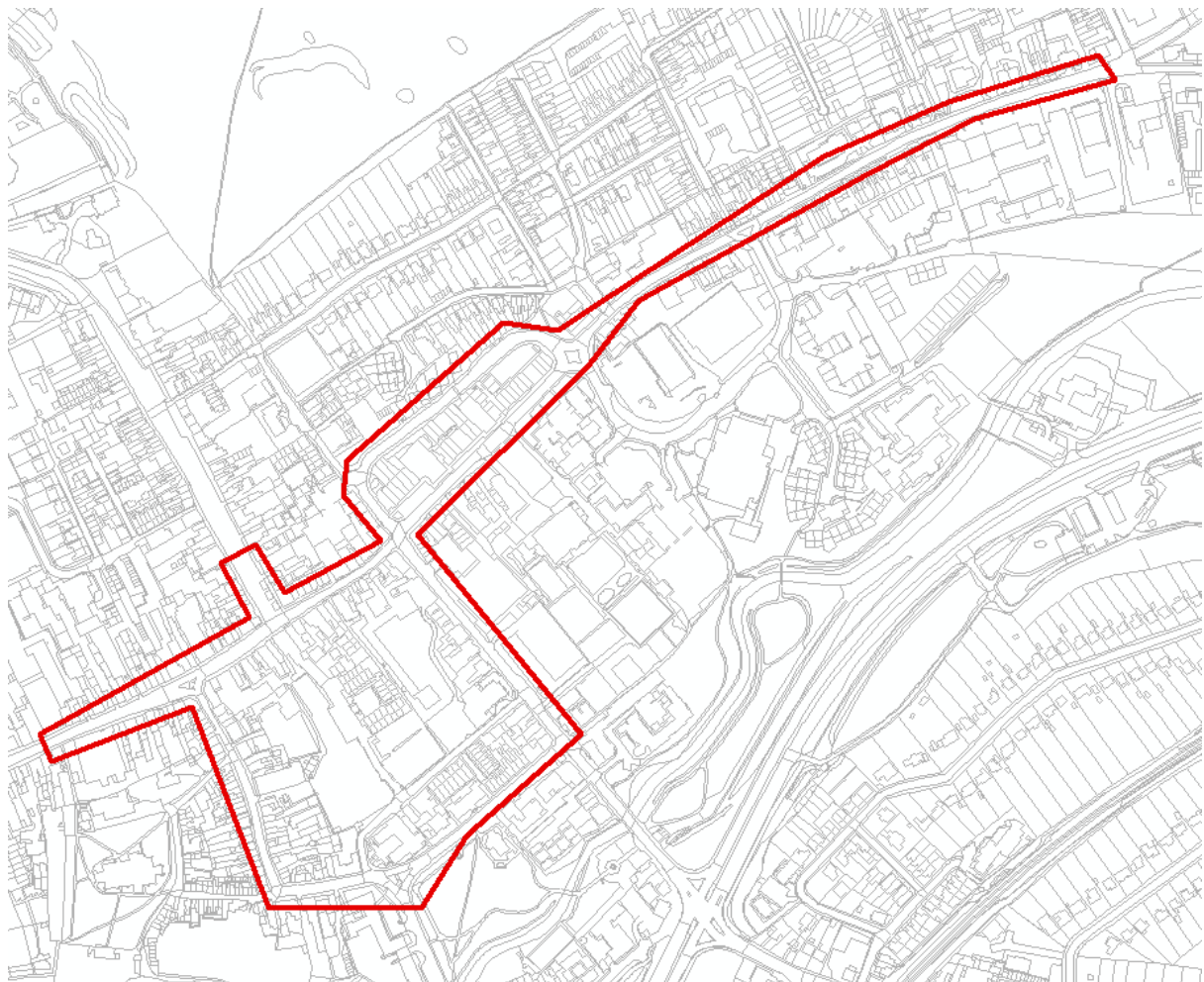


Figure 1.1 Farnham AQMA Boundary © Crown Copyright and database right 2012.
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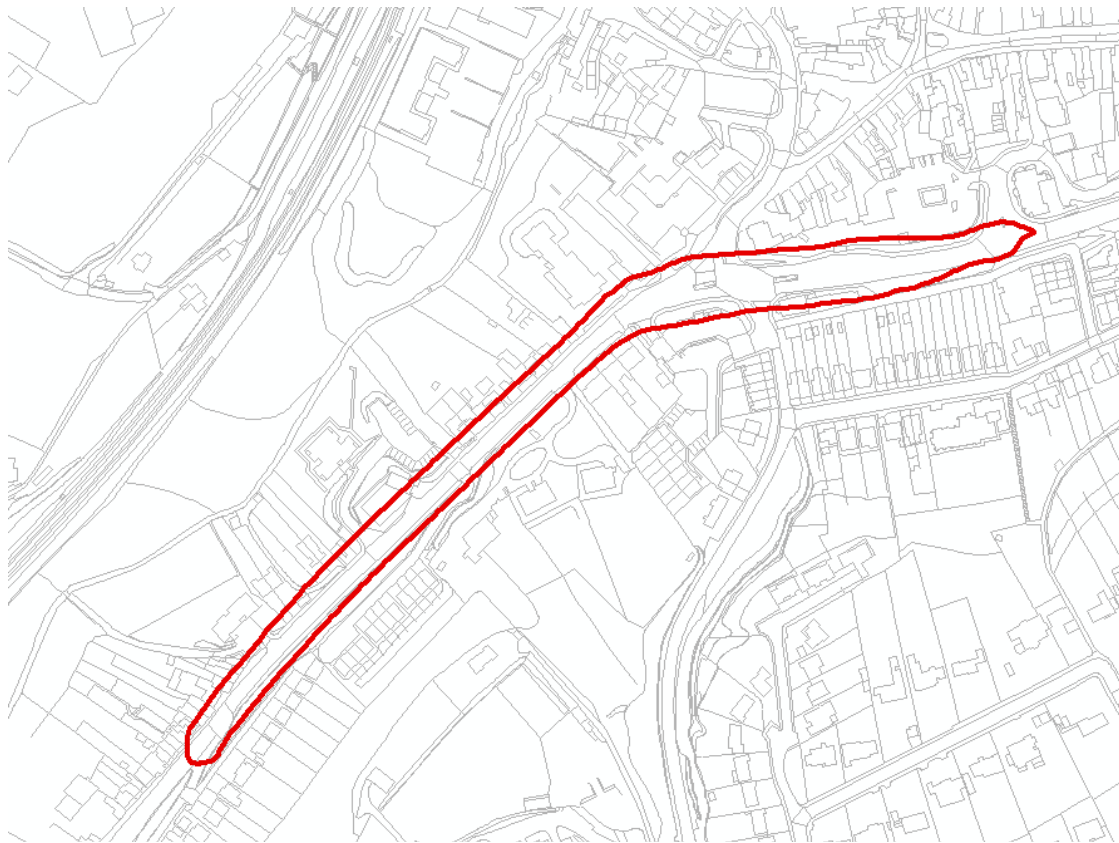


Figure 1.2 Godalming AQMA Boundary © Crown Copyright and database right 2012.
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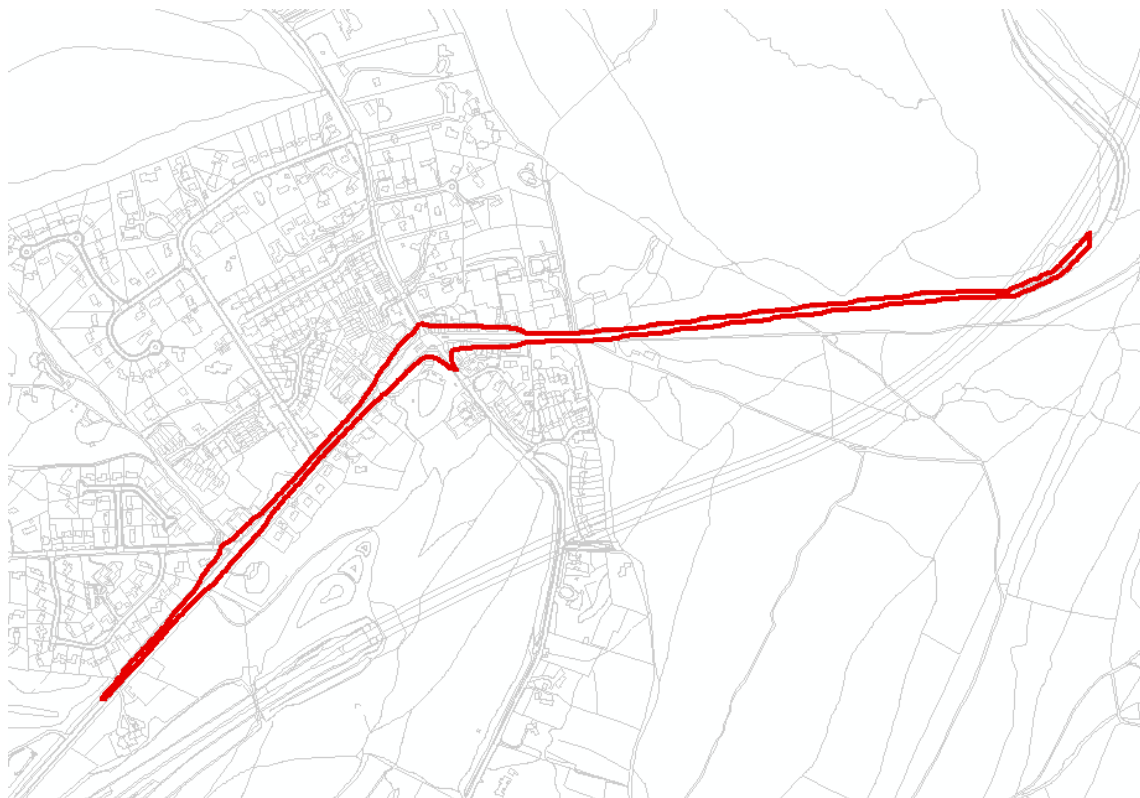


Figure 1.3 Hindhead AQMA Boundary © Crown Copyright and database right 2012.
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2 New Monitoring Data

2.1 Summary of Monitoring Undertaken

During 2012, monitoring was undertaken at 43 locations across the borough using diffusion tubes. Three sites were also co-location studies where monitoring was carried out using automatic analysers with triplicate co-located diffusion tubes for the calculation of local bias adjustment factors. At each of these monitoring locations, nitrogen dioxide concentrations are measured, and at Farnham PM10 is also monitored.

2.1.1 Automatic Monitoring Sites

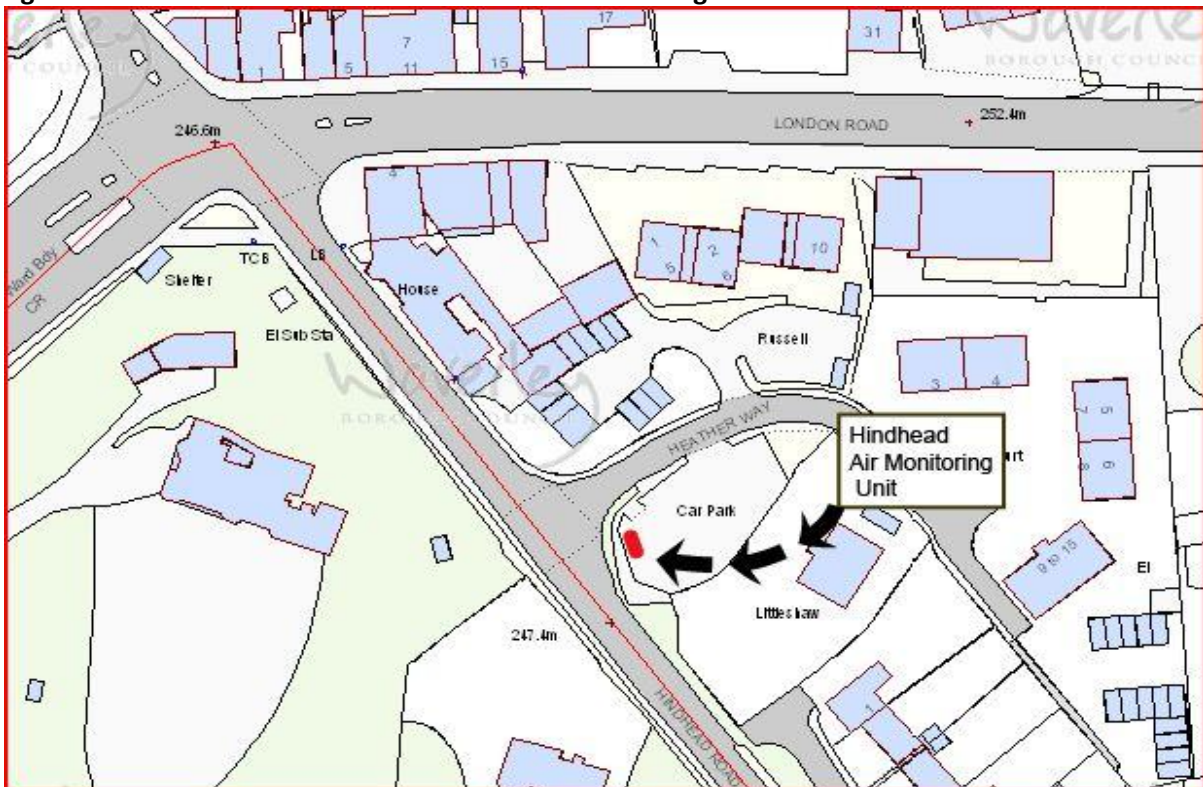
The three automatic monitors are located at roadside locations within, or adjacent to, each of the three AQMA's. All sites measure nitrogen dioxide, whilst the Farnham site also monitors PM10. The location of each analyser is shown in Figures 2.1 to 2.3. No additional automatic monitoring stations have been established since the USA report which was undertaken last year (2012). The equipment is serviced and calibrated on a monthly basis by Enviro Technology. Data from the three sites is then ratified by Air Quality Consultants.

The Farnham automatic monitoring site is located within the AQMA, at the junction of East Street (A325) and Bear Lane. Nitrogen dioxide concentrations are monitored using an API M200E chemiluminescence NOx analyser, whilst PM10 concentrations are monitored using a Met One Beta-Attenuated (BAM) dust monitor.

The Godalming automatic monitoring site is located within the AQMA, adjacent to Ockford Road in Godalming town centre. It continuously monitors nitrogen dioxide concentrations using an API M200E chemiluminescence NOx analyser.

The Hindhead automatic monitoring site is located at the edge of the Hindhead AQMA, close to the junction of the A3 Portsmouth Road and the A287 Hindhead Road. Nitrogen dioxide concentrations are monitored continuously using an API M200E chemiluminescence NOx analyser.

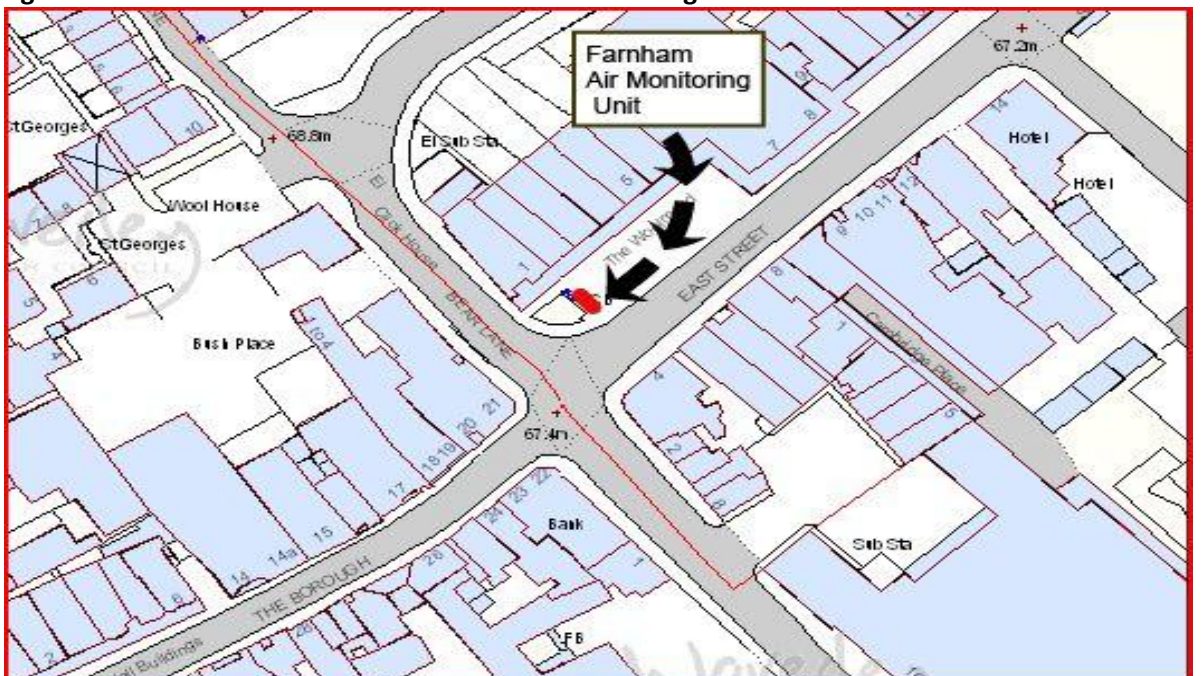
Figure 2.1 Location of the Hindhead automatic monitoring station.



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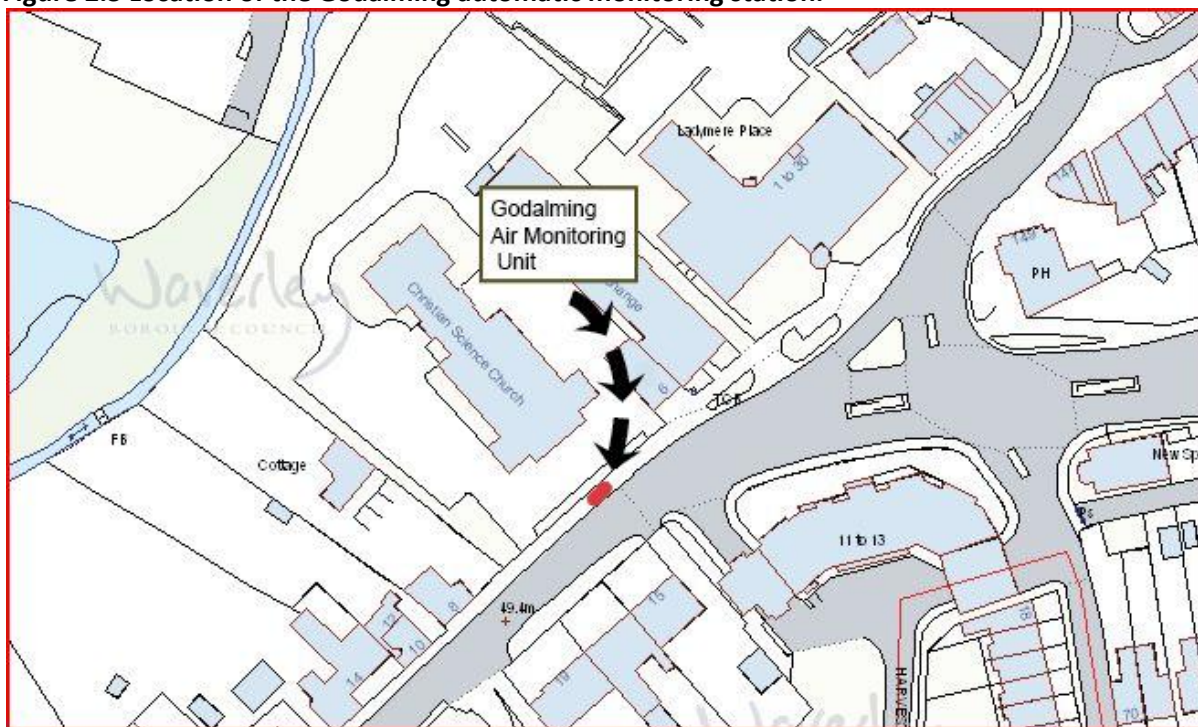
Hindhead air monitoring unit is located at the edge of the Hindhead AQMA, at the junction of the A3 Portsmouth Road and the A287 Haslemere to Farnham Road in Hindhead in south west Waverley.

Figure 2.2 Location of the Farnham automatic monitoring station.



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Farnham air monitoring unit is located within the AQMA, on the A325 in Farnham town centre at the junction of East Street and Bear Lane. The EnviroTechnology API analyser continuously monitors concentration of nitrogen dioxide (NO₂) and the Beta-Attenuated Particle Monitor monitors PM₁₀ levels.

Figure 2.3 Location of the Godalming automatic monitoring station.

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Godalming air monitoring unit is located within the AQMA, along the Ockford Road in Godalming town centre. It continuously monitors concentration of nitrogen dioxide (NO₂) using EnviroTechnology API analyser.

Table 2.1 Details of Automatic Monitoring Sites

Site	Hindhead	Farnham	Godalming
Site type	Roadside	Roadside	Roadside
OS Grid Ref	X488819 Y135639	X484087 Y146972	X496693 Y143695
Pollutants monitored	NO ₂	NO ₂ PM ₁₀	NO ₂
Monitoring technique	Chemiluminescence	Chemiluminescence Beta attenuation	Chemiluminescence
Within AQMA?	N	Y	Y
Relevant Exposure? (distance to relevant exposure)	Y (20m)	Y (20m)	Y (25m)
Distance to nearest road kerb	7m	5m	3m
Represents worst-case exposure?	N	Y	Y

2.1.2 Non-Automatic Monitoring Sites

Nitrogen dioxide is monitored at 45 sites across the Waverley Borough Council area; 18 sites in Farnham; 3 sites in Hindhead; 11 sites in Godalming; 5 sites in Haslemere; and a further 8 sites in locations across Cranleigh, Bramley, Milford and Dunsfold (see Figure 2.4). Triplicate diffusion tubes are co-located with each of the automatic analysers.

The diffusion tubes are prepared and analysed by Lambeth Scientific Services using the 50% TEA in acetone method. Tubes are changed on a monthly basis.

No new diffusion tubes have been placed since the last additions in 2011, following on from recommendations of the Farnham level crossing Detailed Assessment.

Figure 2.4 Map of Non-Automatic Monitoring Sites.

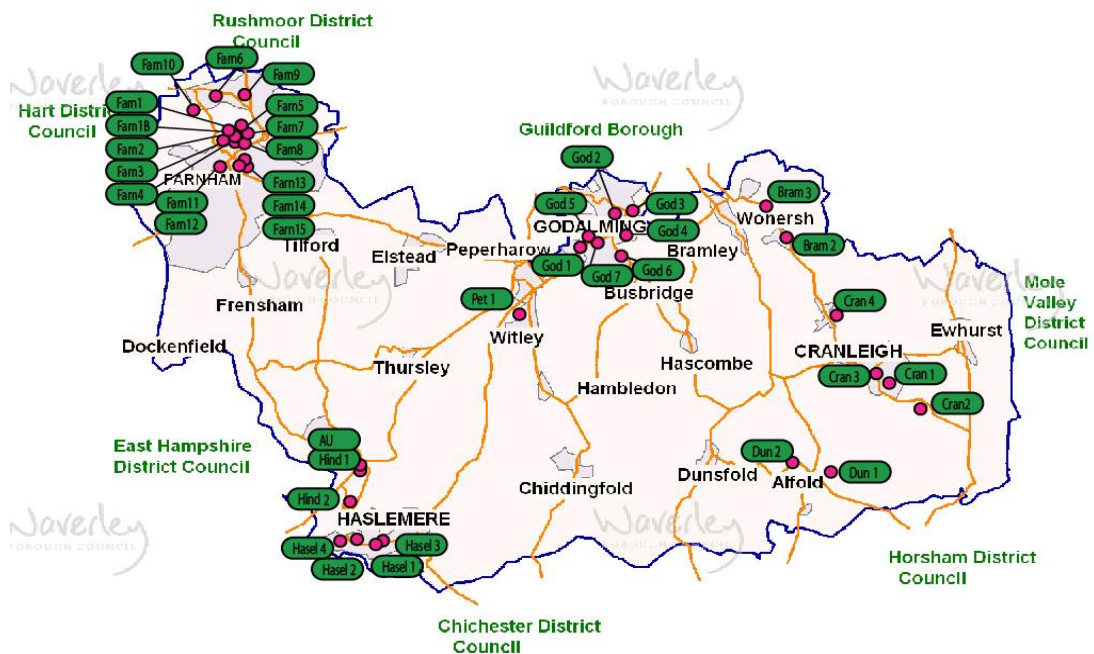


Table 2.2 Details of Non-Automatic Monitoring Sites

Site Name	Site Type	OS Grid Ref		Pollutants Monitored	In AQMA?	Relevant Exposure? (Y/N with distance (m) to relevant exposure)	Distance to kerb of nearest road (N/A if not applicable)	Worst-case Location?
Farn 1	Roadside	X484020	Y146910	NO ₂	Y	Next to café with pavement seating	1.8m	Y
Farn 1B	Kerbside	X484064	Y146928	NO ₂	Y	N	0.9m	
Farn 2	Roadside	X483907	Y146831	NO ₂	Y	Y (15m)	1.5m	
Farn 3	Urban Background	X483654	Y146600	NO ₂	N	Y (10m)	N/A	
Farn 4	Urban Background	X483407	Y146794	NO ₂	N	N	N/A	
Farn 5	Roadside	X484423	Y147233	NO ₂	Y	Y (10m)	2.1m	
Farn 6	Kerbside	X483915	Y149039	NO ₂	N	Y (3m)	1.0m	
Farn 7	Roadside	X484233	Y146782	NO ₂	Y	N	5.0m	
Farn 8 *	Roadside	X484087	Y146972	NO ₂	Y	15m from pavement café	3.0m	
Farn 9	Roadside	X484761	Y149431	NO ₂	N	Y (5m)	2.0m	
Farn 10	Roadside	X483152	Y148703	NO ₂	N	Y (20m)	1.7m	
Farn 11	Roadside	X482717	Y145183	NO ₂	N	Y (8m)	2.0m	
Farn 12	Roadside	X482766	Y145632	NO ₂	N	Y (2m)	2.0m	
Farn 13	Roadside	X484416	Y146619	NO ₂	Y	Y (2m)	1.7m	Y
Farn 14	Roadside	X484446	Y146609	NO ₂	N	Y (10m)	1.0m	
Farn 14A	Roadside	X484446	Y146609	NO ₂	N	Y (10m)	1.0m	
Farn 15	Roadside	X484561	Y146486	NO ₂	N	Y (10m)	2.0m	
Farn 16	Roadside	X484616	Y146230	NO ₂	Y	Y (1.1m)	1.9m	Y
Farn 17	Roadside	X484645	Y146570	NO ₂	N	Y (1.5m)	2.0m	
God 1	Roadside	X496497	Y143508	NO ₂	Y	Y (0m)	7.0m	
God 2	Roadside	X497294	Y143981	NO ₂	N	N	2.0m	
God 3	Roadside	X497376	Y144153	NO ₂	N	Y (10m)	2.0m	
God 4	Roadside	X497320	Y143864	NO ₂	Y	Y (10m)	1.9m	Y

God 5	Roadside	X496740	Y143721	NO ₂	Y	Y (30m)	1.5m	
God 6	Roadside	X497387	Y143437	NO ₂	N	Y (6m)	2.0m	
Pet 1	Roadside	X494483	Y141316	NO ₂	N	N	3.5m	
Hind 1	Kerbside	X488774	Y135705	NO ₂	Y	Y (20m)	0.8m	Y
Hind 2	Urban Background	X488095	Y134369	NO ₂	N	N	N/A	
Hasl 1	Roadside	X490486	Y132819	NO ₂	N	N	2.2m	
Hasl 2	Urban Background	X485928	Y133005	NO ₂	N	N	N/A	
Hasl 3	Roadside	X490636	Y133160	NO ₂	N	Y (10m)	1.5m	N
Hasl 4	Roadside	X489090	Y132842	NO ₂	N	Y (1.6m)	1.5m	
AU1/2/3 *	Roadside	X488819	Y135639	NO ₂	N	Y (20m)	3.2m	
Cran 1	Roadside	X505808	Y139078	NO ₂	N	N	1.3m	
Cran 2	Urban Background	X506883	Y138514	NO ₂	N	Y	N/A	
Cran 3	Roadside	X505411	Y139242	NO ₂	N	N	4.0m	
Cran 4	Roadside	X504760	Y140683	NO ₂	N	Y (5m)	1.7m	Y
Bram 2	Roadside	X501498	Y144049	NO ₂	N	Y (13m)	3.7m	Y
Bram 3	Roadside	X500908	Y144780	NO ₂	N	N	3.6m	
Dun 1	Roadside	X504051	Y135373	NO ₂	N	N	5.0m	Y
Dun 2	Roadside	X502765	Y13731*9	NO ₂	N	Y (30m)	N/A	
* Co-located with automatic monitor								

2.2 Comparison of Monitoring Results with Air Quality Objectives

This section summarises air quality monitoring data measured within the Waverley area

2.2.1 Nitrogen Dioxide

Automatic Monitoring Data

A summary of the air quality monitoring data from Waverley automatic monitoring sites is shown in Tables 2.3a & 2.3b.

The continuous monitoring at Farnham and Godalming had good data capture at 98.6% and 99.3% respectively. Measured concentrations at these sites indicate a slight increase compared to 2011 (table 2.3a), but stayed below the corresponding hourly mean objective (table 2.3b). Both sites are located within the AQMA for the respective areas.

At the Hindhead station data capture for nitrogen dioxide was only 86.6% owing to equipment failures and communication problems. The measured concentration at this site shows a decrease compared to 2011, also staying below the corresponding hourly mean objective. This site is not located within the AQMA, as defined by the predicted area of exceedence of the annual mean objective, and is set some way back from the junction with A3.

Table 2.3a: Results of Automatic Monitoring for Nitrogen Dioxide – Comparison with Annual Mean Objective

Site ID	Location	Within AQMA ?	Data Capture for full calendar year 2012 %	Annual mean concentrations 40 ($\mu\text{g}/\text{m}^3$)		
				2010	2011	2012 Objective (annual mean): 40 $\mu\text{g}/\text{m}^3$
					Adj. mean	
Godalming	Ockford Road	Y	99.3	26.9	26.1	27.8
Hindhead	Heather Way	N	86.6	39.9	38.9	36.8a
Farnham	Woolmead	Y	98.6	40.8	35.1	36.1

a Where period of valid data is less than 90% of a full year, the site annualisation calculation has been carried out according to the methodology outlined in LAQM TG(09).

Exceedences of the relevant air quality objective are indicated in **bold**

Table 2.3b: Results of Automatic Monitoring for Nitrogen Dioxide – Comparison with 1-hour Mean Objective

Site ID	Location	Within AQMA?	Data Capture for full calendar year 2012 %	Number of Exceedences of hourly mean (200 µg/m ³) ^a		
				2010	2011	2012
Godalming	Ockford Road	Y	99.3	0(103.7)	2(103.5)	0
Hindhead	Heather Way	N	86.6	1(116.7)	0(113.3)	0 (112.2)
Farnham	Woolmead	Y	98.6	0(115.2)	0(115.2)	0

^a Where data capture was less than 90%, the 99.8th percentile of hourly means are presented in brackets.

Diffusion Tube Monitoring Data

In 2012, nitrogen dioxide diffusion monitoring was undertaken at 45 locations across the Borough. This included the three co-location sites with automatic monitors at Farnham, Godalming and Hindhead, where diffusion tubes are exposed in triplicate.

Six sites were found to exceed the annual mean nitrogen dioxide objective when using the national bias adjustment factor to correct the diffusion tube measurements. Four exceedences were within AQMAs, with two outside (Farn14 and God7) (table 2.4). Overall, concentrations have reduced in 2012 compared to 2011, with the exception of Farn5 and God4 where in both situations the data capture was 75% or lower. Where the data was below 75%, these data have been annualised following guidance in LAQM. TG(09).

The highest annual mean concentration was recorded at Farnham, Farn1b (50.9 µg/m³). Other sites where bias-adjusted concentrations exceeded the annual mean nitrogen dioxide objective during 2012 were; Farn14 (47.4 µg/m³); Farn1 (43.8 µg/m³); Farn5 (41.4 µg/m³); God4 (45.5 µg/m³) and God7 (45.1 µg/m³). Farn4 is not considered owing to data capture less than 8%.

Sites Farn13 and Farn14 are located at streets approaching and surrounding Farnham level crossing, which has been subject to a Detailed Assessment study. Both sites have decreased concentrations against the annual mean objectives, in line with the overall area decrease in relation to the lower national bias adjustment figures. This has led to Farn13 dropping below the 40 µg/m³ objective limit. Farn14 is still above this limit at 47.4µg/m³ but it is also located closer to the level crossing, which is the cause of the queuing traffic, contributing to the higher nitrogen dioxide levels. However, these indicated exceedences occur at the ground level where there is no relevant exposure. Although there are residential flats at the 1st floor above the Waverley Arms Public House and at 1st and 2nd floor above the shops, predictions from the air dispersion modelling study indicated that nitrogen dioxide concentrations decline with increasing height, such that the annual mean concentration (although close to the objective) is not exceeding at 1st floor level and above and therefore the AQMA is not required for this area. Where concentrations are close to the objective,

monitoring should be carried on at these locations. If the measured concentrations increase in the future, then the results of the Detailed Assessment should be reconsidered.

The USA Report 2012 recommended a Detailed Assessment should be carried out for High Street, Haslemere after two sites were found to exceed the annual mean nitrogen dioxide objective. Therefore, an additional diffusion tube was located on High Street at a location of relevant exposure, in order to gain further information on the concentrations of nitrogen dioxide in this vicinity. Monitoring of this tube (Has15) was only undertaken for 6 months following installation in the second half of 2012 and the current findings are included in this report (table 2.4). Current concentrations of nitrogen dioxide in Haslemere are below the annual mean objectives, however, if concentrations measured at this location increase in the future, the Detailed Assessment will be reconsidered.

Table 2.4: Results of Nitrogen Dioxide Diffusion Tubes

Site ID	Location	Within AQMA?	% Data Capture for full calendar year 2012	Annual mean concentrations ($\mu\text{g}/\text{m}^3$) Objective (annual mean): $40\mu\text{g}/\text{m}^3$		
				2010	2011	2012
Farnham Sites						
Farn 1	Café Rouge Farnham	Y	100	57.5	52.6	43.8
Farn 1B	Opposite FARN1	Y	83	67.9	52.3	50.9
Farn 2	Roundabout in West St and Downing St	Y	92	54.9	48.0	39.5
Farn 3	Bishopsmead off West St	N	100	21.2	16.3	16.5
Farn 4	Potters Gate School,	N	8	21.5	20.1	12.7*
Farn 5	East St , St James House	Y	50	42.3	38.6	41.4*
Farn 6	no 120, A3016, Upper Hale	N	100	41.9	35.9	34.2
Farn 7	South St, Farnham	Y	100	39.5	34.6	30.9
Farn 8	Co-location study Woolmead	Y	100	40.3	35.5	33.6
Farn 9	Post near 95 Farnborough Road, close to junction with Alma Road	N	100	41.9	39.0	38.1
Farn 10	Old Park Close Jn, A287, Folly Hill	N	100	31.5	24.8	22.3
Farn11	The Street junction	N	92	42.4	32.6	26.3
Farn 12	Bottom of A325 Wrecclesham Road	N	42	45.0	40.9	17.1*
Farn 13	Tasty House , Station Hill no.1, Farnham,	N	92	41.4	41.6	34.5
Farn 14	Elmsleigh House Dental Clinic, Station Hill	N	100	48.2	54.6	47.4
Farn16	2A - 2B Waverley Lane, Farnham	N	100	36.9	31.0	29.4
Farn 18	Station Hill Store, Farnham	N	92	n/a	29.9	34.1
Farn 19	Waverley Arms PH, Farnham	N	100	n/a	30.4	24.8

Godalming Sites						
God 1	70 Flambards Way	Y	83	37.1	33.2	33.7*
God2	Bridge St, Godalming	N	83	29.1	26.0	22.6*
God3	Bridge Road outside Children's nursery	N	75	39.4	35.4	29.2*
God4	Police Stn, Flambards Way	Y	75	53.4	44.2	45.5*
God5	Flambard Way/High St/Ockford Road Jn	Y	100	43.5	41.4	34.7
God6	Brighton Road nr Underhill Close	N	100	33.4	27.2	24.0
God7	St Hilary's School Holloway Hill	N	83	32.6	49.2	45.1*
God 8	Co-location study, Ockford Road	Y	100	n/a	n/a	27.9
God 9	70 Croft Rd, Godalming	N	67	n/a	n/a	28.2**
God 10	Felica Court, Flambards Way, Godalming	Y	42	n/a	n/a	34.6**
God 11	Catteshall Lane, Godalming	N	33	n/a	n/a	27.3**
Pet1	Petworth Rd	N	92	28.6	20.9	24.7
Hindhead Sites						
Hind1	London Rd/Hindhead Rd cross roads	Y	92	52.5	47.1	39.0
Hind 2	Grove School, High Pitfold, Hindhead	N	100	19.2	15.8	16.8
Hasl 1	Town Hall, High St	N	100	35.7	31.4	26.6
Hasl 2	Car Park, Weydown Rd,	N	83	21.3	18.8	14.2*
Hasl 3	High St, Haslemere	N	75	42.4	41.9	37.4*
Hasl 4	90 to 98 Wey Hill	N	100	45.7	36.7	37.4
Hasl 5	Heath Edge Cottage, High St, Haslemere	N	50	n/a	n/a	32.2**
AU 1/2/3*	Heather Way co-location study	N	100	37.5	36.9	30.3
Cranleigh Sites						
Cran 1	Barclays Bank, High Street, Cranleigh	N	100	27.7	22.2	20.4
Cran 2	Avenue Rd, Cranleigh	N	100	22.2	13.7	14.9
Cran4	Nutshell House (opp. shops) Rowly	N	100	27.9	23.3	22.3
Bramley Sites						
Bram 2	No 3, Hirst Hill Cottages, Bramley	N	100	31.3	25.1	25.3
Bram 3	No 12, Bramley High St	N	100	26.7	21.6	21.6
Dunsfold Sites						
Dun 1	Alfold traffic island	N	100	33.2	25.3	24.9
Dun 2	Stovolds Hill opposite "The Old Farmhouse"	N	100	18.9	18.0	18.0

*Site with less than 90% data capture during 2012 ** Site set up in second half of 2012

Exceedences of 40 µg/m³ annual mean NO₂ objective are highlighted in **bold**.

Bias adjustment factors: 2012 (0.91), 2011 (1.08), 2010 (1.08),

2.2.2 PM10

Measured PM10 concentrations have been well below the annual mean and daily mean objectives consistently over the past few years. During 2012 there were seven daily mean concentrations which exceeded $50\mu\text{g}/\text{m}^3$, compared with 35 allowed.

Overall, concentrations have remained fairly constant, with no clear downward trends evident.

Table 2.5a Results of PM₁₀ Automatic Monitoring: Comparison with Annual Mean Objective

Site ID	Location	Within AQMA?	Data Capture for full calendar year 2012 %	Annual mean concentrations ($40\mu\text{g}/\text{m}^3$) Objective (annual mean): $40\mu\text{g}/\text{m}^3$			
				2009*	2010	2011	2012
Farnham	Woolmead	Y	93.2	27.2	21.0	23.3	21.0

* Less than 90% data capture.

Table 2.5b Results of PM₁₀ Automatic Monitoring: Comparison with 24-hour Mean Objective

Site ID	Location	Within AQMA?	Data Capture 2012 %	Number of Exceedences of daily mean objective ($50\mu\text{g}/\text{m}^3$) Objective (24-hour mean): the $50\mu\text{g}/\text{m}^3$ limit can not be exceeded more than 35 times at year			
				2009	2010	2011	2012
Farnham	Woolmead	Y	93.2	10(46.5)	2	7	7

*Where data capture <90%, 90.4th %ile of hourly mean in brackets.

2.2.3 Sulphur Dioxide

Sulphur Dioxide is not monitored in Waverley Borough Council area.

2.2.4 Benzene

Benzene is not currently monitored within the Waverley Borough Council area. Monitoring ceased at the end of 2008; measured concentrations prior to cessation of monitoring were well below the national objectives.

2.2.5 Other pollutants Measured

No other pollutants are monitored within the Waverley Borough Council area.

2.2.6 Summary of Compliance with AQS objectives

Measured nitrogen dioxide concentrations in 2012 have generally decreased from 2011. Exceedences are recorded at six sites, with two that lie outside of AQMAs, Farn 14 and God 7.

The previous USA report in 2012 advised that three locations would need to proceed to Detailed Assessments. These sites were all outside of AQMAs and had exceeded the annual mean objectives for that year. As there is an element of uncertainty in all measured and modelled data that might cause over- or under-predictions, more detailed monitoring of the area is recommended to gather more confidence in monitoring results. Therefore, monitoring continued at these sites to observe the measured nitrogen dioxide levels, as the data capture had previously been below the measured nitrogen dioxide annual mean concentration. However, after continued monitoring, results from God7 are showing exceedence of the nitrogen dioxide annual mean concentrations. It has also been established that Hasl 4, which was also considered for DA has since recorded lower concentrations and is not currently exceeding the annual mean objectives.

Automatic continuous monitoring of PM10 at Farnham town centre indicates that the UK objectives for PM10 are being complied with in this area. Further, following the previous USA report in 2012, it is evident that exceedences of these objectives are unlikely at any location within the Waverley BC area.

Monitoring will continue at the existing locations, however, owing to the continued measured nitrogen dioxide exceedence at God7 it will now be necessary to proceed to a Detailed Assessment.

3 New Local Developments

3.1 Road Traffic Sources

Road traffic sources were considered in the previous Updating and Screening Assessment.

Waverley confirms that there are no new or newly identified

- narrow congested streets with residential properties close to the kerb
- busy streets where people may spend one hour or more close to traffic
- roads with a high flow of buses and/or HGVs
- junctions
- new roads constructed or proposed since the last Updating and Screening Assessment
- roads with significantly changed traffic flows
- bus or coach stations

which may have an impact on air quality within the Local Authority area.

3.2 Other Transport Sources

The nearest airport to Waverley Borough is Farnborough, which is located 1 km from the Borough and has annual throughput well below 10 million passengers per year.

Waverley confirms that there are no new or newly identified

- airports
- railways locations where diesel or steam trains are regularly stationary for periods of 15 minutes or more, with potential for relevant exposure within 15m
- locations with a large number of movements of diesel locomotives, and potential long-term relevant exposure within 30m
- ports for shipping

which may have an impact on air quality within the Local Authority area.

3.3 Industrial Sources

Industrial sources were considered in the previous Updating and Screening Assessment.

Waverley confirms that there are no:

- new or proposed installations
- existing installations where emissions have increased substantially or new relevant exposure has been introduced
- new or significantly changed installations with no previous air quality assessment
- major fuel storage depots storing petrol
- new or newly identified petrol stations
- new newly identified poultry farms

which may have an impact on air quality within the Local Authority area.

3.4 Commercial and Domestic Sources

Commercial and Domestic Sources were considered in previous Updating and Screening Assessment with regards to Biomass plants. A Detailed Assessment was unnecessary.

Waverley confirms that there are no new or newly identified:

- Areas where the combined impact of several biomass combustion sources may be relevant
- Areas where domestic solid fuel burning may be relevant.

which may have an impact on air quality within the Local Authority area.

3.5 New Developments with Fugitive or Uncontrolled Sources

No complaints have been received regarding fugitive dust problems caused by any identified industrial processes within the Borough since the last USA report in 2012.

Waverley confirms that there are no new or newly identified:

- landfill sites
- quarries
- haulage roads on industrial sites
- waste transfer stations etc.
- other potential sources of fugitive particulate emissions

which may have an impact on air quality within the Local Authority area.

4 Planning Applications

4.1 East Street Development, Farnham: *WA/2008/0278 & WA/2010/1650*

The following development has been granted approval in 2008 for a mixed-use development of 239 residential units, a new multi-screen cinema, shops, cafes and restaurants in Farnham Town Centre. The proposed site is adjacent to the current Farnham AQMA. An Air Quality Impact Assessment has been submitted with the application to assess the effect of development.

However due to modification with respect to the construction phase of the development the Environmental Health Service has been consulted on the air quality implications of provision of temporary construction at the A31, comprising bridge across the River Wey, pedestrian underpass, other supporting infrastructure and re-instatement works including re-siting of the proposed footbridge across the River Wey from that approved under WA/2008/0278. Environmental Health was concerned that initially assessed impacts on air quality did not consider all aspects of road traffic movements associated with construction of temporary access. The potential impacts of dust emissions generated during the construction and reinstallation phase also were questioned.

In March 2011 planning permission for this development was granted, however, to offset the potential impacts of the development on air quality, Environmental Health requested the implementation of strict traffic and dust emission mitigation measures which should be summarised in a Method of Construction Statement subject to a planning condition.

This development has been highlighted in previous progress reports.

4.2 Land Adjacent to Milford Hospital (Upper Tuesley), Tuesley Lane, Godalming: *WA/2012/1592*

Outline application for demolition of existing buildings and redevelopment of land adjoining Milford Hospital, Tuesley Lane to provide 104 new (Class C3) residential units, works to 12 existing residential units (The Crescent), works to Allison House and staff cottages to provide 4 (Class C3) residential units and access and diversion of Public Footpath.

The proposed development lies approximately 3km from Godalming town centre and the Air Quality Management Area (AQMA). It is considered that although this site does not directly affect the AQMA, it is likely to contribute to it. Additionally, this site may also contribute towards a cumulative effect with other developments.

In order to offset the potential impacts of the development on air quality, Environmental Health requested the implementation of strict traffic and dust emission mitigation measures. An Environmental Statement, and Mitigation and Enhancement Measures report have been submitted as part of the application.

This development is currently under consideration.

5 Local Transport Plans and Strategies

The Surrey Transport Plan is the third Local Transport Plan (LTP) for the county. It is a statutory plan (required by the Local Transport Act 2008 and Transport Act 2000), which replaced the second LTP on 1 April 2011. The strategies look forward to 2026 and will be reviewed every three to five years as necessary.

Transport strategies reviewed and developed as part of the Surrey Transport Plan include;

- Air Quality Strategy
- Climate Change Strategy
- Congestion Strategy
- Freight Strategy
- Parking Strategy
- Passenger Transport Strategy
- Travel Planning Strategy

The Air Quality Strategy is one of the core strategies of the Surrey Transport Plan. The proposed aim of the Air Quality Strategy is to improve air quality in AQMAs on the county roads network. This is to enable Surrey's boroughs and districts to revoke these areas as soon as possible to help meet the national air quality objectives in declared AQMAs. The Congestion Strategy is currently open for consultation under the Surrey Future programme until May 2013. Waverley is responding to the consultation in order to ensure that air quality objectives are taken into consideration alongside congestion issues.

All three Waverley AQMAs were declared in relation to excessive nitrogen dioxide concentrations. The main source of this pollution is road traffic. While it is recognised that the AQMAs are the responsibility of the Districts, Surrey County Council has a clear role in working towards achieving air quality objectives in the majority of the AQMAs in Surrey. This has led to the implementation of a steering group, with representatives from Surrey County Council transport planners, Waverley environmental health and other key partners involved in air quality. These meetings facilitate specific transport measures and interventions used to deliver key elements of the strategies, and constitute measures included in Waverley's Air Quality Action Plan, for example;

- Developing Urban Traffic Control and traffic signal strategies.
- Providing infrastructure to support use of hybrid/electric vehicles.
- Advisory signage to inform drivers of air quality issues and solutions.
- Enhanced enforcement of parking and loading restriction.
- Roadside emissions testing.
- School and work place travel plan
- Developing Freight Quality Partnerships
- Promoting eco-driving

6 Climate Change Strategies

This first Climate Change Strategy for Surrey has been developed by the Surrey Climate Change Partnership (SCCP) as a focal point for the County's future action on climate change. The strategy seeks to provide a framework to effectively address climate change across Surrey up to 2020. It will be delivered through the Partnership approach that has been successfully established between the Surrey Climate Change Partnership (SCCP) members.

The strategy shares the vision for Surrey and the principles of improving quality of life for people living and working there by addressing social, economic and environmental well-being. To achieve this, the Strategy establishes a comprehensive framework for consistently addressing climate change across Surrey, with central objectives of:

- Progressive and permanent reductions in carbon dioxide (CO₂) and other climate changing emissions;
- Effective adaptation to the impacts of climate change; and
- Raising awareness of climate change impacts and solutions.

Under each of these objectives the strategy identifies clear policy aims and necessary actions structured as a range of common work streams.

Work streams will be developed under these aims that allow members to reflect their own priorities, whilst working collectively to maximum effect. For each of these work streams the strategy illustrates opportunities to develop good practice through examples of current activity in both Surrey and the UK.

In 2010 the SCCP commissioned Carbon Descent to conduct carbon scenario modelling to identify optimum routes, in terms of energy generation and efficiency measures, to achieve two scenarios; firstly to meet national carbon reduction targets and secondly going further to make Surrey one of the lowest carbon areas. The results of the study recommends that Surrey should make far greater use of its locally available biomass resource for power generation and at commercial scales, along with significant installation of household energy efficiency measures and micro-generation domestic renewable, including heat pumps.

Comments:

Although the potential role of biomass combustion in achieving national carbon reduction targets across Surrey has been recognised, there are concerns that a large increase in biomass combustion, particularly in Air Quality Management Areas and urban areas with great density, could have a detrimental effect of pollution concentration in particular PM and NO₂. These concerns should be considered by SCCP when working towards the Climate Change Strategy targets.

7 Implementation of Action Plans

Waverley's Air Quality Action Plan (AQAP) published in 2008 was followed by the first AQAP Annual Progress Report in April 2009 and Air Quality Progress Report in 2010. The Air Quality Action Plan included the various projects identified as contributing to improvements in air quality. Table 7.1 summarises those projects and is updated to include changes since the previous Air Quality Progress Report.

The Hindhead tunnel and bypass were completed as expected in late 2011. It had been assumed that the re-routing of the traffic flow would help to alleviate the nitrogen dioxide exceedences in the AQMA. Post operative monitoring is ongoing in the area to determine any reductions in the annual emission targets, with the aim of revoking the AQMA. In the year since the tunnel opened there has been a significant reduction in the annual mean nitrogen dioxide level in the Hindhead area. This has led to Hindhead dropping below the $40\mu\text{g}/\text{m}^3$ objective limit. However, as it is still recording $39\mu\text{g}/\text{m}^3$, and this is only slightly below the objective limit, it has been decided to continue monitoring at this location. This will allow for more confidence in the monitoring results and ensure the measured concentrations remain lower than the annual mean objectives. It is therefore proposed that Waverley will discuss with Defra whether revocation of the AQMA at Hindhead would be appropriate in the coming year.

Continuation of joint work between Surrey County Council and Waverley Borough Council has led to new strategies being implemented to tackle traffic related air quality issues. This initially led to the implementation of loading time restrictions in Farnham town centre to alleviate congestion. However, following the Detailed Assessment on air quality in the location of Farnham level crossing, SCC have since discussed the option of re-validating the Urban Traffic Control system (UTC). This would aim to reduce queue lengths and waiting times at the level crossing, therefore, reducing traffic emissions affecting air quality in the area.

The Farnham project which led to the Farnham Traffic Management and Low Emission Feasibility Study, was undertaken as part of the Defra projects programme that Waverley actioned as part of the AQAP. Other projects undertaken through the projects programme that will be updated throughout 2013 include a Health Impact Assessment to assess the health impacts from calculated emissions reductions. A Godalming feasibility study will also be undertaken, this will follow a similar model to the Farnham project, and proposes to understand the impacts of the air quality in Godalming, particularly with relation to the AQMA.

Table 7.1 Action Plan Progress

No.	Measure	Focus	Lead authority	Planning phase	Implementation phase	Indicator	Target annual emission reduction in the AQMA	Progress to date	Progress in last 12 months	Estimated completion date	Comments relating to emission reductions
1	Farnham Review Study option 2b	An holistic set of traffic interventions for Farnham Town Centre e.g. road space reallocation, construction of new cycle routes and cycle facilities, part-time closure of The Borough (road with highest air quality exceedences)	Surrey County Council	East Street Development Working Group is trying to put together a project plan to work backwards from a start date so that triggers and actions can be more easily calculated.	Actual dates for East Street development are not yet known.	Adoption of package 2b as outlined in Farnham Review Study	To be quantified when it appears likely that the recommendations of the Farnham Review study get the go ahead. However package 2b has the potential to remove air quality exceedences from the Farnham AQMA.	The permission for a major development (the East Street development) has been granted with a section 106 agreement. A Defra project to assess the effectiveness of traffic management options in Farnham was carried out in 2012 and this work is ongoing.	In March 2011 planning permission was given for construction of temporary access to the East Street development site. The Farnham project led to the publication of the Farnham Traffic Management and Low Emission Feasibility Study	Not yet known.	When the funds become available the main areas of allocation are: - Park & Stride Study - £15k Park & Stride Implementation Measures – up to £250k Town Centre Traffic Reduction Measures Study - £25k Town Centre Traffic Reduction Measures – up to £75k - s278 improvements to junctions on East Street and restoring two way working on Woolmead. - S278 improvements to public transport waiting areas (e.g. new shelters or real time information).
2	Hindhead Tunnel and bypass	A 1.1 mile tunnel and bypass to relieve the bottleneck at Hindhead	Highways Agency	Work on the scheme began in 2007	Ongoing.	Completion and opening of bypass; closure of existing road.	This measure is expected to remove all AQ exceedences in the AQMA	The project was completed on time in 2011.	Post-operative monitoring has continued since the completion and as expected AQ exceedences have reduced.	Tunnel operation al since summer 2011.	It is proposed to discuss with Defra the revocation of the AQMA in Hindhead in the next year.
3	Review of urban traffic control systems (UTC) on Flambard Way, Godalming	Review of traffic-light management through AQMA with aim of minimising idling traffic and congestion	Surrey County Council		To be completed between 2008 and 2011. Farnham review during 2013	Calculated reduction of NO2 emissions based on calculations of reduced queue length and waiting times	To establish annual emission reduction target detailed information need with regards to waiting times, and reductions in queue length. Information has been	Installation of a new communication system (between the UTC and the computer at Surrey's Network Management	System currently operating in minimised congestion mode. The system has not been re-validated due to	2013	Ricardo-AEAT are assisting Waverley with Defra projects and data ratification.

No.	Measure	Focus	Lead authority	Planning phase	Implementation phase	Indicator	Target annual emission reduction in the AQMA	Progress to date	Progress in last 12 months	Estimated completion date	Comments relating to emission reductions
	and Farnham level crossing					plus ambient monitoring.	requested from Surrey County Council; data are not yet available.	Information Centre in Leatherhead) has been completed.	limited resources. SCC are now planning to re-validate the system during 2013 to minimise idling traffic within the Farnham level crossing area.		
4	Waverley Corporate Travel Plan	A suite of actions aimed at reducing the impact of staff commuting to work and driving to work meetings	Waverley Borough Council	2008 – travel plan measures were tested during a Green Travel Week and subsequent travel survey	March 2009 – launch and continued marketing of Waverley Car Share	An annual travel survey will outline changes in travel behaviour including any increases in car sharing etc	Less than 1% - likely to impact Godalming AQMA as this route is used by a number of staff working in the Waverley office in Godalming	Two low emission staff pool cars now available & in use.	Two low emission staff pool cars now available & in use. 51 members of staff registered.	On going	
5	Work with schools	Community monitoring scheme. The launch of the community monitoring scheme is part of a pilot project involving a partner school in awareness rising of air quality issues.	Waverley Borough Council	December 2008	Launch of community monitoring scheme in Farnham primary school	Continued partnership – monitoring data obtained, publicity in local press	N/a	The partnership has been maintained throughout 2009 and 2010	Throughout 2012 the Air Quality Officer regularly delivered diffusion tubes to the school. The tube has been changed in accordance with national diffusion tube calendar.	On going	
6		Installation and use of air quality software in schools	WBC, SCC, Surrey University	Ongoing	September 2009 to December 2009	Number of schools where software is installed and used	N/a	TBC once more detail is available from Surrey University	No significant progress	Not available.	No information from Surrey University about progress of this project.
7		School Travel plans (STP)	Surrey County Council	2008-11	Ongoing	A number of Schools that completed STP	Not available	Surrey County Council is continuing its programme of	No more schools expected to	Completed	

No.	Measure	Focus	Lead authority	Planning phase	Implementation phase	Indicator	Target annual emission reduction in the AQMA	Progress to date	Progress in last 12 months	Estimated completion date	Comments relating to emission reductions
								developing school travel plans through 2008 -2011	join.		
8	Travel plans for major employers	Requirement and monitoring of travel plans as part of planning consents	Surrey County Council	Ongoing	Ongoing	The number of sites approved or submitted TP	N/a	Travel plans for several sites in Farnham and Godalming have been approved or submitted.	There were no new travel plans from major employers in Waverley implemented in 2012. There was however a travel plan implemented at the residential site adjacent to Farnham Hospital.	On going	
9	Freight Quality Partnership (FQP)		Surrey County Council	2010	ongoing	Not available	N/a	Loading restrictions have been implemented in Farnham	No further progress	On going	No significant reductions
10	Joint agency exercises stopping and checking vehicles	These can be used to check air quality emissions	WBC, SCC, VOSA, SurPOL	Not yet specified	Currently there is no planned joint agency exercise to include air quality emissions testing	Not available	N/a	No significant progress	There were no roadside vehicles emission checks although other checks were carried out.	On hold until further notice	VOSA equipment no longer available for this.
11	A Surrey Air Alert Scheme	A phone / text service to alert people with minor respiratory ailments of imminent air	All Surrey local authorities involved in air quality monitoring	Costing and project plan completed in 2008 by Reigate and Banstead	Not currently being progressed due to lack of agreed funding.			At present a viable air alert service can only be run in Mole Valley, Reigate and	DEFRA grant was obtained in mid 2010 to set up a pilot project in East Surrey. if successful	Not available	

No.	Measure	Focus	Lead authority	Planning phase	Implementation phase	Indicator	Target annual emission reduction in the AQMA	Progress to date	Progress in last 12 months	Estimated completion date	Comments relating to emission reductions
		pollution episodes						Banstead, and Tandridge, as these are the only areas with sufficient monitoring both north and south of &/or within their Boroughs.	project would be rolled out to the rest of Surrey. However further development depends on funds availability		
12	Decriminalised parking enforcement	On-street parking is enforced by Guildford Borough Council (GBC) and car parks are enforced and managed by Waverley.	Waverley Borough Council,	Launched April 2007	On-going	Not available	N/a	SCC Parking Strategy in LTP3 has been reviewed and will be published in April 2011. The next review in WBC is in April/May if funded by Local Committee; for implementation in early 2012.	SCC identified locations where additional on street charges could be introduced across the County. There is now on-street charging in central Farnham.	2011-2012	The majority of locations identified are existing short term parking spaces near shopping areas and other busy locations.
13	Electric car charging point	This facility should encourage people to consider purchasing electric cars.	Waverley Borough Council	Feb 2010	2013	Popularity and use of electric charging point.	Not available yet	Waverley has now been accepted for the installation of Electric charging points to be placed in public car parks in Farnham.	Env Health will continue to encourage installation of Electric charging points across the borough through planning process.	2013/2014	
14	Cycling promotion	Implementation of cycle parking and cycle paths	Surrey County Council	Proposed cycle improvements for Farnham outlined in	Not currently being progressed	N/a	N/A	In 2010 cycling was promoted during Air Quality Awareness	Secure cycle paths and storage facilities	On going	

No.	Measure	Focus	Lead authority	Planning phase	Implementation phase	Indicator	Target annual emission reduction in the AQMA	Progress to date	Progress in last 12 months	Estimated completion date	Comments relating to emission reductions
				Farnham Review study					included as planning conditions on larger proposed development.		
15	Air Quality Information	New Waverley website launched January 2011.	Waverley Borough Council	New information to support the air quality awareness week added in January 2011	Website content regularly reviewed	Number of people visiting website. From Jan 2010 to December 2010 AQ website was visited 801 times.	N/a	Waverley's air quality website www.waverley.gov.uk/airquality contains information about Waverley's air quality work and information on how to get involved in tackling local air quality.	Advice about biomass boilers was added to the air quality and planning pages. AQ pages have been updated with information from AQ Awareness week.	On going	
16	Air Quality and planning policies	Potential supplementary guidance to support air quality.	Waverley Borough Council	No date given	Monitoring of other Local Authorities' Low Emissions Strategies taking place to determine if suitable alternative	Production of supplementary planning guidance	N/A	EH AQ Officer examines planning list for developments that have potential to impact on AQ. Consultation on planning policies continues.	Low-emissions principles are considered in responses to planning and suitable advice given.	On going	Low-emission principles being encouraged through planning consultation process.
17	Variable vehicle messaging sign system (VMS) car park signs		Waverley Borough Council	2010	2011	Try to remove circulation as cars wait for spaces in favoured car parks	n/a	WBC reported low emission parking incentives to Exec C'tte (Sept 2010). Initial assessment is that the scheme is cost prohibitive.	No available funding	On hold	

No.	Measure	Focus	Lead authority	Planning phase	Implementation phase	Indicator	Target annual emission reduction in the AQMA	Progress to date	Progress in last 12 months	Estimated completion date	Comments relating to emission reductions
18	Real time sign at Farnham Level Crossing	To encourage drivers to switch off their engines by advising how long the barriers will remain down	Waverley Borough Council	2010	2011	Lower NO2 concentrations in relevant area	n/a	Signage placed on signposts along queue area advising to switch off engines while waiting.	Interactive display was refused by DfT. SCC are instead looking to optimise the traffic signals on Farnham level crossing, working around barrier down times, to lower the time cars are idling	2013	AEA are assisting Waverley with data modelling to ensure effective results are obtained.
19	Air Quality raising awareness campaign	The publication is important in dealing with air pollution problems. The aim of the air quality campaign is to generate public activism by heightened public awareness of air pollution, and its impact on human health.	Waverley Borough Council	May –July 2010	Early 2011	Number of information leaflets distributed to general public, schools etc	See also above individual measures: 5-8 and 13-18	During 2011, leaflets were distributed across local businesses, garages and libraries. Electronic copies of the leaflet were attached to the monthly newsletter forwarded to parents by 5 local secondary schools.	No further work has been carried out since 2011. It is unclear how effective this campaign was.	On hold	Completed Jan 2011
20	Working with Schools	The aim of the air pollution campaign is to introduce pupils from local schools to air pollution problems and to teach them how small changes in day to day life can	Waverley Borough Council	May - July 2010	Early 2011	Number of schools take part in Air Quality awareness campaign	N/a	Research of local schools willing to participate in campaign completed. 15 local primary schools agreed to use tool kit for teachers developed by Waverley.	The tool kit for teachers completed.		Completed 2011

No.	Measure	Focus	Lead authority	Planning phase	Implementation phase	Indicator	Target annual emission reduction in the AQMA	Progress to date	Progress in last 12 months	Estimated completion date	Comments relating to emission reductions
		benefit the air quality.									
21	Defra projects	Projects that have been undertaken to assess the effectiveness of measures proposed in the action plan.	Waverley	2011	2012	Modelling data and results produced	n/a	Farnham report published – raising awareness of diesel car emissions.	Farnham report as detailed in this Progress Report. Continuation of Health Impact Assessment and Godalming feasibility study.	2013	

8 Conclusions and Proposed Actions

8.1 Conclusions from New Monitoring Data

The results of diffusion tube monitoring within Waverley Borough indicate that the UK objective for annual mean nitrogen dioxide continues to be exceeded in the Godalming and Farnham AQMAs. It is therefore recommended that these be retained.

The results for the Hindhead AQMA show a significant reduction as expected since the opening of the Hindhead tunnel. It is therefore proposed to discuss with Defra the revocation of the AQMA in 2013.

Although exceedence of the UK objective for annual mean nitrogen dioxide was recorded by diffusion tube at two other sites in the Borough outside an AQMA, the sites were not immediately situated at relevant receptors.

The Updating and Screening Assessment 2012 indicated that Detailed Assessments would be required for the following areas;

- Flambard Way, Godalming, in proximity to the junction with Brighton Road/ Wharf Street
- Holloway Hill, Godalming, in proximity to the junction with Flambard Way
- High Street, Haslemere, between Cobden Lane and Church Road where properties lie in close proximity to the road.

Additional diffusion tubes were positioned in the vicinity of the above locations to ensure robust monitoring results. High Street, Haslemere is currently below the annual mean objective and Flambard Way, Godalming is currently in the AQMA area. Therefore these will not proceed to any further assessments but will continue to be monitored. However, site God7 on Holloway Hill, Godalming, has shown an exceedence of the annual mean objective, and will now proceed to a Detailed Assessment.

Ratified 2012 PM10 data indicates generally standard annual and daily mean PM10 concentrations. Although these concentrations are not decreasing, they are well below the air quality objectives.

8.2 Conclusions Relating to New Local Developments

Waverley Borough Council has identified no relevant new developments requiring assessment, since the Updating and Screening Assessment 2012.

8.3 Other Conclusions

The Action Plan has identified the work that Waverley Borough Council and a range of partners are required to carry out to reduce air quality problems identified in AQMAs, and to meet the Government objective for nitrogen dioxide. However, many of the Action Plan measures are beyond the direct control of the Borough Council. Therefore, the success of the Action Plan will depend partly on the input of the local transportation authority – Surrey County Council. This is especially the case where Air Quality Management Areas are declared as a result of traffic related emissions. To assess the effectiveness of the Action Plan, some projects were developed. These are on going and include feasibility studies in Farnham and Godalming, due to the continued exceedence of nitrogen dioxide annual mean objectives. A Health Impact Assessment is also being undertaken to re-assess the health impacts as a direct result of poor air quality through emissions.

The completion of the Hindhead bypass was expected to resolve air quality problems at the Hindhead AQMA. Continuous monitoring has established more confidence in results for this area, and consideration will now be given for the revocation of the existing AQMA.

8.4 Proposed Actions

Currently no changes are proposed for the boundaries of the AQMA in Farnham. However, there is ongoing monitoring around Farnham level crossing which was undertaken following exceedences of nitrogen dioxide linked to the cars idling due to the barrier down times. There are now proposals in place from SCC to alleviate the problem by optimising traffic signals on the level crossing in line with the barrier down times.

Following the opening of the Hindhead bypass, there has been a significant reduction in the nitrogen dioxide annual mean objective. It is now proposed to discuss with Defra the option to revoke the AQMA in Hindhead.

The Godalming AQMA may be subject to an extension to the current area, if the monitoring at the sites located outside of the AQMA indicate exceedence of nitrogen dioxide annual mean. Two of the monitoring sites indicated in the USA 2012 fall slightly outside of the Godalming AQMA and further diffusion tubes were located to establish more relative results. A Detailed Assessment will now be carried out for God7 located on Holloway Hill in Godalming.

Waverley will continue to monitor air quality in line with the Environment Act 1995.

The officers from Waverley will continue to work closely with partners toward achieving the air quality standards. However, implementation of many of the measures will depend strongly on funding availability.

9 References

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Appendix A

Unbiased NO2 data in micrograms per cubic metre, 2012

SITE	Jan	Feb	March	April	May	June	July	Aug	Sep	Oct	Nov	Dec	Average	local bias	National bias	Capture
NO2	04.01.2012 - 02.02.2012	02.02.12 - 29.02.2012	23.02 - 23.03	28.03 - 27.04	27.04 - 31.05	31.05 - 27.06	27.06 - 02.08	02.08 - 29.08	29.08 - 27.09	27.09 - 01.11	01.11 - 29.11	29.11-03.01.13		0.99	0.91	%
Farn1	67.0	57.0	53.0	39.0	43.0	32.0	47.0	45.0	52.0	28.0	60.0	55.0	48.2	47.7	43.8	100.0
Farn1B		59.0	47.0	42.0	52.0	52.0	56.0	63.0	81.0		77.0	30.0	55.9	55.3	50.9	83.3
Farn2	3.0	50.0	54.0		36.0	29.0	14.0	55.0	54.0	61.0	66.0	56.0	43.5	43.0	39.5	91.7
Farn3	21.0	25.0	24.0	17.0	10.0	12.0	12.0	13.0	16.0	22.0	26.0	19.0	18.1	17.9	16.5	100.0
Farn4				14.0									14.0	13.9	12.7	8.3
Farn5		43.0		37.0		32.0				57.0	57.0	47.0	45.5	45.0	41.4	50.0
Farn6	47.0	53.0	34.0	33.0	24.0	32.0	24.0	35.0	42.0	43.0	40.0	44.0	37.6	37.2	34.2	100.0
Farn7	41.0	43.0	30.0	26.0	21.0	22.0	27.0	36.0	41.0	39.0	43.0	38.0	33.9	33.6	30.9	100.0
Farn8	43.0	46.0	34.0	35.0	27.0	27.0	28.0	40.0	43.0	47.0	49.0	39.0	38.2	37.8	34.7	100.0
Farn8B	38.0	34.0	38.0	35.0	26.0	33.0	26.0	41.0	27.0	44.0	46.0	40.0	35.7	35.3	32.5	100.0
Farn 8C	37.0	46.0	39.0	32.0	24.0	25.0	27.0	37.0	38.0	48.0	50.0	39.0	36.8	36.5	33.5	100.0
Farn9	43.0	51.0	44.0	35.0	25.0	35.0	37.0	44.0	43.0	47.0	53.0	45.0	41.8	41.4	38.1	100.0
Farn10	26.0	31.0	31.0	23.0	16.0	17.0	17.0	22.0	22.0	28.0	31.0	30.0	24.5	24.3	22.3	100.0
Farn11	31.0	45.0	30.0	29.0	23.0	22.0	27.0	10.0	28.0		40.0	33.0	28.9	28.6	26.3	91.7
Farn12	4.0				24.0	12.0	11.0		43.0				18.8	18.6	17.1	41.7
Farn13	36.0	41.0	34.0	38.0	27.0	32.0	32.0		46.0	44.0	48.0	39.0	37.9	37.5	34.5	91.7
Farn14	59.0	63.0	59.0	42.0	41.0	31.0	38.0	49.0	54.0	65.0	63.0	61.0	52.1	51.6	47.4	100.0
Farn 16	33.0	39.0	63.0	27.0	15.0	21.0	19.0	26.0	33.0	36.0	37.0	39.0	32.3	32.0	29.4	100.0
Farn 18	32.0		29.0	37.0	41.0	4.0	26.0	41.0	50.0	51.0	56.0	45.0	37.5	37.1	34.1	91.7
Farn 19	31.0	43.0	27.0	24.0	16.0	14.0	17.0	20.0	28.0	35.0	39.0	33.0	27.3	27.0	24.8	100.0
God1	42.0	49.0	37.0	38.0	31.0	26.0	12.0	38.0	39.0		58.0		37.0	36.6	33.7	83.3
God2		30.0	28.0	20.0	19.0	13.0	15.0	39.0	24.0	30.0	30.0		24.8	24.6	22.6	83.3
God 3	34.0			34.0	32.0	28.0	18.0		40.0	27.0	49.0	27.0	32.1	31.8	29.2	75.0
God4	44.0	57.0				35.0	38.0	51.0	48.0	54.0	69.0	54.0	50.0	49.5	45.5	75.0
God5	50.0	57.0	37.0	28.0	25.0	24.0	33.0	37.0	5.0	52.0	57.0	52.0	38.1	37.7	34.7	100.0
God 6	32.0	38.0	34.0	21.0	13.0	17.0	14.0	21.0	20.0	31.0	36.0	40.0	26.4	26.2	24.0	100.0
God 7	49.0			37.0	38.0	36.0	38.0	48.0	52.0	63.0	74.0	61.0	49.6	49.1	45.1	83.3
God 8a	37.0	41.0	34.0	29.0	26.0	18.0	17.0	24.0	31.0	44.0	43.0	33.0	31.4	31.1	28.6	100.0
God 8b	37.0	42.0	27.0	23.0	19.0	19.0	19.0	22.0	30.0	44.0	47.0	39.0	30.7	30.4	27.9	100.0
God 8c	32.0	38.0	29.0	28.0	21.0	17.0	18.0	23.0	30.0	40.0	47.0	34.0	29.8	29.5	27.1	100.0
God 9					24.0	22.0	20.0	24.0	40.0	39.0	43.0	36.0	31.0	30.7	28.2	66.7
God 10					21.0				42.0	43.0	41.0	43.0	38.0	37.6	34.6	41.7
God 11									31.0	26.0	35.0	28.0	30.0	29.7	27.3	33.3
Cran1	26.0	29.0	23.0	17.0	11.0	16.0	15.0	18.0	25.0	27.0	33.0	29.0	22.4	22.2	20.4	100.0
Cran2	20.0	22.0	21.0	12.0	13.0	11.0	13.0	13.0	13.0	18.0	20.0	20.0	16.3	16.2	14.9	100.0
Cran4	26.0	34.0	25.0	20.0	15.0	19.0	17.0	23.0	23.0	29.0	35.0	28.0	24.5	24.3	22.3	100.0
Hind1		53.0	41.0	31.0	35.0	35.0	46.0	19.0	54.0	60.0	62.0	36.0	42.9	42.5	39.0	91.7
Hind2	18.0	25.0	23.0	20.0	10.0	11.0	15.0	15.0	16.0	22.0	23.0	23.0	18.4	18.2	16.8	100.0
Has1	36.0	44.0	30.0	27.0	15.0	15.0	20.0	25.0	32.0	37.0	38.0	32.0	29.3	29.0	26.6	100.0
Has2	15.0	21.0	16.0			14.0	10.0	14.0	15.0	18.0	16.0	17.0	15.6	15.4	14.2	83.3
Has3	41.0	50.0			29.0	27.0	31.0	44.0	49.0	52.0	47.0		41.1	40.7	37.4	75.0
Has4	49.0	60.0	53.0	44.0	33.0	20.0	17.0	28.0	46.0	43.0	51.0	49.0	41.1	40.7	37.4	100.0
Has5						23.0	27.0	31.0	48.0	43.0		40.0	35.3	35.0	32.2	50.0
Bram2	23.0	31.0	26.0	20.0	18.0	19.0	18.0	21.0	26.0	68.0	35.0	28.0	27.8	27.5	25.3	100.0
Bram3	21.0	34.0	29.0	22.0	17.0	15.0	14.0	18.0	24.0	27.0	34.0	30.0	23.8	23.5	21.6	100.0
Pet1	30.0	32.0	29.0	19.0	18.0		15.0	21.0	24.0	27.0	34.0	50.0	27.2	26.9	24.7	91.7
Au 1a	28.0	40.0	32.0	27.0	28.0	29.0	30.0	41.0	40.0	39.0	24.0	39.0	33.1	32.8	30.1	100.0
Au 1b	33.0	39.0	32.0	27.0	23.0	26.0	28.0	38.0	47.0	26.0	23.0	35.0	31.4	31.1	28.6	100.0
Au 1c	34.0	41.0	28.0	26.0	24.0	28.0	31.0	42.0	44.0	38.0	54.0	36.0	35.5	35.1	32.3	100.0
Dun1	31.0	23.0	33.0	23.0	23.0	20.0	23.0	23.0	29.0	37.0	32.0	32.0	27.4	27.1	24.9	100.0
Dun2	21.0	38.0	23.0	14.0	13.0	13.0	14.0	18.0	19.0	18.0	24.0	22.0	19.8	19.6	18.0	100.0
Blank	no	4.0		4.0		4.0		6.0	6.0	5.0		5.0	4.9	4.8	4.4	58.3