2016 Air Quality Annual Status Report (ASR)

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

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Local Authority Officer	John Green
Department	Environmental Health
Address	East Hampshire District Council, Penns Place, Petersfield, GU31 4EX
Telephone	01730 234322
E-mail	ehealth@easthants.gov.uk
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Executive Summary: Air Quality in Our Area

This report is East Hampshire District Council's 2016 Annual Status Report and forms part of the review and assessment of air quality in East Hampshire. The new format replaces all the previous reports under Local Air Quality Management.

The report has been prepared by reference to Government's published Policy Guidance LAQM.PG (16) and in accordance with the Technical Guidance LAQM. TG (16).

Air Quality in East Hampshire District Council

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

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

Air quality within the East Hampshire District is generally good. The Annual Status Report shows that the air quality objectives, particularly those for nitrogen dioxide, sulphur dioxide and particulates (PM_{10}) are likely to be achieved for all pollutants throughout East Hampshire. As a result of this no need has been identified to declare an Air Quality Management Area for any pollutants.

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

The previous reports published by East Hampshire District Council have only ever shown that nitrogen dioxide challenged compliance with the air quality objectives. As a result, the emphasis has been placed on consideration of this pollutant within the main body of the report. While it is afforded special consideration the air quality objectives for nitrogen dioxide continue to be met and the concentrations are either stable or reducing across the district.

This report, for the first time, also considers the requirement for reducing exposure to fine particulate matter ($PM_{2.5}$). This pollutant is capable of penetrating deep into the lungs and can cause ill health in a number of ways. It is derived from natural sources but the significant proportion is from combustion in the energy industries, road transport (both exhaust and non-exhaust emissions), off-road transport, residential combustion and small-scale waste burning.

The concentrations of $PM_{2.5}$ vary across the East Hampshire District. There will be national, regional and local influences on the concentration. The National Atmospheric Emissions Inventory (1) predicts the levels of $PM_{2.5}$ to be within the range 10.4 and 12.4 $\mu g/m^{-3}$ for 2015 with progressive 0.5 $\mu g/m^{-3}$ reductions each five years thereafter. Monitoring has recently started at the Chilbolton Observatory and the initial data suggests that the concentration is low.

Despite the already low levels of $PM_{2.5}$ across much of East Hampshire the effect on the population is estimated by Public Health England (2) to cause some 53 deaths resulting in over 482 life years lost every year. Every reduction in concentration results in increased life expectancy. In addition, a significantly larger part of the population requires medical attention or has a worse quality of life as a result of exposure. There are presently no figures available as to how many people are affected in this way.

In completing the Annual Status Report, to establish the likely levels of all pollutants and whether further work is required we have reviewed the information on the major

sources. There have been no changes to the sources that were considered in previous reports. Where significant new developments have been proposed these have been accompanied by air quality assessments and mitigation where required.

East Hampshire District Council works with neighbouring districts and boroughs in Hampshire to establish best practice. The Hampshire County Council play an important role in preventing and reducing emissions from road transport. The devolved Public Health function is also expected to play an active role in securing air quality improvements.

Preserving and improving the air quality will depend on wide participation and personal choices by residents. There are many ways that individuals can contribute to reducing air pollution and so improve air quality. Examples include the choice to use an alternative form of transport such as walking, cycling or using public transport instead of use of the car. Further information on this is contained in Section 2.3.

Actions to Improve Air Quality

Identifying the need for improvement relies on estimating emissions from sources and using this to identify locations where further monitoring and possibly action is required. Through Local Air Quality Management the information generated can be used to provide evidence based decision making. The Council continues to regularly review potential sources and to monitor air quality across the district for this purpose.

The East Hampshire District Council published an energy strategy in November 2014[4]. As well as seeking to establish energy security through sustainable means it sets out to reduce pollution. A number of projects have been initiated that have direct benefit to air quality including:

[4] http://www.easthants.gov.uk/energy-strategy

- Commencing installation of an electric vehicle charging network at eight locations.
- A commitment to procure two electric fleet vehicles.
- A feasibility study into the formation of a green energy company by the Council to increase the use of solar photovoltaic technology in the district.
- Working with Local Strategic Partnerships to reduce car usage.

Reducing congestion and encouraging a switch to active travel takes many forms. As part of a joint effort with the Hampshire County Council a Park and Stride scheme was launched at Herne School. Students can now be dropped off at a car park a short distance from the school and walk the remainder. This has the benefit of increasing exercise and reducing congestion and air pollution.

The Bordon-Whitehill regeneration is seeking to deliver a self-sufficient and sustainable local community. This should ensure that the need to travel is reduced because good local facilities will be provided to serve the needs of the whole community.

The development of a network of footpaths and cycle ways known as the green grid will encourage walking and cycling and reduce reliance on cars. The new bypass will reduce congestion in the centre where air quality was close to breaching the U.K. limits. The Hampshire County Council is also considering a new rail station and improving the bus network with the other towns in East Hampshire as part of the regeneration.

Local Priorities and Challenges

Local priorities

In the absence of specific air quality management areas and locations where the air quality is approaching the limit values the local priorities are based around ensuring

that air quality is preserved and where possible improved through evidence based decision making. The priorities below are not listed in any specific order.

The Energy Strategy will continue to be a key local priority. It has potential to reduce carbon emissions, reduce local pollution, and improve housing stock (through insulation schemes and replacement of energy consuming systems with more efficient ones). There are direct public health benefits in the reduction of pollution and improving ambient temperatures in the housing stock as well as addressing energy poverty.

As an area improvement and regeneration the Whitehill and Bordon is project is also a key corporate priority. The intention is to deliver some 4,000 new homes as well as take action to improve the existing housing stock. This is a 20 year project with final delivery due in 2035. It should deliver significant economic and environmental benefits.

The East Hampshire Cycle Plan 2004 is to be replaced by an Active Travel Strategy by April 2017. This will seek to encourage mode shifts to forms of active travel for a range of public health and environmental benefits. It is anticipated that specific projects will emerge as the strategy develops which may be reported on in future ASRs.

Practically, there will be a need to build on the relationships with the partner organisations such as the Hampshire County Council (both transport and public health functions) and neighbouring authorities who have a role in maintaining and improving air quality especially with respect to the new requirements on $PM_{2.5}$ reduction where practicable.

To ensure that developers also participate in delivering improved air quality in the optimum design of buildings and the incorporation of low emission technologies / strategies into new buildings and supporting infrastructure.

The key challenge facing all public bodies in whatever they do is securing funding for the delivery of infrastructure and staff to facilitate and manage projects. No new funding is anticipated in East Hampshire District Council as budgets have already been agreed. Any funding requirements arising from the Active Travel Strategy will be considered with the passage of the strategy through council. However, it is expected that in part, transportation will be funded through development such as section 106 planning agreements and the Community Infrastructure Levy on new developments.

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1 Local Air Quality Management

This report provides an overview of air quality in East Hampshire District Council during 2015. 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 East Hampshire 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. Table E.2 and E.3 provide further information about standards for $PM_{2.5}$.

2 Actions to Improve Air Quality

2.1 Air Quality Management Areas

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

East Hampshire District Council currently does not have any AQMAs.

DEFRA PG16 recommends that authorities that have areas that are close to the air quality objectives should consider having a local air quality strategy. With the exception of the centre of Bordon then East Hampshire District Council does not have any of these areas.

The Bordon area has seen a gradual reduction in concentrations of nitrogen dioxide and it is predicted that these will fall further with the Bordon-Whitehill regeneration as a result of initiatives including the new bypass and the generation of the green grid to facilitate active travel techniques. It is for these reasons that the East Hampshire District Council does not consider that it is necessary to draft a local air quality strategy.

2.2 Progress and Impact of Measures to address Air Quality in East Hampshire District Council

Despite not having any air quality management areas, East Hampshire District Council and the Hampshire County Council have taken forward a number of measures during the current reporting year of 2016 that have a positive effect on improving local air quality. Details of all measures completed, in progress or planned are set out in Table 2.1.

The key completed measures to date are:

- The completion of the Shipwrights Way cycle path.
- Purchase of two electric fleet vehicles.
- The installation of two electric vehicle charging points.

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

- The installation of a further six electric vehicle charge points bringing the total to eight. This will provide a charging network to encourage the uptake of electric vehicles.
- A study into the feasibility of starting a Green Energy Company
- Production of the Active Travel Strategy. This arises from a review of the Cycle Plan for East Hampshire 2004 (3). It is expected that this will lead to a shift in transport mode favouring more active travel and reducing vehicle use.

East Hampshire District Council's priorities for the coming year are:

- The continued area improvement and regeneration of Whitehill and Bordon which, amongst other things will bring about an improvement in air quality and also encourage behaviour changes toward active travel. This is a long term development scheduled for completion in 2035.

- Continue to build on the relationships with the partner organisations such as the Hampshire County Council (including Transport and Public Health functions) and neighbouring authorities who have a role in maintaining and improving air quality especially with respect to the new requirements on $PM_{2.5}$

reduction.

- To ensure that developers continue to optimise the design of buildings to minimise energy consumption and incorporate low emission technologies.

Table 2.1 – Progress on Measures to Improve Air Quality

Measure No.	Measure	EU Category	EU Classification	Lead Authority	Planning Phase	Implementation Phase	Key Performance Indicator	Target Pollution Reduction in the AQMA	Progress to Date	Estimated Completion Date	Comments
1	Council Low Emission Fleet	Promoting Low Emission Transport	Company Vehicle Procurement - Prioritising uptake of low emission vehicles	East Hampshire District Council	Completed	Commenced	Purchase of Nissan Leaf and NV 200 completed	N/A	Procurement phase underway	April 2017	
2	Electric Charge Point Network	Promoting Low Emission Transport	Other	East Hampshire District Council	Completed	Commenced	Installation of 8 charging points	N/A	Two rapid charge points installed	April 2017	
3	Modeshift STARS	Promoting Travel Alternatives	School Travel Plans	Hampshire County Council & East Hampshire District Council	Completed	Ongoing	Number of schools participating	N/A	7 schools are working towards bronze standard. 1 has achieved bronze	Ongoing	
4	Park and Stride	Traffic Management	Other	East Hampshire District Council	Completed	2016-2017	-	N/A	Recently introduced. Take up to be monitored	Ongoing	School drop off to nearby car park and then walk remainder
5	Work travel plans	Promoting Travel Alternatives	Work Travel Plans	Hampshire County Council	Completed	2011-2031	-	N/A	Information published on internet and support available	Ongoing	Sustrans provide implementation for Surrey County Council
6	Shipwrights Way	Transport Planning * Infrastructure	Cycle Network	Hampshire County Council	Complete	Complete	Opening of 50 mile cycle route	N/A	Completed July 2016	N/A	

Measure No.	Measure	EU Category	EU Classification	Lead Authority	Planning Phase	Implementation Phase	Key Performance Indicator	Target Pollution Reduction in the AQMA	Progress to Date	Estimated Completion Date	Comments
7	High speed broadband coverage[5]	Promote Travel Alternatives	Encourage / Facilitate home-working	Hampshire County Council	Completed	2011-2031	-	N/A	Phase 1 (90% coverage) completed	Provisional April 2018 for 95% coverage	Objective 11, Hants Transport Plan 2011-31
8	"My Journey – Helping Hampshire Getting Around" Travel Awareness Campaign	Promote Travel Alternatives	Intensive active travel campaign & infrastructure	Hampshire County Council	Completed	2011-31	-	N/A	Website established	Ongoing	Includes travel planning and car sharing
9	Bikeability training	Promote Travel Alternatives	Intensive active travel campaign & infrastructure	Hampshire County Council	Completed	2011-31	-	N/A	Advertised on web and scheme in place	Ongoing	
10	Licensing requirement for taxis	Promoting Low Emission Transport	Taxi Licensing conditions	East Hampshire District Council	Completed	Ongoing	-	N/A	Vehicles over six years old are required to have MoT every six months	Ongoing	
11	Cleaner buses	Promoting Low Emission Transport	Public Vehicle Procurement - Prioritising uptake of low emission vehicles	Hampshire County Council	Completed	Ongoing	Percentage of fleet complying with Euro V standard	N/A	Stagecoach has 70% of fleet Euro V and has plans to replace 6 older buses during 2016	Ongoing	Promote cleaner buses to the other bus companies

[5] See implementation advice and progress http://www.hampshiresuperfastbroadband.com/

2.3 Community Involvement in Improving Air Quality

Dealing with air pollution is not something that any single organisation or individual can resolve and it will require the combined efforts of everyone to ensure that everyone continues to breathe good quality air. In other sections we provide information on the actions that the Councils are taking. In this section we highlight how residents and businesses can be involved in improving air quality.

Business

Business organisations can do a great deal to encourage employees to reduce emissions of nitrogen dioxide and $PM_{2.5}$ in the following ways:

- Where appropriate trial working that does not require the need to travel such as flexible working that incorporates occasional or regular home working. The Chartered Institute of Personnel and Development provides advice and information about this[6]. The increasing availability of high speed broadband should facilitate this.
- Workplace travel plans are obligatory for many types of development, for example residential areas, health institutions and events venues. They can also be voluntarily adopted by any business. A workplace travel plan details how staff and visitors can travel to the workplace by sustainable forms of transport. The Hampshire County Council publishes further information and advice about travel plans[7].
- Employers can subscribe to a scheme such as that offered by Easit to obtain discounts on rail travel and electric vehicles. For more information see https://www.easit.org.uk/
- Whether or not a formal work travel plan exists employees can still take positive steps such as forming their own car sharing group to reduce transport emissions or having cycle to work clubs.

[6] http://www.cipd.co.uk/NR/rdonlyres/EBAA2100-EF46-43EE-9C6D-16577DCBC6DE/0/flexwork1005.pdf

[7] http://www3.hants.gov.uk/workplacetravel

- Where procurement is concerned then low emission plant and equipment such as electric vehicles may be specified as alternatives. Grants[8] for workplace and private electric vehicles are available from central government at the time of publishing this report.
- If you operate fixed plant, machinery or vehicles then having them regularly serviced and maintained can help to minimise emissions.

Residents

The main way that residents can help to reduce emissions is by using alternative forms of transport to the car. Where there is no alternative then if possible switch to electric vehicles but otherwise ensure that the vehicle is properly serviced and maintained.

- **Choose to walk, cycle, or use public transport instead of the car.** Even one journey a week makes a difference. There are a number of websites to help you plan your journey:

  Planning your journey http://myjourneyhampshire.com/
  Cycle paths: http://www.cycle-route.com/routes/Hampshire-Routes-79.html

  Bus timetables: http://www3.hants.gov.uk/bus-guides

  National Rail: http://www.nationalrail.co.uk/default.aspx

  Car sharing: https://hants.liftshare.com/default.asp

- **When using a car then** adjust the way you drive such as not leaving the engine idling or drive smoothly to optimise fuel consumption. Regularly servicing and properly maintaining the vehicle will also help to reduce emissions.

- **Select vehicles that emit low levels of pollution** such as electric vehicles. Grants are available: https://www.gov.uk/plug-in-car-van-grants/what-youll-get

  Advice and charging locations are reported on: https://www.zap-map.com/

[8] https://www.gov.uk/plug-in-car-van-grants/what-youll-get

- **Encourage your employer to:**

  Subscribe to Easit and then become a personal member. This will entitle you to discounts on personal travel and additional discount on electric vehicles. https://www.easit.org.uk/

  Introduce a cycle scheme to obtain discounts on bicycles: https://www.cyclescheme.co.uk/get-a-bike/how-it-works

- **Encourage and support your school to establish a school travel plan.** If you have children of school age then you can encourage and support the school to establish a school travel plan. Active travel will benefit children's health as well as reduce air pollution and there is anecdotal evidence that it improves performance at school. The modeshift STAR scheme is facilitated by Hampshire County Council and provides guidance and incentives to schools to reduce car journeys and rely on more active travel.

  For information about the scheme see https://modeshiftstars.org/

  Safety is often a concern for travelling to school and the Hampshire County Council publishes information on safer routes and offers cycling proficiency training through the bikeability scheme.

  Safer routes: http://www.hants.gov.uk/schooltravelplans/

  Cycle training: http://www3.hants.gov.uk/roadsafety/children/cycle_training.htm

2.4 $PM_{2.5}$ – Local Authority Approach to Reducing Emissions and or Concentrations

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

According to the Air Quality Expert Group[9] report then between 50 to 55% of UK $PM_{2.5}$ is derived in the UK with the remainder being a result of transboundary air pollution and natural sources of particulate.

The report states that if the aim is to reduce impacts of $PM_{2.5}$ on public health as indicated by the Atmospheric Emissions Inventory then reducing primary PM emissions is likely to be the most effective strategy. These are the emissions derived from transportation and combustion. Therefore any policies to tackle $PM_{2.5}$ should target these sources in urban areas. This has a direct link to the Public Health Outcomes Framework indicator[10] "Fraction of all-cause adult mortality attributable to anthropogenic particulate air pollution (measured as fine particulate matter, PM2.5)"

East Hampshire District Council is taking the following measures to address $PM_{2.5}$:

- Working with other organisations including the Hampshire County Council to ensure a complementary and co-ordinated approach to reducing emissions of $PM_{2.5}$
- Providing information to inform decisions, for example:
  Air quality monitoring results to the Hampshire County Council to inform transport decision making.

[9] https://uk-air.defra.gov.uk/assets/documents/reports/cat11/1508060903_DEF-PB14161_Mitigation_of_UK_PM25.pdf

[10] http://www.phoutcomes.info/public-health-outcomes-framework#gid/1000043

Air quality monitoring, transportation and pollutant reduction information via the website to inform personal choices.

- Creating or improving low emission transport networks for example the installation of electric vehicle charging points to encourage people toward electric vehicle ownership; and
  Improvement of walking and cycle paths.
- Ensuring that developments with potential to have an impact on air quality submit air quality assessments and implement appropriate mitigation measures to ensure that development is sustainable and does not have an adverse impact on air quality.
- As construction activities can result in significant particulate emissions due to grinding, cutting, earthmoving and vehicle exhaust emissions Construction Environment Management Plans are required to ensure that air quality is protected throughout the construction phase.

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

This section sets out what monitoring has taken place and how it compares with objectives.

East Hampshire District Council undertook automatic (continuous) monitoring at one site during 2015. Table A. in Appendix A shows the details of the site.

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

East Hampshire District Council undertook non- automatic (passive) monitoring of nitrogen dioxide (NO_2) at 16 sites during 2015. Table A. 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 “annualisation” and bias. Further details on adjustments are provided in Appendix C.

3.2.1 Nitrogen Dioxide (NO_2)

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

For diffusion tubes, the full 2015 dataset of monthly mean values is provided in Appendix B.

Table A. in Appendix A compares the ratified continuous monitored NO_2 hourly mean concentrations for the past five years with the air quality objective of 200µg/m^3, not to be exceeded more than 18 times per year.

The result of the ratified and adjusted monitored NO_2 annual mean concentration at the Bordon automatic monitoring site is 20.1 µg/m^3 which demonstrates compliance with the air quality objective of 40µg/m^3.

The bias adjusted results of the diffusion tube monitoring for sites across the district during 2015 range from 9.6 µg/m^3 to 34.2µg/m^3 confirming compliance with both the hourly and annual mean objectives.

On the basis of the results for existing monitoring there is no requirement to declare an Air Quallity Management Area.

3.2.2 Fine Particulate Matter, $PM_{2.5}$

Modelled data obtained from the National Atmospheric Emissions Inventory indicates that even in the urban areas then the levels of $PM_{2.5}$ are no higher than 12.4 µg/m^3. This is represented in Appendix C.1. The initial evidence from Chilbolton Observatory[11] is shown as a box and whisker diagram in Appendix C Figure C.2. This is considered to be representative for most of the area of East Hampshire.

[11] https://uk-air.defra.gov.uk/interactive-map?ll=51.149617,-1.438228&network=aurn

Three months worth of data are available and indicate that $PM_{2.5}$ is below the EC Ambient Air Quality Directive level of 20 µg/m^3.

A relationship also exists between PM_{10} levels and $PM_{2.5}$. A national correction factor has been established in that $PM_{2.5}$ constitutes 70% of PM_{10}. In all previous rounds of air quality assessment PM_{10} has not been identified as requiring further assessment. Together with the other sources of information this provides some assurance that $PM_{2.5}$ level may complies with the objective under the Ambient Air Quality Directive.

Therefore no monitoring is proposed for $PM_{2.5}$.

3.2.3 Identification of new areas for monitoring for all pollutants

We have also examined if there is a need to undertake new monitoring for all pollutants as a result of changes to sources. Table C.1 in Appendix C compares the source details for the previous and current year. As there are no significant changes no new locations have been highlighted for additional investigation.

Appendix A: Monitoring Results

Table A.1 – Details of Automatic Monitoring Sites

Site ID	Site Name	Site Type	X OS Grid Ref	Y OS Grid Ref	Pollutants Monitored	In AQMA?	Monitoring Technique	Distance to Relevant Exposure (m) (1)	Distance to kerb of nearest road (m) (2)	Inlet Height (m)
	Bordon	Urban background	479646	135341	NO_2	No	Chemiluminescent	0	4	1.5

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

(2) N/A if not applicable.

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

Site ID	Site Name	Site Type	X OS Grid Ref	Y OS Grid Ref	Pollutants Monitored	In AQMA ?	Distance to Relevant Exposure (m) (1)	Distance to kerb of nearest road (m) (2)	Tube collocated with a Continuous Analyser?	Height (m)
AB1	Alton, Orchard House	Urban background	472109	139487	NO_2	N	0	N/A	N	3
BR4	Bordon, Corals (1) Chalet Hill	Roadside	479666	135345	NO_2	N	2	2.9	N	2.56
BR7	Bordon, Corals (2) Chalet Hill	Roadside	479666	35345	NO_2	N	1	1	N	3.31
BR1	Bordon, Ashmead	Roadside	479707	135438	NO_2	N	0	10	N	2
BR2	Bordon, Chalet Court	Roadside	479695	135356	NO_2	N	0	6	N	1.5
BR3	Bordon, 10 Chalet Hill	Roadside	479711	135321	NO_2	N	1.5	2.4	N	2
BR5	BR 5 Bordon, High Street (1)	Roadside	479654	135312	NO_2	N	2	1.9	N	2.26
BR8	BR8 Bordon, High Street (2)	Roadside	479654	135312	NO_2	N	0.5	1.9	N	3.17

Site ID	Site Name	Site Type	X OS Grid Ref	Y OS Grid Ref	Pollutants Monitored	In AQMA ?	Distance to Relevant Exposure (m) (1)	Distance to kerb of nearest road (m) (2)	Tube collocated with a Continuous Analyser?	Height (m)
BU1	Bordon, Bassenthwaite Gdns	Urban background	479795	136267	NO_2	N	0	N/A	N	1.7
BR6	BR6 Bordon, Air Quality Cabin (3 tubes co-located)	Roadside	479646	135341	NO_2	N	** Representative of relevant exposure at 4m	4.8	Y	2
WR1	Whitehill, Petersfield Rd	Roadside	479314	134307	NO_2	N	18	1	N	3.25
PB1	Petersfield, Town Hall	Urban background	474989	123241	NO_2	N	*N/A	N/A	N	2
HR1	Horndean, London Road	Roadside	470554	113582	NO_2	N	2.3	2	N	2.6
HR7	Horndean Post Office	Roadside	474396	133401	NO_2	N	N/A	3.5	N	2.65

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

(2) N/A if not applicable.

Table A.3 – Annual Mean NO_2 Monitoring Results

Site ID	Site Type	Monitoring Type	Valid Data Capture for Monitoring Period (%) (1)	Valid Data Capture 2015 (%) (2)	NO_2 Annual Mean Concentration ($\mu g/m^3$) (3)				
					2011	2012	2013	2014	2015
Bordon	Roadside	Automatic	91.3	91.3	23.2	22	23.5	22.6	20.1

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

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

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

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

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

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

Site ID	Site Type	Monitoring Type	Valid Data Capture for Monitoring Period (%) (1)	Valid Data Capture 2015 (%) (2)	NO_2 1-Hour Means > 200µg/m^3 (3)				
					2011	2012	2013	2014	2015
Bordon	Roadside	Automatic	90.7	90.7	0	0	0	0	0

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

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

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

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

Information obtained from Air Quality Report (4).

Appendix B: Full Monthly Diffusion Tube Results for 2015

Table B.1 – NO_2 Monthly Diffusion Tube Results - 2015

Site ID	NO_2 Mean Concentrations ($\mu g/m^3$)													
	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual Mean	
													Raw Data	Bias Adjusted (1)
AB1	17.0	15.1	14.7	11.4	9.3	6.7	9.0	12.4	12.4	14.8	8.1	8.9	11.7	10.6
BR4	40.2	37.3	36.9	35.4	33.8	35.0	34.3	43.5	43.5	40.0	34.7	35.8	37.5	34.2
BR7	38.8	37.4	34.4	35.1	30.0	32.1	34.0	37.3	37.3	38.6	34.9	34.3	35.4	32.2
BR1	26.8	23.0	23.7	16.4	16.4	16.8	17.2	18.8	18.8	21.0	21.8	18.8	20.0	18.2
BR2	28.7	24.4	23.1	21.6	21.2	21.7	21.1	26.0	26.0	26.1	20.2	14.6	22.9	20.8
BR3	31.6	30.8	30.8	27.4	22.4	25.5	22.4	29.0	29.0	29.8	25.2	18.0	26.8	24.4
BR5	30.8	32.8	38.1	36.9	31.2	34.4	28.7	41.3	41.3	48.0	30.3	39.9	36.1	32.9
BR8	29.6	32.7	34.3	36.2	29.7	29.1	25.8	38.2	38.2	42.6	27.4	25.6	32.4	29.5
BU1	12.0	12.0	12.8	11.5	6.9	7.9	7.7	10.8	10.8	14.4	9.3	10.0	10.5	9.6
BR6	19.1	23.0	17.8	21.9	15.8	19.1	17.5	24.6	24.6	28.4	23.3	22.0	21.4	19.5
BR6	20.7	23.0	22.9	23.9	16.6	18.9	18.7	23.6	23.6	29.2	23.1	21.2	22.1	20.1
BR6	19.6	23.8	23.7	24.9	17.0	20.3	18.7	23.2	23.2	29.1	23.4	22.2	22.4	20.4

(1) See Appendix C for details on bias adjustment

(Bias adjusted using local factor and not national)

Table B.1 – NO_2 Monthly Diffusion Tube Results – 2015 (Cont)

Site ID	NO_2 Mean Concentrations ($\mu g/m^3$)													
	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual Mean	
													Raw Data	Bias Adjusted (1)
WR1	34.0	34.2	32.7	36.2	27.1	28.6	27.1	36.9	36.9	40.3	28.5	28.7	32.6	29.7
PB1	18.7	2.5	16.2	12.8	10.4	12.0	10.6	13.4	13.4	16.0	12.3	11.9	12.5	11.4
HR1	43.0	39.3	35.2	30.3	25.0	29.0	32.2	33.9	33.9	38.5	39.7	36.2	34.7	31.6
HR7	30.0	28.8	24.8	22.8	20.3	21.6	21.2	24.5	24.5	26.1	35.7	29.9	25.8	23.5

Figure B.1 Annual Concentrations of NO_2 in Bordon

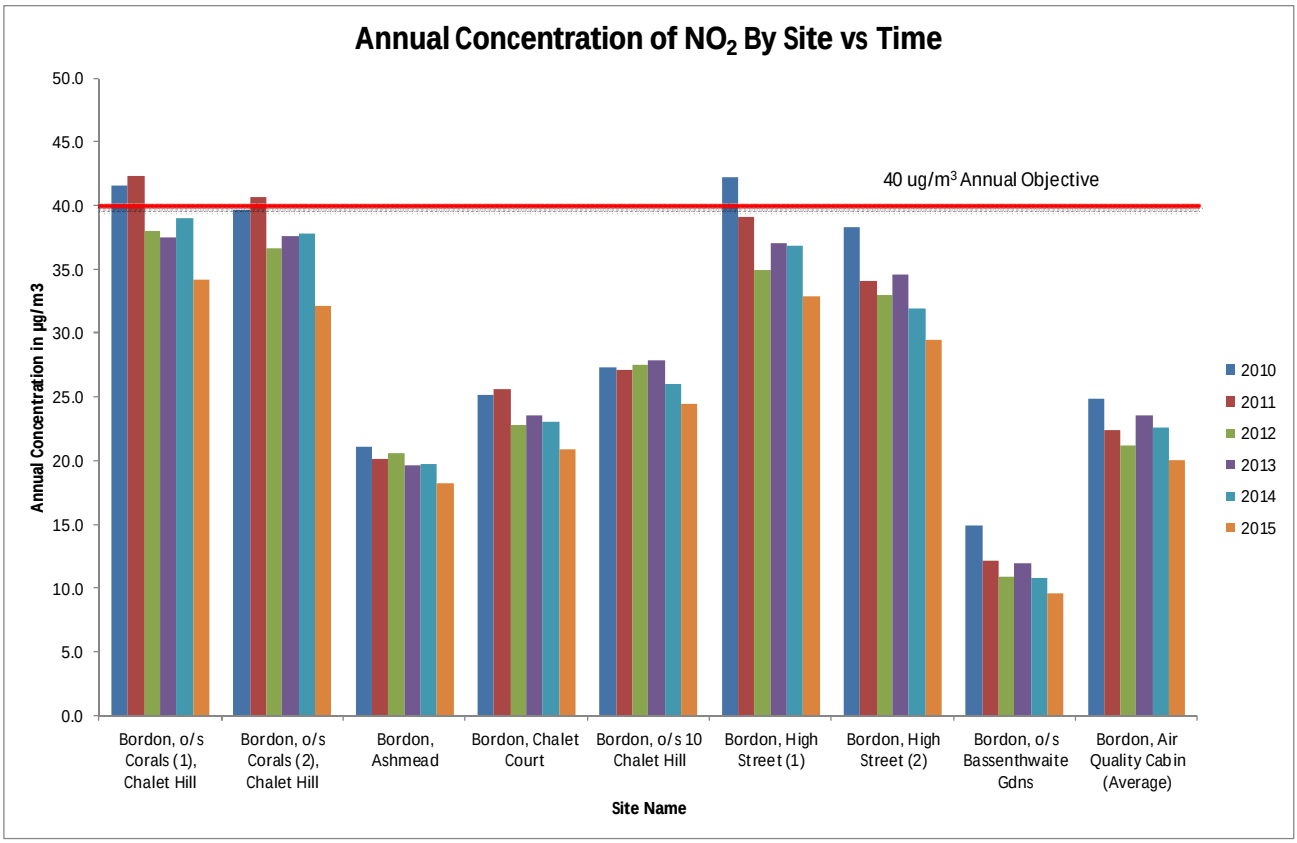
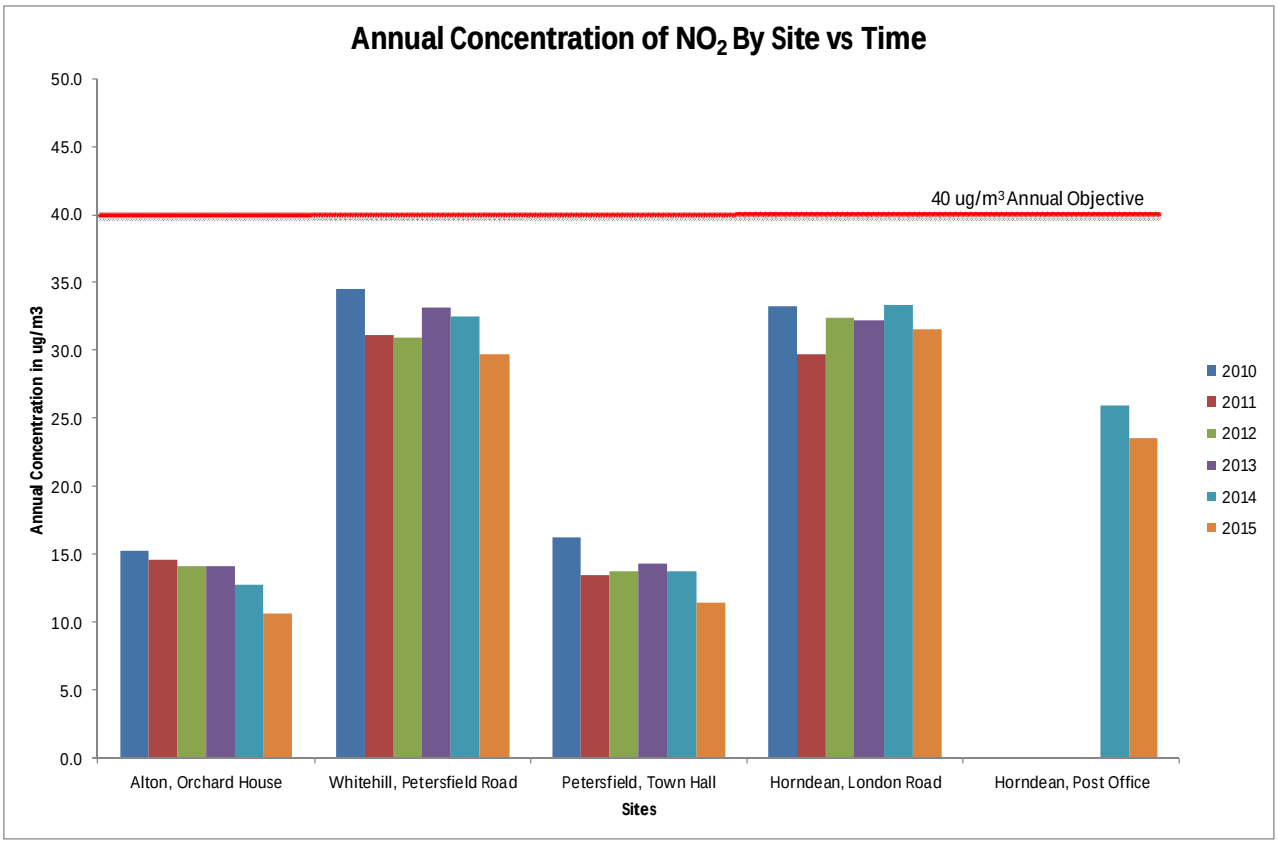


Figure B.2 Annual Concentrations of NO_2 at other locations in East Hampshire.



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

INTRODUCTION

Source Information

There have been no significant changes to source inputs. A comparison of sources was undertaken as shown in Table C.1. In addition a review was carried out of the planning permissions for residential development. For each of the major developments the planning history was reviewed and in each case an appropriate air quality assessment was completed and an Environmental Management Plan produced as well as long term mitigation.

Monitoring

This section contains information on the diffusion tube quality assurance and quality control techniques; the calculation and choice of bias factors.

There are no plans to reduce the monitoring carried out. The Bordon area monitoring is required to verify that the concentrations fall as the project proceeds.

PM2.5 Information

Data has been obtained from the National Atmospheric Emissions Inventory and Chilbolton Observatory to improve understanding of the levels likely to be encountered locally but there are no proposals to conduct monitoring.

Table C.1 Source Update

Main category	Sub category	USA 2015 Explanatory Text	USA 2015 paragraph	USA 2015 Summary	Annual Status Review
Road Traffic Sources	Narrow Congested Streets with Residential Properties Close to the Kerb	None	3.1	East Hampshire District Council confirms that there are no newly identified congested streets with a flow above 5,000 vpd and residential properties close to kerb that have not been adequately considered in previous rounds of review and assessment	No change
	Busy streets where people may spend 1 hour or more close to traffic	None	3.2	East Hampshire District Council confirms that that there are no new/newly identified busy streets where people may spend 1 hour or more close to traffic	No change
	Roads with a High Flow of Buses and/or HGVs	None	3.3	East Hampshire District Council confirms that there are no new/newly identified roads with high flows of buses/HDVs	No change
	Junctions	None	3.4	East Hampshire District Council confirms that there are no new/newly identified busy junctions/busy roads.	No change
	New Roads Constructed or Proposed Since the Last Round of Review and Assessment	Significant text on Bordon - not reproduced here	3.5	East Hampshire District Council has assessed new/proposed roads meeting the criteria in Section A.5 of Box 5.3 in TG(09), and concluded that it will not be necessary to proceed to a Detailed Assessment.	No change
	Roads with Significantly Changed Traffic Flows	None	3.6	East Hampshire District Council confirms that there are no new/newly identified roads with significantly changed traffic flows.	No change
	Bus and Coach Stations	None	3.7	East Hampshire District Council confirms that there are no relevant bus stations in the Local Authority area.	
Non Road Transport Sources	Airports	None	4.1	East Hampshire District Council confirms that there are no airports in the Local Authority area.	No change
	Railway (Diesel and Steam Trains)	There have been no changes to railways in East Hampshire since the 2012 USA12.	4.2	N/A	No change
	Stationary Trains	None	4.2.1	East Hampshire District Council confirms that there are no new locations where diesel or steam trains are regularly stationary for periods of 15 minutes or more, with potential for relevant exposure within 15m.	No change
	Moving Trains	None	4.2.2	East Hampshire District Council confirms that there are no locations with a large number of movements of diesel locomotives, and potential long-term relevant exposure within 30m.	No change
	Ports (Shipping)	East Hampshire has no coastline and therefore no shipping to consider.	4.3	East Hampshire District Council confirms that there are no ports or shipping that meet the specified criteria within the Local Authority area.	No change
	Non Road Mobile Machinery	No mention	-	Not mentioned	No sites identified. Recommended that review of Bordon Whitehill redevelopment be undertaken and where possible good practice for emissions reduction in para 7.25 TG.16 be adopted.

Main category	Sub category	USA 2015 Explanatory Text	USA 2015 paragraph reference	USA 2015 Summary	Annual Status Review
Industrial Sources	New or Proposed Installations for which an Air Quality Assessment has been Carried Out	None	5.1.1	East Hampshire District Council confirms that there are no new or proposed industrial installations for which planning approval has been granted within its area or nearby in a neighbouring authority.	No change
	Existing Installations where Emissions have Increased Substantially or New Relevant Exposure has been Introduced	None	5.1.2	East Hampshire District Council confirms that there are no industrial installations with substantially increased emissions or new relevant exposure in their vicinity within its area or nearby in a neighbouring authority.	No change
	New or Significantly Changed Installations with No Previous Air Quality Assessment	None	5.1.3	East Hampshire District Council confirms that there are no new or proposed industrial installations for which planning approval has been granted within its area or nearby in a neighbouring authority.	No change
	Major Fuel (Petrol) Storage Depots	None	5.2	There are no major fuel (petrol) storage depots within East Hampshire District Council.	No change
	Petrol Stations	The criteria for assessing petrol stations remain unchanged from previous rounds of review and assessment. All petrol filling stations were considered in the previous USAs and were found not to be relevant.	5.3	East Hampshire District Council confirms that there are no petrol stations meeting the specified criteria.	No change
	Poultry Farms	The criteria for assessing poultry farms remain unchanged from previous rounds of review and assessment. No further large poultry farms have come to Environmental Health's attention since the 2012 USA. There have been no changes to the stocking capacities of the poultry farms considered in the previous report.	5.4	East Hampshire District Council confirms that there are no poultry farms meeting the specified criteria.	No change
Commercial and Domestic Sources	Biomass Combustion – Individual Installations	None	6.1	East Hampshire District Council confirms that there are no biomass combustion plant in the Local Authority area.	No change
	Biomass Combustion – Combined Impacts	There is no data for domestic biomass combustion installations available, but based on local knowledge it is unlikely that areas with a high density of houses and service sector biomass combustion appliances exist within the District that may give rise to unacceptably high PM10 concentrations.	6.2	East Hampshire District Council confirms that there is no significant biomass combustion plant in the Local Authority area.	No change
	Domestic Solid-Fuel Burning	Based on Environmental Health records relating to smoke and odour problems from domestic properties, few of the recent issues relate to coal burning. It is likely that only a very small percentage of properties within East Hampshire regularly use coal.	6.3	East Hampshire District Council confirms that there are no areas of significant domestic fuel use in the Local Authority area.	No change
	Commercial and Domestic Gas Fired CHP Combustion Individual Installation	N/A	-	Not reported	None known
	Fugitive or Uncontrolled Sources	Dust emissions from a range of fugitive and uncontrolled sources can give rise to elevated PM10. Environmental Health records indicate very few incidents of dust problems within East Hampshire and those which have occurred have been resolved through negotiation with site owners or their contractors. TG(09) requires locations that have not been covered by previous rounds of review and assessment, or where there is new relevant exposure to be included in this section.	7	East Hampshire District Council confirms that there are no potential sources of fugitive particulate matter emissions in the Local Authority area.	No change

Diffusion Tube Bias Adjustment Factors

The diffusion tubes used by East Hampshire District Council are supplied and analysed by Gradko International Ltd and prepared by using 50% v/v TEA in acetone methodology. Gradko International Ltd is a UKAS accredited laboratory.

The bias adjustment factor for 2015 available from the Local Air Quality Management Helpdesk Database (version 03/16)[18] at the time of writing this report was 0.95. This was based on 15 studies.

Factor from Local Co-location Studies

East Hampshire District Council carries out its own investigation of diffusion tube accuracy each year by carrying out a co-location study of nitrogen dioxide at the Bordon air quality station. The local bias adjustment factor is calculated using the spreadsheet available on the LAQM website at http://laqm.defra.gov.uk/bias-adjustment-factors/local-bias.html[17]. The precision and accuracy of the co-located tubes is also calculated. For 2015 the spreadsheet provided a bias adjustment factor of 0.91 with a 95% confidence interval and this was used to adjust the annual means of single tubes.

Due to an interruption to the power supply of the monitoring station there was insufficient data capture(50.7%) for November 2015. The reported data has been excluded for the bias adjustment and the annual average has been calculated by excluding this data set.

The annual average has been calculated as 20.1 $\mu g/m^{-3}$ with the data excluded. Including the partial dataset reduced the average by 0.1 $\mu g/m^{-3}$.

A copy of the spreadsheet used can be seen in Figure C.1 below.

Figure C.1 Image of Spreadsheet To Calculate Bias

Checking Precision and Accuracy of Triplicate Tubes

AEA Energy & Environment
From the AEA group

Diffusion Tubes Measurements										Automatic Method		Data Quality Check	
Period	Start Date dd/mm/yyyy	End Date dd/mm/yyyy	Tube 1 μgm^{-3}	Tube 2 μgm^{-3}	Tube 3 μgm^{-3}	Triplicate Mean	Standard Deviation	Coefficient of Variation (CV)	95% CI of mean	Period Mean	Data Capture (% DC)	Tubes Precision Check	Automatic Monitor Data
1	07/01/2015	05/02/2015	19.1	20.7	19.6	20	0.8	4	2.0	23	99.9	Good	Good
2	05/02/2015	04/03/2015	23.0	23.0	23.8	23	0.5	2	1.2	27.2	99.8	Good	Good
3	04/03/2015	01/04/2015	17.8	22.9	23.7	21	3.2	15	8.0	24.3	97.6	Good	Good
4	01/04/2015	30/04/2015	21.9	23.9	24.9	24	1.5	6	3.8	23.4	99.9	Good	Good
5	30/04/2015	27/05/2015	15.8	16.6	17.0	16	0.6	4	1.5	12	99.8	Good	Good
6	27/05/2015	01/07/2015	19.1	18.9	20.3	19	0.7	4	1.9	10	79.6	Good	Good
7	01/07/2015	29/07/2015	17.5	18.7	18.7	18	0.7	4	1.8	12	95.5	Good	Good
8	29/07/2015	27/08/2015	24.4	27.0	24.2	25	1.6	6	3.9	18	99.7	Good	Good
9	27/08/2015	30/09/2015	24.6	23.6	23.2	24	0.7	3	1.7	24	90	Good	Good
10	30/09/2015	28/10/2015	28.4	29.2	29.1	29	0.4	1	1.1	29	85.7	Good	Good
11	28/10/2015	02/12/2015	23.3	23.1	23.4	23	0.1	1	0.3	18.3	50.7	Good	or Data Capture
12	02/12/2015	06/01/2016	22.0	21.2	22.2	22	0.5	2	1.3	18.8	97.9	Good	Good
13													
										Overall survey -->		Good precision	Good Overall DC

It is necessary to have results for at least two tubes in order to calculate the precision of the measurements

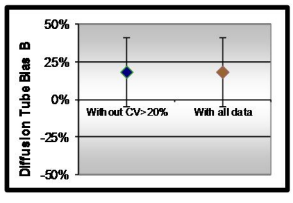
(Check average CV & DC from Accuracy calculations)

Site Name/ ID:	Bordon

Precision: 12 out of 12 periods have a CV smaller than 20%

Accuracy (with 95% confidence interval) without periods with CV larger than 20%	
Bias calculated using 11 periods of data	
Bias factor A	0.91 (0.76 - 1.15)
Bias B	9% (-13% - 32%)
Diffusion Tubes Mean:	22 μgm^{-3}
Mean CV (Precision):	5
Automatic Mean:	20 μgm^{-3}
Data Capture for periods used:	95%
Adjusted Tubes Mean:	20 (17 - 25) μgm^{-3}

Accuracy (with 95% confidence interval) WITH ALL DATA	
Bias calculated using 11 periods of data	
Bias factor A	0.91 (0.76 - 1.15)
Bias B	9% (-13% - 32%)
Diffusion Tubes Mean:	22 μgm^{-3}
Mean CV (Precision):	5
Automatic Mean:	20 μgm^{-3}
Data Capture for periods used:	95%
Adjusted Tubes Mean:	20 (17 - 25) μgm^{-3}



Jaume Targa, for AEA
Version 04 - February 2011

Discussion of Choice of Factor to Use

For 2015 both local and national bias adjustment factors are available. The locally obtained bias adjustment factor has been applied to the 2015 data as the co-location study was conducted at a site typical of all of the tubes' positions.

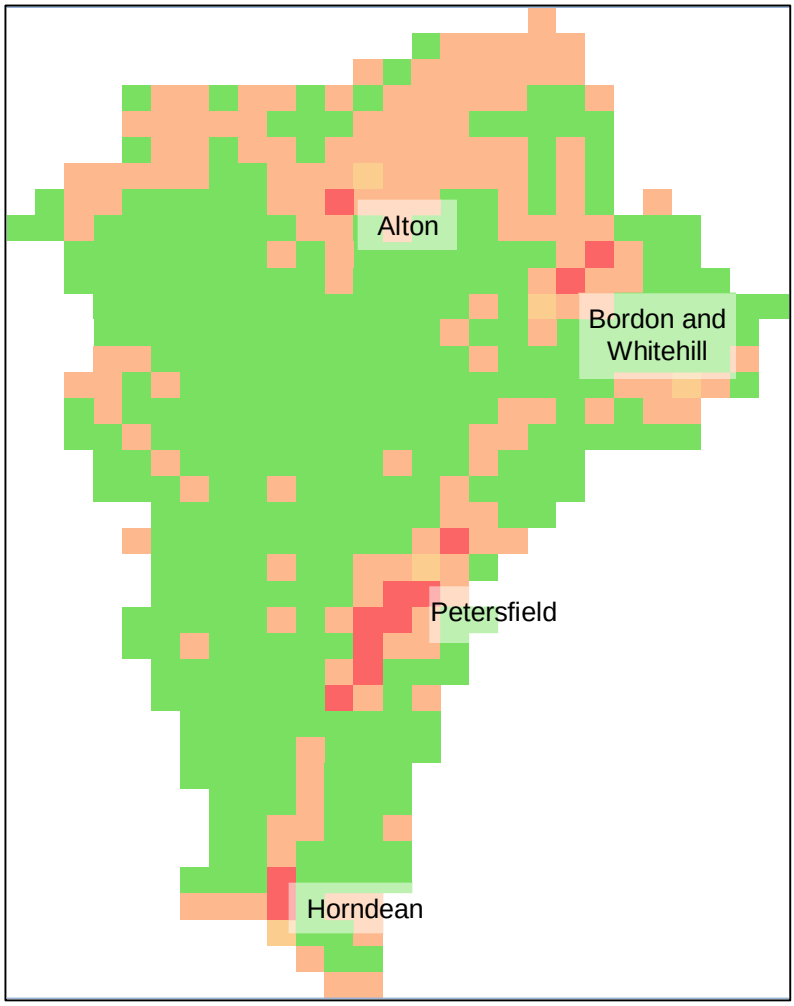
In the review of diffusion tube data for 2015 both bias adjustment factors have been considered because it is recognised that the application of the national bias factor results in higher final annual mean concentrations.

A summary of the annual mean concentrations of nitrogen dioxide for 2015 with the different bias adjustment factors applied to them is provided in Table C2.2 below.

Table C.2 Comparison of Results of National and Local Bias Adjustment

Site ref	Site ID	Site	Adjusted with local bias ($\mu g/m^{-3}$)	Adjusted with national bias ($\mu g/m^{-3}$)	Difference (local-national)
AB1	81836	Alton, Orchard House	10.6	11.1	-0.5
BR4	84294	Bordon, o/s Corals (1), Chalet Hill	34.2	35.7	-1.5
BR7	86516	Bordon, o/s Corals (2), Chalet Hill	32.2	33.6	-1.4
BR1	84300	Bordon, Ashmead	18.2	19.0	-0.8
BR2	84299	Bordon, Chalet Court	20.8	21.7	-0.9
BR3	85311	Bordon, o/s 10 Chalet Hill	24.4	25.5	-1.1
BR5	84308	Bordon, High Street (1)	32.9	34.3	-1.4
BR8	86517	Bordon, High Street (2)	29.5	30.8	-1.3
BU1	86396	Bordon, o/s Bassenthwaite Gardens	9.6	10.0	-0.4
BR6	84309	Bordon, Air Quality Cabin (1)	19.5	20.4	-0.9
BR6	84310	Bordon, Air Quality Cabin (2)	20.1	21.0	-0.9
BR6	84311	Bordon, Air Quality Cabin (3)	20.4	21.3	-0.9
WR1	85312	Whitehill, Petersfield Road	29.7	31.0	-1.3
PB1	81834	Petersfield, Town Hall	11.4	11.9	-0.5
HR1	85314	Horndean, London Road	31.6	33.0	-1.4
HR7	87593	Horndean, Post Office	23.5	24.6	-1.0

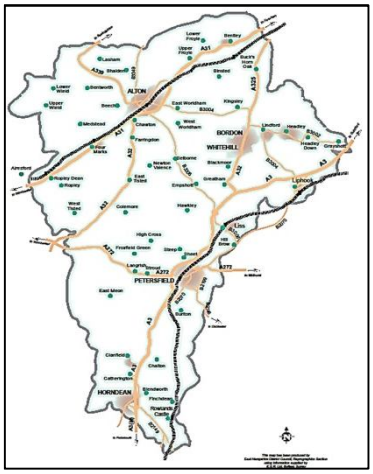
Figure C.2 Background Mapping for $PM_{2.5}$ Derived from National Atmospheric Emissions Inventory



Legend	
Range (µg/m^3)	Colour
Less than 10.5	
Between 10.5 and 10.75	
Between 10.75 and 11	
Between 11 and 11.25	
Between 11.25 and 11.5	
Between 11.5 and 11.75	
Between 11.75 and 12	
Between 12 and 12.25	
More than 12.25	

EC Directive 2008/50/EC limits		
Standard	Concentration	Date
Target	25 µg/m^3	01/01/2015
Limit	20 µg/m^3	01/01/2020

Urban exposure reduction of 15% by 2020 based on 2009-11 levels



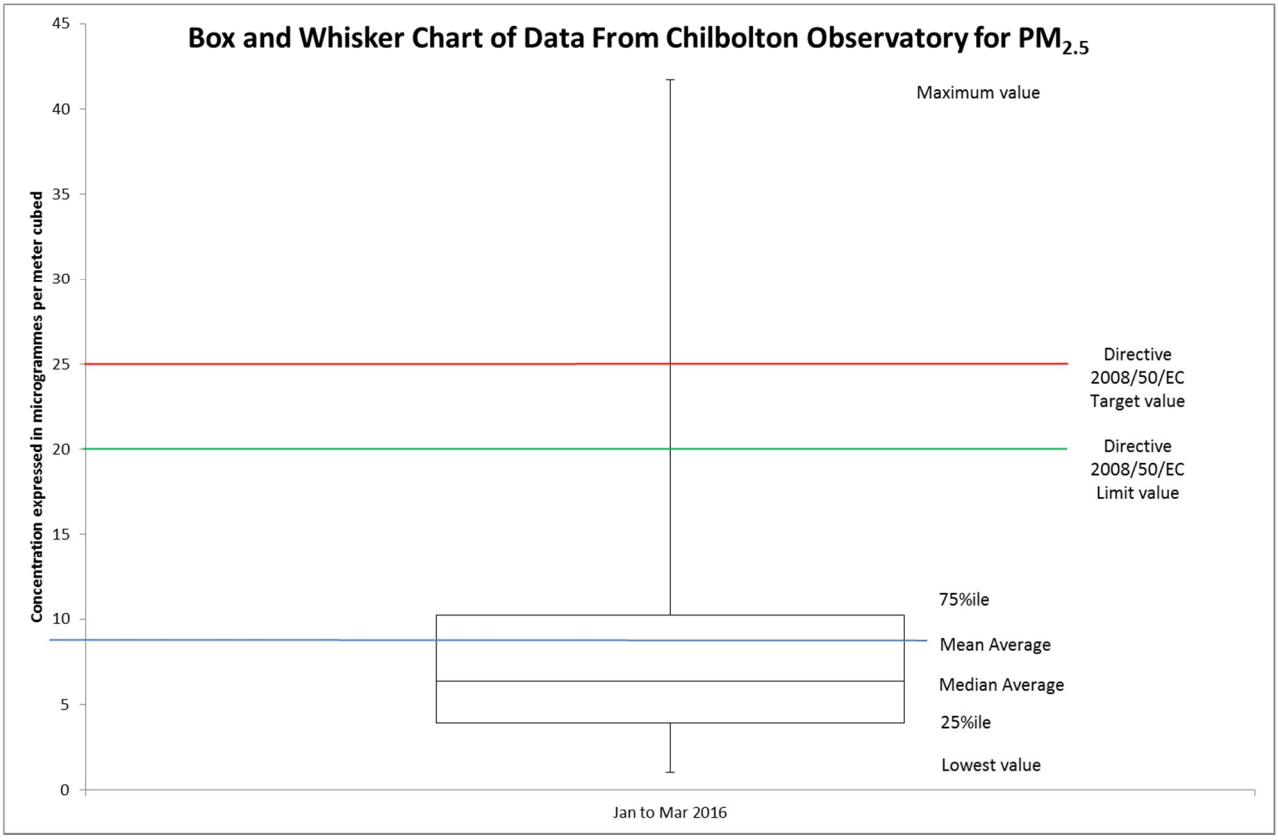
Notes

The above representation of 1km^2 grid is obtained from the National Atmospheric Emissions Inventory data.

The data values can be very close but marginally either side of the notional range. The data therefore should be interpreted only as an indication of the areas that have the highest levels.

The urban areas are predicted to have the highest concentrations. There is also some correlation with the road network which is consistent with the input data.

Figure C.3 Q1 2016 PM $_{2.5}$ Monitoring Results from Chilbolton Observatory



Notes

The vertical line marks the spread of the data. The 25%ile and 75%ile provide some information about the spread of the data suggesting that the majority of data captured is below the 10 μg/m^3. The median average value indicates that the spread of the data is lower around 7μg/m^3. A few occasional high levels have resulted in an elevation of the mean average.

It can be said that the on the whole the individual daily levels are less than half of the limit value should it be expressed on a daily basis. However, the limit value is based on an annual average and so the results will be more meaningful with good data capture over a longer period.

Results are also likely to be influenced by different weather patterns that occur as part of natural and seasonal variation.

Data source: DEFRA UK Air Data Selector (5)

Appendix D: Maps of Monitoring Locations

Bordon Continuous Air Quality Monitoring Station

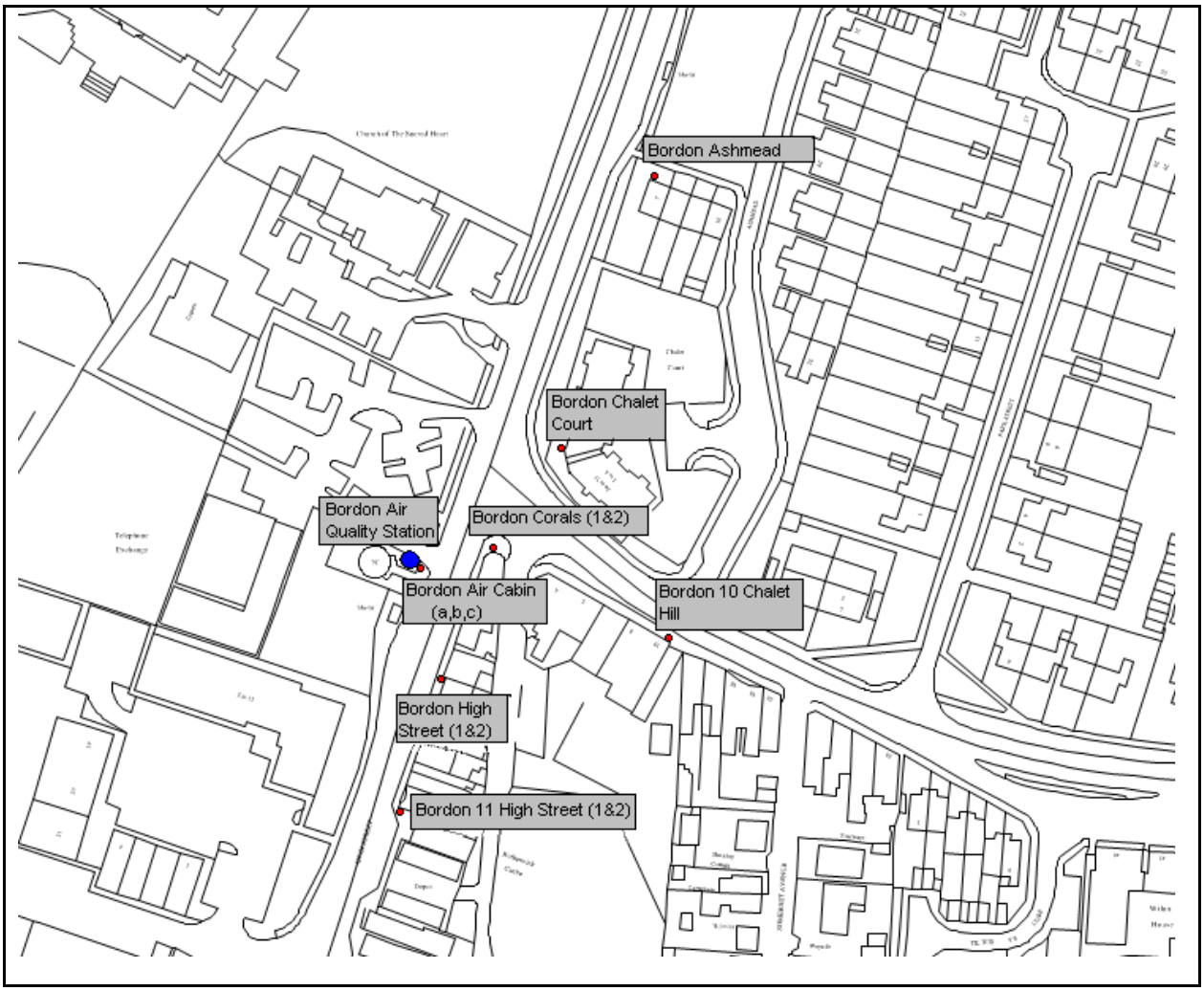
A325 High Street, Bordon near junction with Chalet Hill

Diffusion Tube Monitoring Location:

Alton, Orchard House

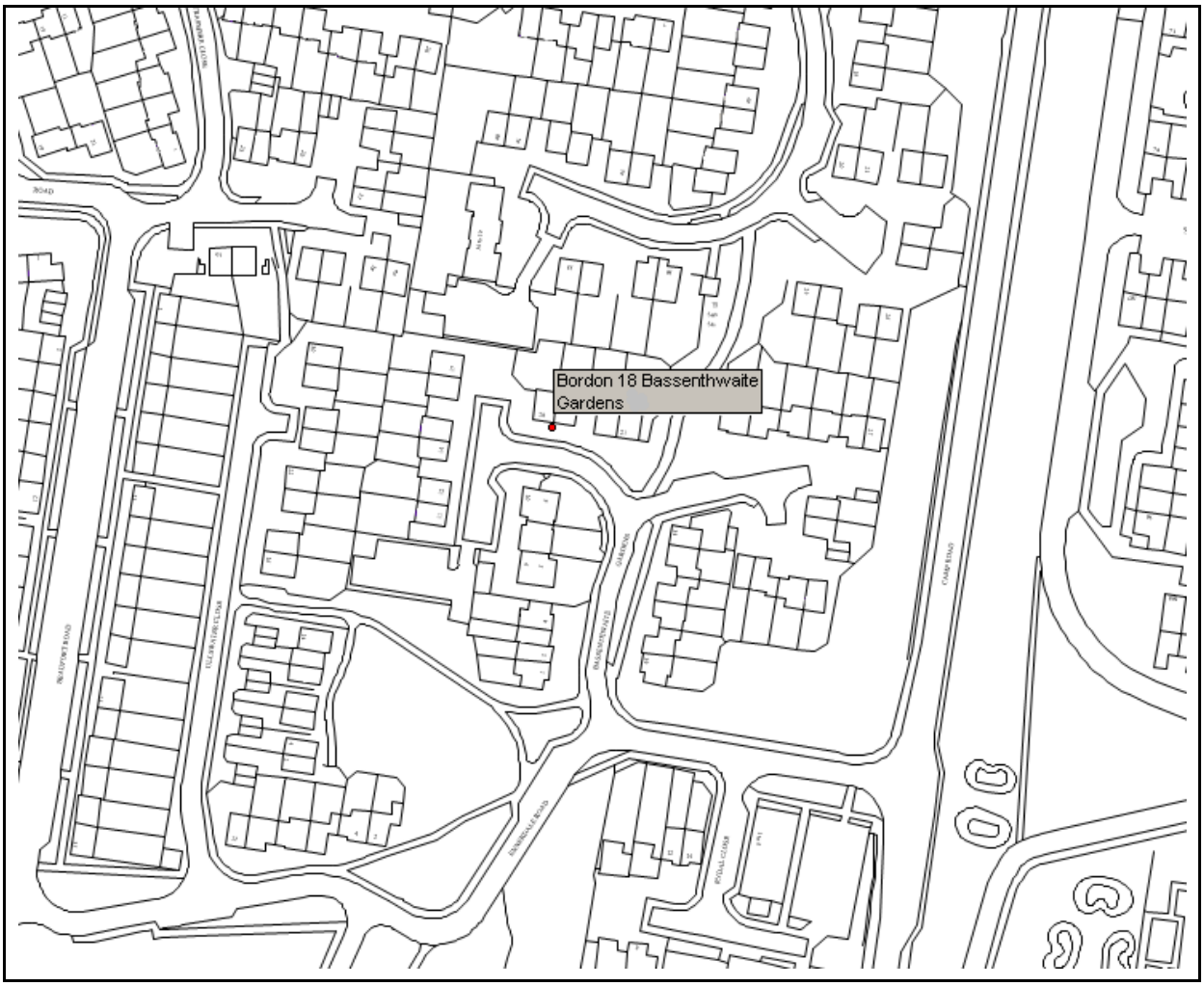
Diffusion Tube Monitoring Location:

Bordon, A325/Chalet Hill



Diffusion Tube Monitoring Location

Bordon, Bassenthwaite Gardens



Diffusion Tube Monitoring Location:

Whitehill, Petersfield Road

Diffusion Tube Monitoring Location:

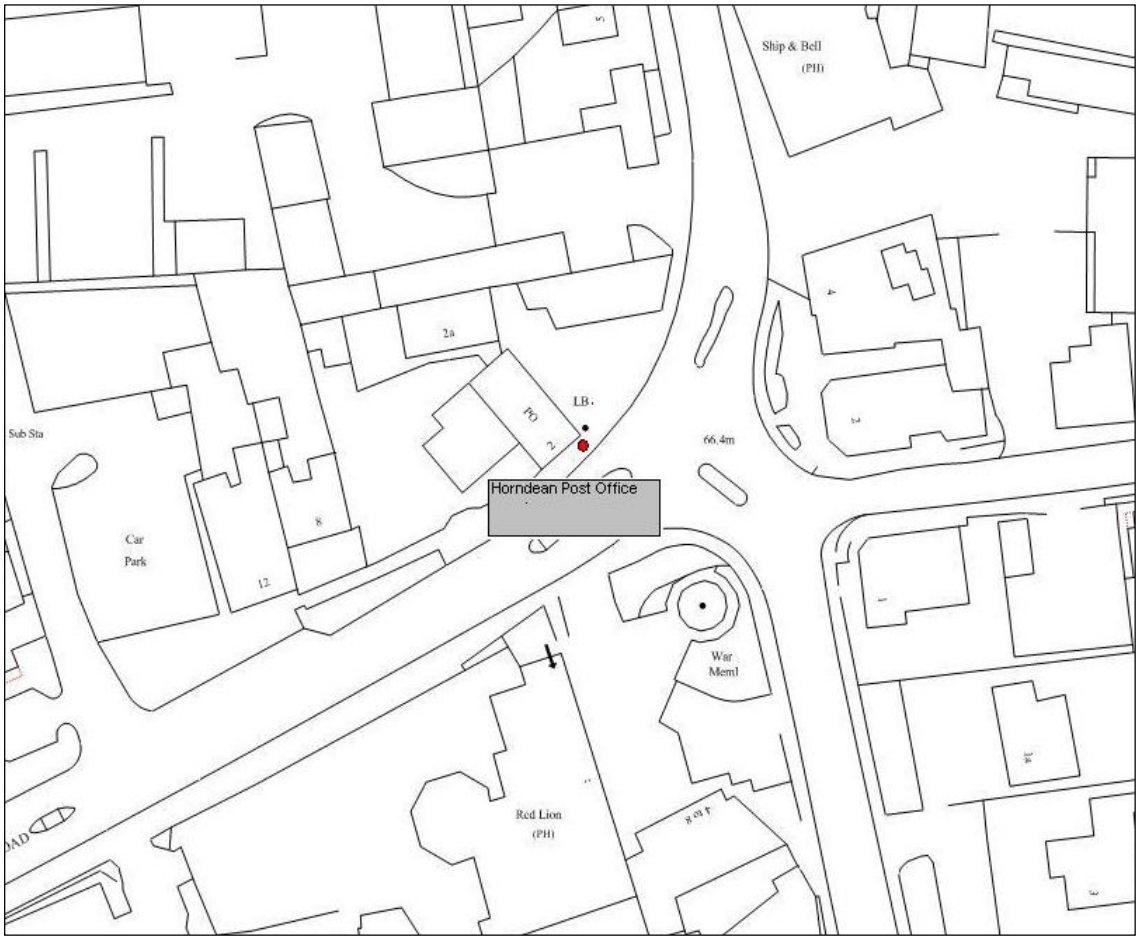
PB1 – Petersfield, Town Hall

Diffusion Tube Monitoring Location:

HR1 - Horndean, London Road

Diffusion Tube Monitoring Location:

HR7 - Horndean, Post Office



Appendix E: Summary of Air Quality Objectives in England

Table E.1 – Air Quality Objectives in England

Pollutant	Air Quality Objective[12]	
	Concentration	Measured as
Nitrogen Dioxide (NO_2)	200 µg/m^3 not to be exceeded more than 18 times a year	1-hour mean
	40 µg/m^3	Annual mean
Particulate Matter (PM_{10})	50 µg/m^3, not to be exceeded more than 35 times a year	24-hour mean
	40 µg/m^3	Annual mean
Sulphur Dioxide (SO_2)	350 µg/m^3, not to be exceeded more than 24 times a year	1-hour mean
	125 µg/m^3, not to be exceeded more than 3 times a year	24-hour mean
	266 µg/m^3, not to be exceeded more than 35 times a year	15-minute mean

Table E.2 Standards for $PM_{2.5}$

Pollutant	Air Quality Standard (England only)	
	Requirement	Measured as
Particulate Matter ($PM_{2.5}$)	Work towards reducing emissions/concentrations of fine particulate matter ($PM_{2.5}$)	Annual mean

(See Table 1.1, page 1-3 LAQM.TG16)

Table E.3 EC Directive 2008/50/EC Recommendations for $PM_{2.5}$

Pollutant	Air Quality Standard	
	Requirement	Measured as
Particulate Matter ($PM_{2.5}$)	20 µg/m^3 limit by 01/01/2020	Annual mean
	Work towards reducing emissions/concentrations of fine particulate matter ($PM_{2.5}$)	Annual mean

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

Glossary of Terms

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

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