2018 Air Quality Annual Status Report (ASR)

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

July 2018

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Report Reference number	ASR 18
Date	2 July 2018

Executive Summary: Air Quality in Our Area

Air Quality in Chichester District

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].

In general, air quality within Chichester district is generally good however there are areas where elevated concentrations of pollutants occur. The main source of air pollution is from road transport particularly on roads in and adjacent to Chichester and also on one road in the centre of Midhurst. The principal pollutant of concern is nitrogen dioxide (NO_2). Concentrations of NO_2 show a slight decrease over the last 5 years but there are still hotspots in Chichester and Midhurst where exceedances of the national air quality Objective for NO_2 occur. The hotspots in Chichester principally occur within or close to the Air Quality Management Areas (AQMAs) and in Midhurst there is a new area of exceedance within the town centre. AQMAs have been declared at three locations as follows:

•   Stockbridge roundabout at the junction with the A27 and A286

•   Orchard Street, Chichester

•   St Pancras, Chichester

Our current Air Quality Action Plan (AQAP) was adopted in 2015 and is available here: http://www.chichester.gov.uk/pollutioncontrolairquality
Air quality is seen by the Council as an important public health issue but it is not something we can improve on our own. We are working actively with other services within the Council, partners at West Sussex County Council (WSCC) including the Public Health team and the Sussex Air Quality Partnership (SAQP) to tackle this issue.

Since our first AQAP dated 2008, we have won in excess of £290k of grant monies from a variety of sources. Key projects that have been delivered include Chichester's first car club, installation of two electric vehicle charging points, 140 additional bike parking spaces in the city centre, delivered training to over 150 cyclists to ride more confidently/maintain their bikes and provided data to the air-Alert forecasting service (coordinated by SAQP).

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[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

In September 2017 we were awarded Department for Transport (Dft) funded support to assist in the production of a Local Cycling and Walking Infrastructure Plan (LCWIP). We are working with neighbouring authorities and WSCC to deliver this project and the detailed work is programmed to commence in September 2018. We will be undertaking the initial work during the summer of 2018 to enable us to be at stage 3 of the project by September. Once produced, the LCWIP will inform our Infrastructure Development Plan which enables infrastructure provision across the district. CDC is also reviewing its Local Plan and we are working with our policy planning team to ensure that air quality policies in the Plan are robust and suitably ambitious.

Actions to Improve Air Quality

We have worked with partners on a number of projects over the last year including:

- Delivery of an upgrade to a section of path to dual use within one of the City's parks (Jubilee Gardens) completed in April 2018

- Replacement of two electric vehicle charging points outside the Council offices, completed January 2018.

- We delivered a programme of cycling initiatives such as guided rides, cycle confidence training and bike maintenance courses to encourage people. During 2017 over 70 people accessed at least one of these initiatives.

- We are working with the Council's Parking Services to deliver additional electric vehicle (EV) charging points across the district.

- We have worked with a number of Council services to produce a business case for replacement of fleet vehicles with electric vehicles. This strategy has been adopted by the Council and it is anticipated that our Parking Service will replace up to two of their vehicles with electric vehicles during 2018.

Conclusions and Priorities

This year's NO_2 monitoring shows no exceedances of Air Quality Standards at either of the monitoring stations. There are two diffusion tube locations where the air quality objective of 40 μg/m^3 was exceeded, namely:

- St Pancras, within the St Pancras AQMA, Chichester

- Rumbold's Hill, Midhurst - not within an AQMA. This tube has been in place for 30 months. Additional monitoring has been implemented near this location in order to determine the extent of the exceedance of the Objective.

The above two diffusion tube locations showed similar trends last year. In response to feedback from DEFRA regarding last year's ASR, additional monitoring commenced in December 2017 (at one location in Midhurst near the existing site) and further diffusion tubes were installed in Chichester and Midhurst in January 2018. This additional monitoring will be reported in the ASR for 2019 when a full years' data is available. It is intended to commission detailed modelling of both Chichester and Midhurst in 2019 in order to determine the need to either alter the existing AQMAs and/or declare an AQMA at Midhurst and The Hornet, Chichester.

At the other 9 diffusion tube locations not within AQMAs there were no exceedences of the air quality objective of 40 µg/m^3 (although the result at The Hornet is close to the Objective at 38.3 µg/m^3.

We are currently working on a number of actions to improve air quality across the district, see Table 2.2 and our priorities for the coming year to address air quality include:

- Delivery of a new air quality monitoring station in Chichester during 2018 to provide additional data. The location of the station has been chosen in order to monitor the impact of increasing traffic on the eastern side of the City.

- Finalising a policy for inclusion within the revised Local Plan to enable air quality to be weighed appropriately within the land use planning process.

- To understand and respond to potentially significant changes to the local road network, including; possible future improvements to the A27 and the Southern Gateway redevelopment and also trips related to any published new Local Plan housing numbers.

- Production of a Local Cycling and Walking Infrastructure Plan for Chichester city. Detailed work on this project will commence in September 2018 and the project is expected to be completed by December 2019.

Local Engagement and How to get Involved

The Council was represented on a community group working up an option to present to Highways England to improve the A27 Chichester bypass. Consultants were employed to facilitate this process and the findings were presented to Highways England in June 2018. A final decision has not been made on a preferred route and Government funding has not yet been committed.

The public can get involved by supporting behavioural change initiatives (eg joining the Car Club, car sharing and walking, cycling or using public transport wherever possible. Further information can be obtained by emailing: airquality@chichester.gov.uk

The Chichester and District Cycle Forum provides information on local cycling opportunities and campaigns on behalf of cyclists. The Forum is open to the public and further information can be obtained by emailing cycle@chichester.gov.uk

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1   Local Air Quality Management

This report provides an overview of air quality in Chichester District during 2017. It fulfils the requirements of Local Air Quality Management (LAQM) as set out in Part IV of the Environment Act (1995) and the relevant Policy and Technical Guidance documents.

The LAQM process places an obligation on all local authorities to regularly review and assess air quality in their areas, and to determine whether or not the air quality objectives are likely to be achieved. Where an exceedance is considered likely the local authority must declare an Air Quality Management Area (AQMA) and prepare an Air Quality Action Plan (AQAP) setting out the measures it intends to put in place in pursuit of the objectives. This Annual Status Report (ASR) is an annual requirement showing the strategies employed by Chichester District Council to improve air quality and any progress that has been made.

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

2 Actions to Improve Air Quality

2.1 Air Quality Management Areas

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

A summary of AQMAs declared by Chichester District Council can be found in Table 2.1. Further information related to declared or revoked AQMAs, including maps of AQMA boundaries are available online at

http://www.chichester.gov.uk/pollutioncontrolairquality

Alternatively, see Appendix D: Map(s) of Monitoring Locations and AQMAs, which provides maps of air quality monitoring locations in relation to the AQMAs.

Table 2.1 – Declared Air Quality Management Areas

AQMA Name	Date of Declaration	Pollutants and Air Quality Objectives	City / Town	One Line Description	Is air quality in the AQMA influenced by roads controlled by Highways England?	Level of Exceedance (maximum monitored/modelled concentration at a location of relevant exposure)				Action Plan		
						At Declaration		Now		Name	Date of Publication	Link
AQMA Stockbridge Roundabout	24-Aug-06	NO_2 Annual Mean	Chichester	An area encompassing the Stockbridge Roundabout at the junction of the Chichester bypass (A27) and Stockbridge Road (A286)	YES	44.9	$\mu g/m^3$	39	$\mu g/m^3$	CDC AQAP	2015	http://www.chichester.gov.uk/ pollutioncontrolairquality
AQMA Orchard Street	17-May-07	NO_2 Annual Mean	Chichester	An area along Orchard Street, Chichester at the eastern end of the street where it meets Northgate	NO	40.7	$\mu g/m^3$	33	$\mu g/m^3$	CDC AQAP	2015	as above

| AQMA St Pancras | 17-May-07 | NO$_2$ Annual Mean | Chichester | An area along St Pancras, Chichester between Eastgate Square and New Park Road. Note St Pancras forms a street canyon in this section | NO | 48.3 | µg/m^3 | 44 | µg/m^3 | CDC AQAP | 2015 | as above |

☒ **CDC confirms the information on UK-Air regarding their AQMA(s) is up to date**

2.2 Progress and Impact of Measures to address Air Quality in Chichester District

DEFRA has recommended that CDC provides double tubes at more than one location for each AQMA. Additional diffusion tubes have been deployed within the existing AQMAs. As this monitoring commenced in December 2017 and January 2018 the results will be reported in the 2019 ASR. Additional monitoring also commenced in the vicinity of Rumbold's Hill in Midhurst to validate the exceedance in this location. See Appendix D for maps of the 2017 monitoring locations. Defra also recommended that the maps would be more useful if they were at a higher resolution to show road names – the maps have been updated accordingly.

The appraisal raised a query regarding the bias adjustment factor used in the report. The factor reported in Table B.1 was incorrect and should have been 1.115 as was detailed in Appendix C. The appraisal suggested that screen shots of the VCM corrections applied to the PM_{10} data captured by the TEOM monitoring should be provided – these are included within Appendix C.

We are working with partners in WSCC highways and CDC planning policy teams to focus on actions that are going to be the most effective and will be reconsidering the prioritisation of measures in the Air Quality Action Plan (AQAP). We aim to update the action plan during 2019 following the increased monitoring and subsequent re-modelling for Chichester City and Midhurst (which we have scheduled for early 2019).

Chichester District Council has taken forward a number of direct measures during the current reporting year of 2017 in pursuit of improving local air quality. Details of all measures completed, in progress or planned are set out in Table 2.2.

More detail on these measures can be found in our Action Plan. Key completed measures are:

- Alternatives to private car use: the Car Club originally set up using Defra funding has continued to grow and two additional cars were added in December 2017 at a new housing development in the north of Chichester (bringing the total to six cars). A location has been agreed for another vehicle in the eastern part of the City and it is hoped that it will be in place within 12 months.

- Promoting travel alternatives: during 2017 we continued to promote cycling through activities including guided cycle rides, bike maintenance courses, cycle confidence training and engaged with over 70 people during the year.

- Promoting low emission transport: we upgraded two EV charging points outside the Council offices with a double headed charging point and have a funded Cabinet resolution to install up to ten EV charging points across the

District. We are working with our Car Parks Service to establish where EV charging points can be installed and hope to deliver these during 2018.

- A short section of path through Jubilee Park in Chichester has been upgraded and augmented in order to remove a collision risk and regularise dual use in this location. These works were completed in April 2018.

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

- Promoting low emission transport: Chichester District Council intends to replace some of its fleet vehicles with electric vehicles over the next 12 months (where the business case for this kind of vehicle is attractive).
- Work in partnership with West Sussex Public Health and West Sussex County Council to raise awareness of the facts around poor air quality and how to reduce the sources of air pollution. This work is likely to focus on the co-benefits of active travel to health and wellbeing and how to reduce exposure to air pollution during episodes of poor air quality (through promotion of the airAlert service).

Chichester District Council's priorities for the coming year are:

- To finalise air quality policy for incorporation in the revised Local Plan in order to enable the air quality impact of new development to be properly considered and to provide a policy 'hook' from which we can associate a Supplementary Policy Document once the revised Local Plan is adopted.
- To commence work on a Local Cycling and Walking Infrastructure Plan (LCWIP) for Chichester to enable the cycling and walking network to be developed and priorities for infrastructure to be established.
- To deliver a new air quality monitoring station in Chichester during 2018 on Westhampnett Road, Chichester. The location of the station has been chosen in order to monitor the impact of increasing traffic on the eastern side of the City.

The principal challenges and barriers to implementation of measures within the AQAP that Chichester District Council anticipates facing are:

- Continuing delays to the decision on improvements to the A27 by Highways England mean that there is increasing congestion on the A27 trunk road, leading to traffic diverting through Chichester with resulting impacts on local air quality in the City.

- Availability of funding for infrastructure projects.

Progress on the following measures has been slower than expected:

- Installing EV charging points within CDC car parks was delayed while a business case was established for the EVCPs to be "cost neutral" to the

Council.

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

Table 2.2 – Progress on Measures to Improve Air Quality

Measure No.	Measure	EU Category	EU Classification	Organisations involved and Funding Source	Planning Phase	Implementation Phase	Key Performance Indicator	Reduction in Pollutant / Emission from Measure	Progress to Date	Estimated / Actual Completion Date	Comments / Barriers to implementation
1	Set up Air Quality Working Group	Promoting Travel Alternatives	Other	CDC	June/Dec 2008	Dec-08	2 meetings per year	N/A	11 meetings held to date	Ongoing	meetings held in Sept 2017 and January 2018
2	Cleaner vehicles	Promoting Low Emission Transport	Procuring alternative Refuelling infrastructure to promote Low Emission Vehicles, EV recharging, Gas fuel recharging	WSCC/CDC	2010	2011	No. of electric vehicle recharging points		2 recharging points in Chichester, secured funding to install additional charging points during 2018-19. Part of regional network of rapid charging points through Sussex-air project	2018-19	WSCC has purchased one EV and one hybrid. CDC aiming to replace some diesel vehicles during 2018
3	Planning policy	Policy Guidance and Development Control	Low Emissions Strategy	CDC	2010/11	ongoing	No. of planning conditions imposed on planning consultations		Sussex-air produced Planning Guidance and Low Emissions Strategy and in discussion with CDC Policy Planners regarding adopting LES approach. Sussex-air is reviewing its guidance and refreshed document due in 2018	2018-19	Local Plan has to be reviewed within 5 years - aim to have new policy in place within updated Plan. Draft policy in place to be finalised by end 2018.
4	Cycling and walking initiatives	Promoting Travel Alternatives	Promotion of cycling	CDC/WSCC	2009	2010	% increase in cycling		Guided cycle rides, cycle training and bike maintenance courses held each summer since 2010, 8.6% inc in cycling from 2016- 2017. Funding secured to deliver LCWIP for Chichester City	LCWIP to be completed Dec 2019	Once LCWIP in place, bids for funding can be made for cycle infrastructure improvements

5	Car Clubs	Alternatives to private vehicle use	Car Clubs	CDC	2010	2011	Utilisation rate of cars to be 20%		6 cars now available to book, development worker employed 2014-16 to promote Club, utilisation rate of >20% (average) during 2017-18	2018-19	Two cars added in Dec 2017 at site within housing development. Additional site identified for new car to be added during 2018-19.
6	School travel plans	Promoting Travel Alternatives	School Travel Plans	WSCC/CDC	2008/9	2009/10	% children travelling to school by sustainable means		During 2017/18 Living Streets project engaged with 5 primary schools in the District to support Walk to School scheme (WOW) and engaged students and staff at Chichester University	Mar-20	Funding provided to two schools to enable them to hold Bike It breakfasts
7	WSCC and CDC travel plans	Promoting Travel Alternatives	Workplace Travel Planning	WSCC/CDC	2010	2011/12	% WSCC and CDC staff travelling by sustainable means		Grey fleet business mileage was 5.17 million miles below 6.0 million miles target. Easit scheme at WSCC and CDC to encourage rail use. Cycle to work scheme at CDC	Ongoing	Ongoing industrial action by Southern Rail during 2017 reduced reliability of rail travel and hence take up of scheme lower than expected
8	Business travel plans	Promoting Travel Alternatives	School Travel Plans	WSCC	2009	Ongoing	Travel Plan implemented within target time period		Over 29 Travel Plans submitted since 2009 and Travel Plan group set up attended by large organisations to work on joint measures.	Ongoing	3 submitted during 2017
9	Residential travel plans	Promoting Travel Alternatives	Personalised Travel Planning	WSCC	2009	Ongoing	Travel Plan implemented within target time period		Over 25 Travel Plans have been submitted since 2009	Ongoing	1 submitted during 2017
10	TravelWise/smarter choices	Public Information	Via leaflets	WSCC/CDC	2009	Ongoing	No. of users of WSCC car share database for PO19 area		Steady increase in number of users of database for 2017	Ongoing	72 new users in 2017
11	Cycle route information	Promoting Travel Alternatives	Promotion of cycling	CDC	2009	Ongoing	No. of maps sold through Tourist Information or other outlets.		5 route leaflets have been produced so far and over 1300 copies have been sold to date. 48 leaflets sold	Ongoing	48 maps sold in 2017

									in 2017		
12	Cycle journey planning	Public Information	Via the Internet	WSCC	2010	2011	No. of journeys planned on website		Web link available on WSCC and CDC websites	Ongoing	3466 journeys planned 2017-18
13	Public transport infrastructure	Transport Planning and Infrastructure	Public transport improvements- interchanges stations and services	WSCC	2010	2011-15	Increase in use of public transport		RTPI displays installed at key locations across City	Ongoing	6 RTPI displays installed in 2017-18 and more planned for 2018-19
14	Cleaner buses	Promoting Low Emission Transport	Public Vehicle Procurement - Prioritising uptake of low emission vehicles	WSCC	2009	Ongoing	% of Euro 5 buses		Stagecoach has 60% of fleet Euro 5 and replaced older Euro 2 buses with Euro 4 and 5 buses during 2017	Ongoing	Need to promote cleaner buses to other bus companies
15	Licensing requirement for taxis	Promoting Low Emission Transport	Taxi Licensing conditions	CDC	2009/10	2011	No. of Euro 4 vehicles		For vehicles 5 years and over, MOT and fitness test required every 6 months	Ongoing	
16	Forecasting, monitoring and public information	Public Information	Via other mechanisms	SAQP/WSCC	2008	Ongoing	No. of people registered to receive alerts		Over 971 subscribers registered across Sussex. Raise awareness of facts around poor air quality and how to reduce the sources of air pollution by working with Public Health and WSCC.	Ongoing	116 new subscribers during 2017. Plan to publicise AQ issues during 2018 in CDC initiatives magazine
17	AQ monitoring and traffic monitoring	Traffic Management	UTC, Congestion management, traffic reduction	CDC/WSCC	2008	Ongoing	Reduction in traffic volumes		Traffic flows between 2009 - 2017 reduced by between 1 - 3% in AQMA areas	Ongoing	
18	A27 by-pass improve-ments	Traffic Management	Strategic highway improvements, Re-prioritising road space away from	HE	Ongoing	Post 2020	Reduction in congestion		HE have re-consulted during 2017 on options for improving A27 around Chichester	2025	New consultation during 2017 decision by HE during 2018/19

			cars, including Access management, Selective vehicle priority, bus priority, high vehicle occupancy lane								
19	Variable message signing (VMS) on A27	Traffic Management	UTC, Congestion management, traffic reduction	HE	2009	pilot by 2020	No. of warnings made per year		HE decision awaited	Ongoing	Awaiting outcome of A27 improvements decision
20	Park and ride schemes in and around City	Alternatives to private vehicle use	Bus based Park & Ride	CDC	Post 2015	Post 2018	Reduce traffic in City centre by 3%		Linked to A27 improvements that have not yet been brought forward	Ongoing	CDC parking strategy under review
21	Speed limit changes - 20 mph as part of school safety zone	Traffic Management	Reduction of speed limits, 20mph zones	WSCC	2009	2012/13	Reduction in traffic queues within Orchard St AQMA area		Signs installed around schools and on nearby residential streets	Completed	Reductions in NO_2 within AQMA could be achieved through smoothing of traffic flow
22	Blanket 20mph scheme on residential streets	Traffic Management	Reduction of speed limits, 20mph zones	WSCC	2012/13	2013/14	Reduced speed on residential streets		WSCC contracted officer to promote 20mph and work with schools and community and CDC hosted officer and provided support	Completed	Roads monitored before and after implementation and speed reductions achieved on some roads
23	MOVA traffic signal optimisation	Traffic Management	UTC, Congestion management, traffic reduction	WSCC	2009/10	2010	Reduction in traffic queues within AQMAs		2 new Puffins to replace existing crossings implemented	Completed	Improves emissions by eliminating ghost users and reducing red time

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

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

Chichester District Council is taking the following measures to address PM$_{2.5}$:

• Measure 15 - taxi licensing conditions - since 2011 we have required vehicles that are 5 years old and over to have MOT and fitness tests every 6 months. As vehicle licensing requirements in London become more stringent, (new London taxis will need to be zero emission capable from 2018) this licensing condition will be reviewed in conjunction with our licensing colleagues.

• Measure 14 – cleaner buses – Fleet managers report that upgrades to the fleet are ongoing in order to introduce cleaner buses. We shall continue to engage with them to promote any funding opportunities that may enable upgrades to the fleet.

WSCC is developing its new Bus Strategy for 2018 – 26. One of the objectives is that West Sussex will be a place where 'bus services give people a viable alternative to being a car owner'. A priority of the Strategy is to 'promote the use of latest clean engine technology'. As a result of implementing the Strategy another objective is that 'air quality is better as a consequence of investment in cleaner buses as opposed to cars'.

Where considered appropriate we have recommended that construction environmental management plans (CEMP) are put in place at new developments which include dust control strategies.

We are working in partnership with West Sussex Public Health and WSCC to raise awareness of the facts around poor air quality and how to reduce the sources of air pollution focusing on the co-benefits of active travel to health and wellbeing. Through Sussex-Air we have been successful in bidding for grant funding to run an anti-idling campaign outside schools across West and East Sussex and CDC will be part of this project (due to commence during 2018).

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.

Chichester District Council undertook automatic (continuous) monitoring at three sites during 2017. Table A.1 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 how the monitors are calibrated and how the data has been adjusted are included in Appendix C.

3.1.2 Non-Automatic Monitoring Sites

Chichester District Council undertook non- automatic (passive) monitoring of NO_2 at 11 sites during 2017. Table A.2 in Appendix A shows the details of the sites. In response to the feedback from DEFRA regarding last year's ASR, additional monitoring commenced in December 2017 at one location in Midhurst near the existing site and further diffusion tubes were installed in Chichester and Midhurst in January 2018. This additional monitoring will be reported in the ASR for 2019 when a full years' data is available.

Maps showing the location of the 2017 monitoring sites are provided in Appendix D. Further details on Quality Assurance/Quality Control (QA/QC) for the diffusion tubes, including bias adjustments and any other adjustments applied (e.g. "annualisation" and/or distance correction), are included in Appendix C.

3.2 Individual Pollutants

The air quality monitoring results presented in this section are, where relevant, adjusted for bias, "annualisation" and distance correction. Further details on adjustments are provided in Appendix C.

3.2.1 Nitrogen Dioxide (NO_2)

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

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

Table A.4 in Appendix A compares the ratified continuous monitored NO_2 hourly mean concentrations for the past 5 years with the air quality objective of 200µg/m^3, not to be exceeded more than 18 times per year.

From Table A.3, there has been a slight decrease in the NO_2 annual mean concentration at the Stockbridge monitoring station (from 34 to 33µg/m^3) and the air quality objective was not exceeded. The results at this location have been broadly

similar for the past five years, ranging from 32 - 34µg/m^3. The monitoring station is not within the AQMA and does not represent a location of relevant exposure however it is the only suitable long term location available for monitoring near the Stockbridge AQMA. There are three co-located diffusion tubes at the monitoring station and the 2017 annual means for these tubes ranged from 32 - 34µg/m^3 . As noted for the monitoring station, the air quality objective was not exceeded.

At the Orchard Street monitoring station the NO$_2$ annual mean concentration was 23µg/m^3. Results at this monitoring station have ranged from 23 - 34µg/m^3 over the last five years and the air quality objective has not been exceeded. It should be noted that the analyser at the monitoring station was replaced in September 2016 as the previous analyser became faulty therefore we do not have a full year's data for 2016. At the nearest diffusion tube location, the annual mean was 33 µg/m^3 and the results at this location have ranged from 33 – 39 µg/m^3 over the last five years. It is intended that monitoring will continue for the next few years to establish the ongoing trend at this location. Both the monitoring station and the diffusion tube are located within the AQMA and represent relevant exposure.

At two of the diffusion tube locations, the air quality objective of 40 µg/m^3 was exceeded, namely:

- St Pancras, within the St Pancras AQMA

- Rumbold's Hill, Midhurst – not within an AQMA. This tube has been in place for 30 months and is located within 0.5m of a residential façade. Monitoring near this location has been increased in order to determine the extent of this exceedance and to enlarge the dataset and the results will be reported in the 2019 ASR.

At two other locations, the diffusion tube annual means were close to the air quality objective. At Claremont Court, Chichester the annual mean was 39 µg/m^3 and at The Hornet, Chichester the annual mean was 38 µg/m^3. Claremont Court is within the Stockbridge Roundabout AQMA and The Hornet is close to the St Pancras AQMA. Additional tubes have been deployed near both these locations to gather more data at these locations.

At the other diffusion tube monitoring sites the NO$_2$ concentration has decreased from 2016 to 2017 and all sites were compliant with the NO$_2$ air quality objective of 40 µg/m^3.

From Table A.4 there have been no exceedences of the NO$_2$ 1-hour mean concentration at the Stockbridge or Orchard Street monitoring stations for the past 5 years. The DEFRA guidance suggests that the 1-hour mean objective is unlikely to be breached unless the annual mean concentration is 60µg/m^3 or above.

As mentioned previously, the number of monitoring locations within the AQMAs has been increased and once we have a year's monitoring data from these new locations we will be able to determine if any of the AQMAs need to be expanded or revoked.

Additional monitoring is also being undertaken at Rumbold's Hill, Midhurst to determine the extent of the area of exceedance of the annual mean objective. This data will be used to enable modelling of this area during 2019 with a view to determining the need to declare an Air Quality Management Area.

3.2.2 Particulate Matter (PM₁₀)Figure A.3 - Trends in NO₂ diffusion tubes 2012 – 2017

2012 - 2017 Nitrogen dioxide concentrations measured by diffusion tube
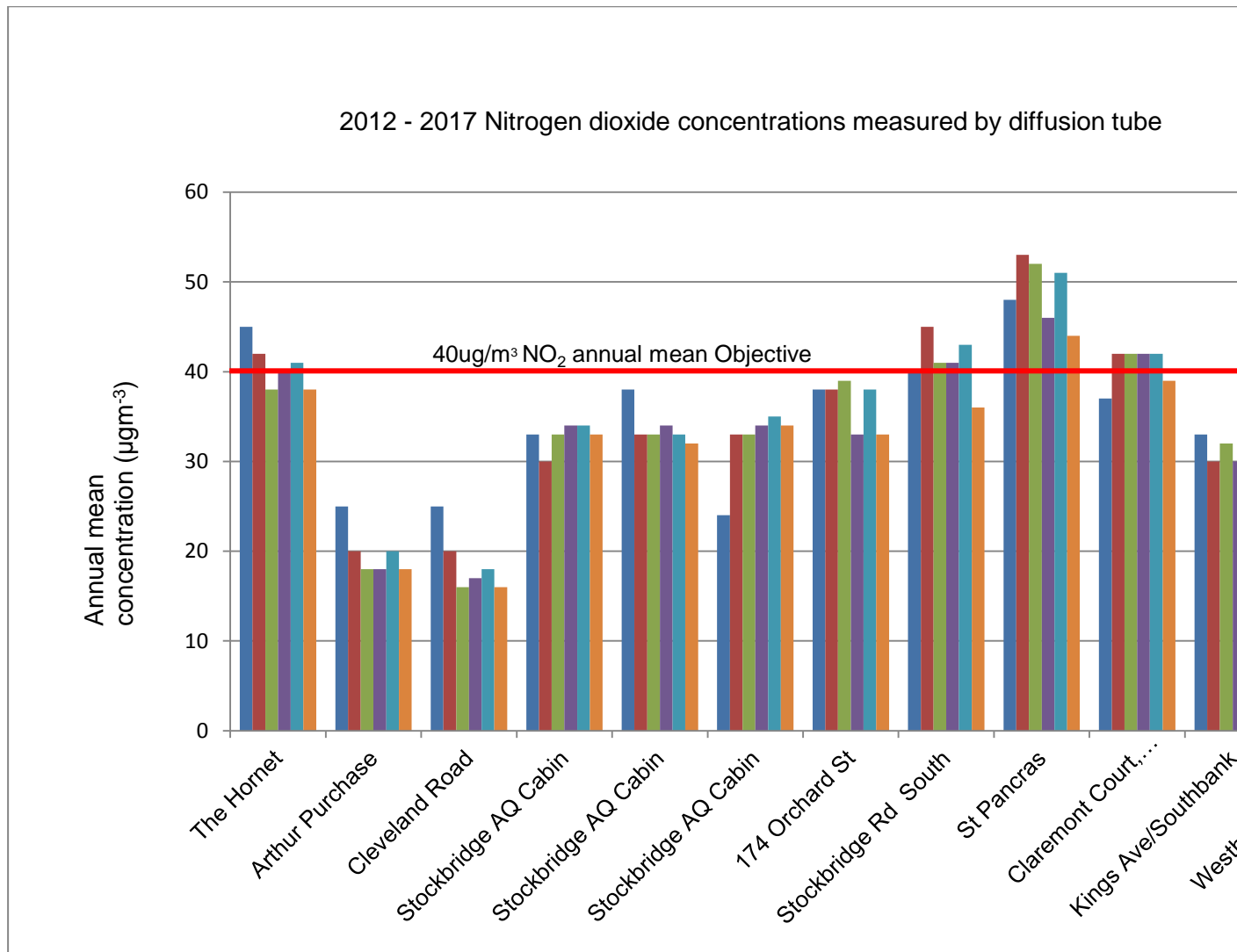
Table A.5 in Appendix A compares the ratified and adjusted monitored PM₁₀ annual mean concentrations for the past 5 years with the air quality objective of 40μg/m³.

Table A.6 in Appendix A compares the ratified continuous monitored PM₁₀ daily mean concentrations for the past 5 years with the air quality objective of 50μg/m³, not to be exceeded more than 35 times per year.

From Table A.5, the annual mean concentration has varied over the last 5 years from a maximum of 21μg/m³ (2015) to 19μg/m³ (2017) and is compliant with the air quality objective of 40μg/m³. In addition, the number of PM₁₀ daily mean concentrations exceeding the Objective has varied over the last 5 years, from a maximum of 3 in 2015 to 1 in 2017. The air quality objective (50 μg/m³ not to be exceeded more than 35 times per year) has therefore been met for the last 5 years.

3.2.3 Ozone (O₃)

Chichester District Council has been monitoring ozone in the rural village of Lodsworth for over ten years. Ozone concentrations can become elevated when nitrogen dioxide and volatile organic compounds react in the presence of strong sunlight. CDC has been monitoring this pollutant due to its importance with regard to public health and to provide information to the Sussex-air, air-Alert public information system (see Table 2.2 Measure no. 16).
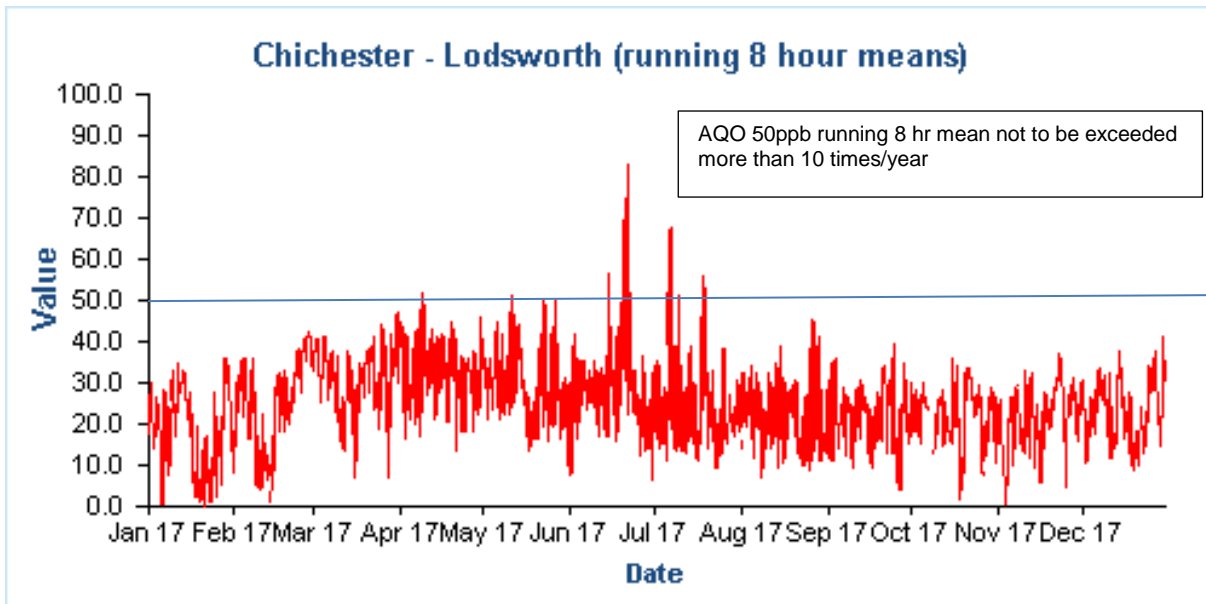
The Table below compares the ratified and adjusted monitored O_3 concentrations and indicates that the number of exceedances of the running 8 hour mean (of 100 µg/m^3 or 50ppb) has fluctuated over the last five years from twenty five in 2013 to fifteen in 2017.

Site ID	Site Type	Valid Data Capture for Monitoring Period (%) [1]	Valid Data Capture 2017 (%) [2]	O₃ - No more than 10 days where maximum rolling 8 hr mean >= 100 µg/m³				
				2013	2014	2015	2016	2017
AR1	Rural (Lodsworth)		99	25	17	7	16	15

(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%).

The latest data shows that the Objective was not achieved in 2017 as there were more than ten exceedances of the running 8 hour mean during the year, see Figure below.

Chichester - Lodsworth (running 8 hour means)

AQO 50ppb running 8 hr mean not to be exceeded more than 10 times/year

Comparison to the DEFRA banding below shows that in 2017 at Lodsworth there were 14 days when 'moderate pollution' occurred and one 'high pollution' day, see box for health messages of DEFRA pollution bands.

Health messages of the DEFRA Pollution Bands

Pollution band and numerical index	Health messages for at-risk groups*
1 – 3 (low)	Enjoy your usual outdoor activities.
4 – 6 (moderate)	Adults and children with lung problems, and adults with heart problems, who experience symptoms, should consider reducing strenuous physical activity, particularly outdoors.
7 – 9 (high)	Adults and children with lung problems, and adults with heart problems, should reduce strenuous physical exertion, particularly outdoors, and particularly if they experience symptoms. People with asthma may find they need to use their reliever inhaler more often. Older people should also reduce physical exertion.
10 (very high)	Adults and children with lung problems, adults with heart problems, and older people, should avoid strenuous physical activity. People with asthma may find they need to use their reliever inhaler more often.
Adults and children with heart or lung problems are at greater risk of symptoms.	

NB. Local authorities are no longer obliged to report annually on the following pollutants: 1,3 butadiene, benzene, carbon monoxide and lead, unless local circumstances indicate there is an issue. National monitoring results are available at https://uk-air.defra.gov.uk/data/

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)
CI1	Stockbridge	Suburban	485881	103791	NO_2; PM_{10}	NO	chemiluminescent/TEOM	25	26	3
CI4	Orchard Street	Roadside	485982	105221	NO_2	YES	Chemiluminescent	10	3.75	2
AR1	Lodsworth	Rural	492396	123248	O_3	NO	UV	n/a	n/a	2.1

Notes:

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

(2) N/A if not applicable.

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

Site ID	Site Name	Site Type	X OS Grid Ref	Y OS Grid Ref	Pollutants Monitored	In AQMA?	Distance to Relevant Exposure (m) [1]	Distance to kerb of nearest road (m) [2]	Tube collocated with a Continuous Analyser?	Height (m)
1	Kings Ave/Southbank Jct	Roadside	485776	103961	NO$_2$	N	11	2.25	N	3
2	Claremont Court	Roadside	485772	103847	NO$_2$	Y	0	7.5	N	3
3	Cabin	Suburban	485880	103791	NO$_2$	N	25	26	Y	2.7
4	Cabin	Suburban	485880	103791	NO$_2$	N	25	26	Y	2.7
5	Cabin	Suburban	485880	103791	NO$_2$	N	25	26	Y	2.7
6	Stockbridge Road South	Roadside	485696	103731	NO$_2$	N	14	2	N	2.85
7	Cleveland Rd	Urban Background	486953	104414	NO$_2$	N	18	1.8	N	2.8
8	Westhampnett Road	Roadside	487341	105474	NO$_2$	N	3	1.65	N	2.85
9	Hornet	Roadside	486502	104795	NO$_2$	N	0	1.8	N	3.1
10	St Pancras	Roadside	486533	104860	NO$_2$	Y	0	2	N	3
11	Arthur Purchase	Urban Background	486082	105026	NO$_2$	N	0	6	N	2.7
12	174 Orchard St	Roadside	485914	105185	NO$_2$	Y	0	2	N	2.65
14	Rumbold's Hill, Midhurst	Roadside	488561	121479	NO$_2$	N	0.5	1.5	N	3.4

Notes:

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

(2) N/A if not applicable.

Table A.3 – Annual Mean NO₂ Monitoring Results

Site ID	Site Type	Monitoring Type	Valid Data Capture for Monitoring Period (%) [1]	Valid Data Capture 2017 (%) [2]	NO₂ Annual Mean Concentration (µg/m³) [3]				
					2013	2014	2015	2016	2017
CI1	Suburban	Automatic		99	32	33	34	34	33
CI4	Roadside	Automatic		100	27	34	x	29	23
1	Roadside	Diffusion Tube		100	30	32	30	33	29
2	Roadside	Diffusion Tube		100	**42**	**42**	**42**	**42**	39
3	Suburban	Diffusion Tube		100	30	33	34	34	33
4	Suburban	Diffusion Tube		100	33	33	34	33	32
5	Suburban	Diffusion Tube		100	33	33	34	35	34
6	Roadside	Diffusion Tube		100	**45**	**41**	**41**	**43**	36
7	Urban Background	Diffusion Tube		100	20	16	17	18	16
8	Roadside	Diffusion Tube		100	36	31	30	31	30
9	Roadside	Diffusion Tube		100	**42**	38	**40**	**41**	38
10	Roadside	Diffusion Tube		100	**53**	**52**	**46**	**51**	**44**
11	Urban Background	Diffusion Tube		100	20	18	18	20	18
12	Roadside	Diffusion Tube		100	38	39	33	38	33
14	Roadside	Diffusion Tube		92	x	x	**48**	**51**	**49**

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

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

Notes:

Exceedances of the NO$_2$ annual mean objective of 40µg/m^3 are shown in **bold**.

NO$_2$ annual means exceeding 60µg/m^3, indicating a potential exceedance of the NO$_2$ 1-hour mean objective are shown in **<u>bold and underlined.</u>**

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

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

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

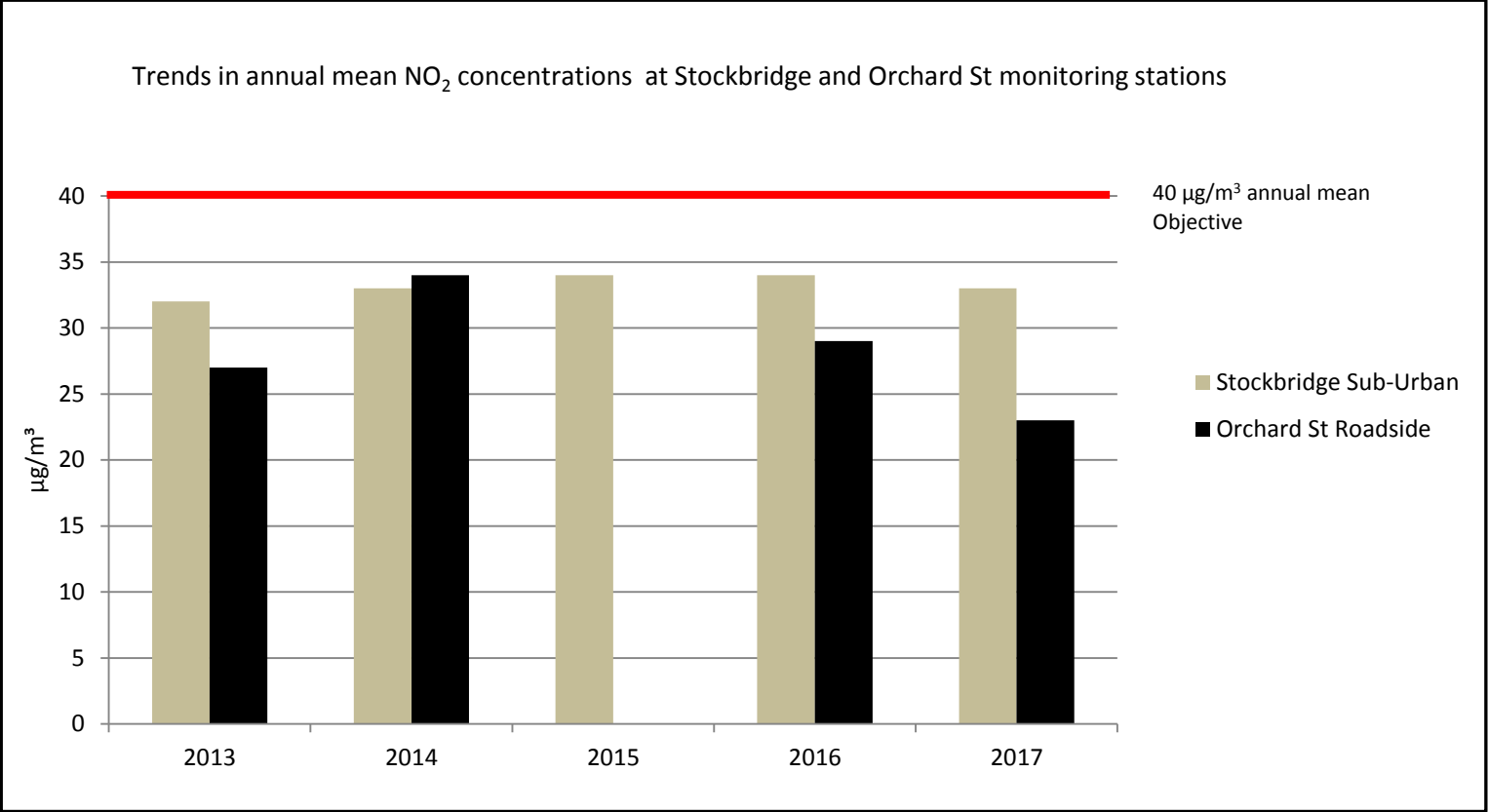## Figure A.1 – Trends in Annual Mean NO_2 Concentrations

Trends in annual mean NO_2 concentrations at Stockbridge and Orchard St monitoring stations

40 µg/m³ annual mean Objective

■ Stockbridge Sub-Urban
■ Orchard St Roadside

µg/m³

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 2017 (%) [2]	NO$_2$ 1-Hour Means > 200µg/m^3 [3]				
					2013	2014	2015	2016	2017
CI1	Suburban	Automatic		99	0	0	0	0	0
CI4	Roadside	Automatic		100	0	0	x	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.

Figure A.2 – Trends in Number of NO$_2$ 1-Hour Means > 200µg/m^3 (100ppb)

There have been no 1 hour mean concentrations that exceed the 200µg/m^3 (100ppb) Objective in 2017 at either monitoring station
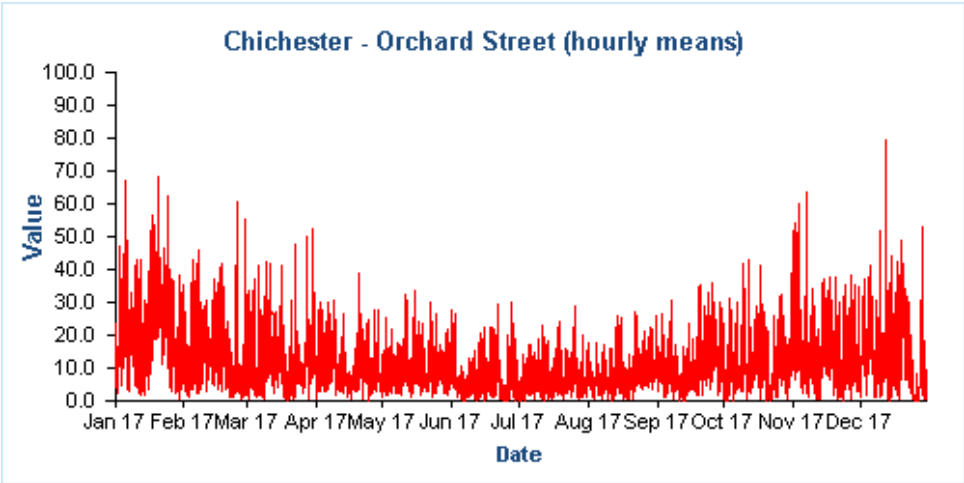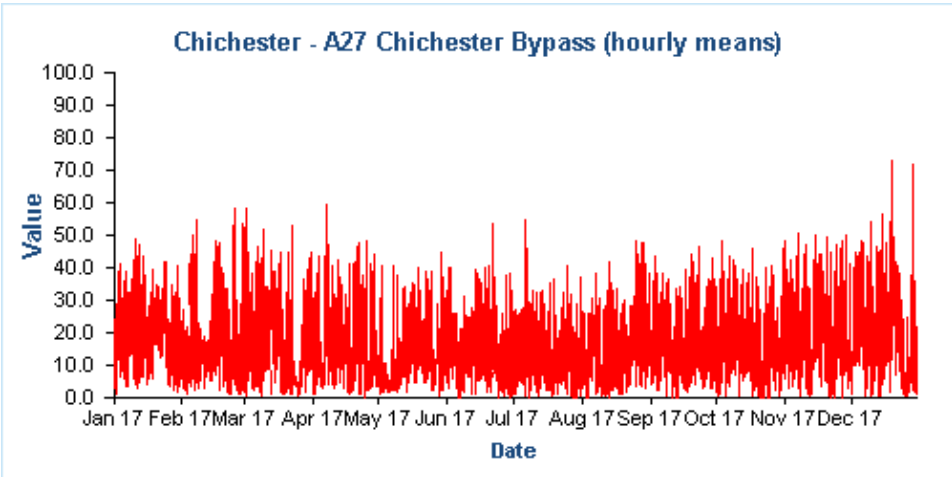
Values on the y axis are expressed as parts per billion (ppb)

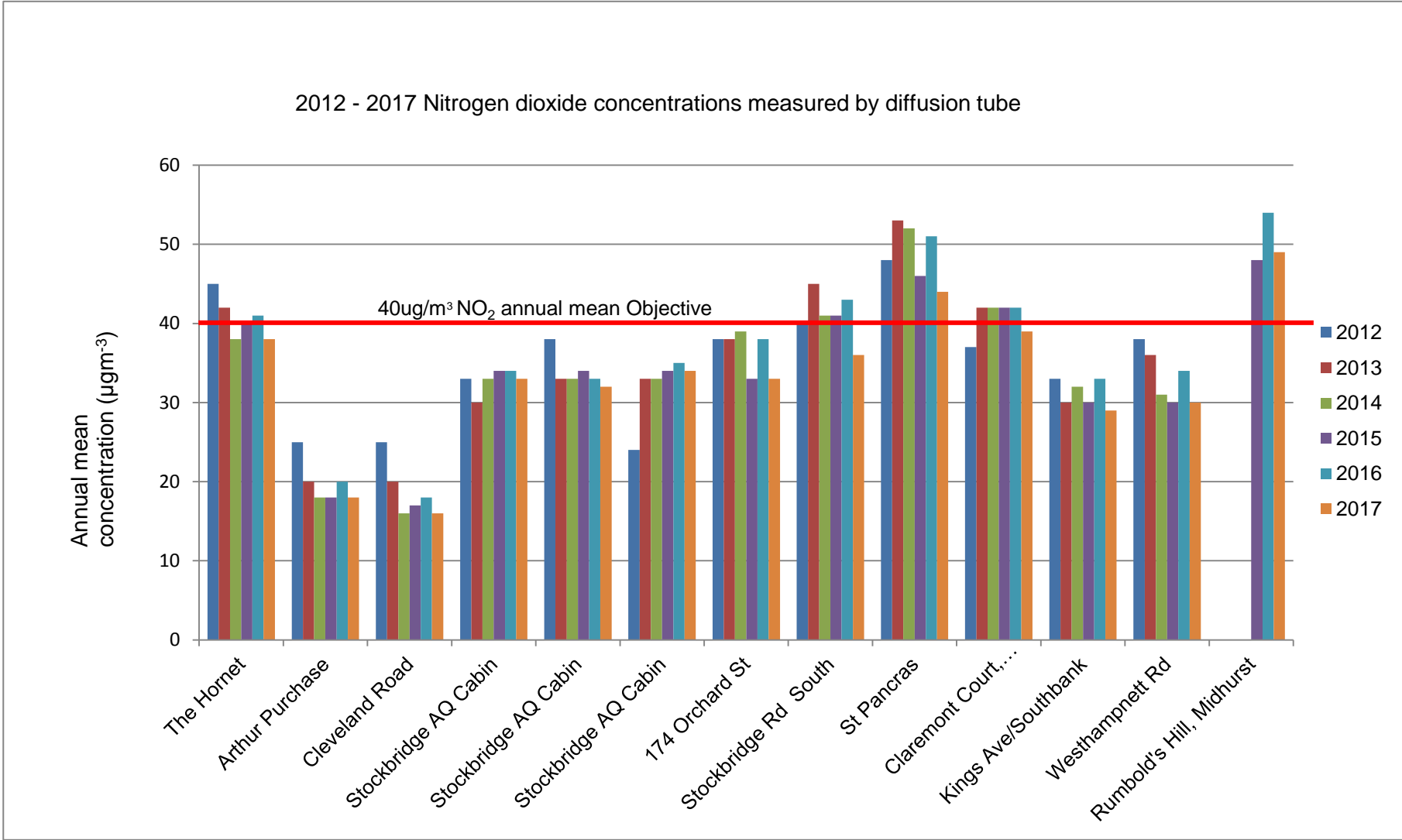**Figure A.3 - Trends in NO$_2$ diffusion tubes 2012 – 2017**

2012 - 2017 Nitrogen dioxide concentrations measured by diffusion tube

Table A.5 – Annual Mean PM$_{10}$ Monitoring Results at Stockbridge monitoring station

Site ID	Site Type	Valid Data Capture for Monitoring Period (%) [1]	Valid Data Capture 2017 (%) [2]	PM$_{10}$ Annual Mean Concentration (μg/m^3) [3]				
				2013	2014	2015	2016	2017
CI1	Suburban		97	20	20	21	20	19

Notes:

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

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

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

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

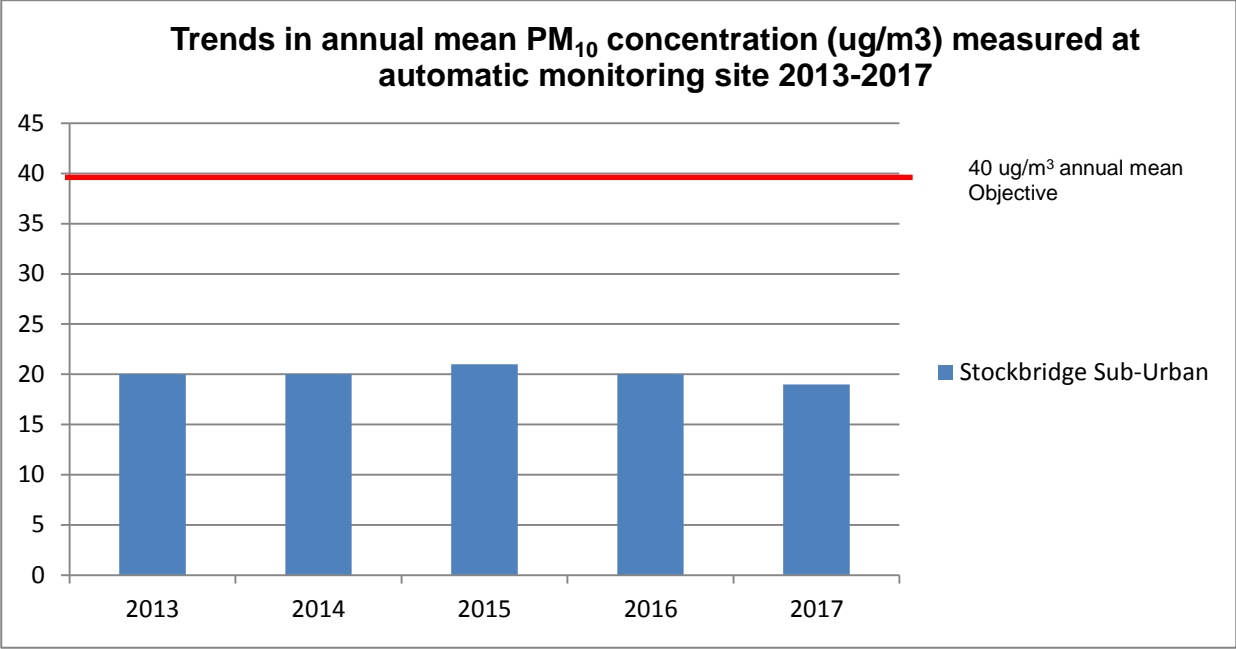**Figure A.4 – Trends in Annual Mean PM$_{10}$ Concentrations at Stockbridge monitoring station**

Trends in annual mean PM$_{10}$ concentration (ug/m3) measured at automatic monitoring site 2013-2017

40 ug/m^3 annual mean Objective

■ Stockbridge Sub-Urban

Table A.6 – 24-Hour Mean PM$_{10}$ Monitoring Results at Stockbridge monitoring station

| Site ID	Site Type	Valid Data Capture for Monitoring Period (%) [1]	Valid Data Capture 2017 (%) [2]	PM$_{10}$ 24-Hour Means > 50µg/m^3 [3]				
				2013	2014	2015	2016	2017
CI1	Suburban		97	1	2	3	2	1

Notes:

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

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

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

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

Figure A.5 – Trends in Number of 24-Hour Mean PM$_{10}$ Results >50µg/m^3
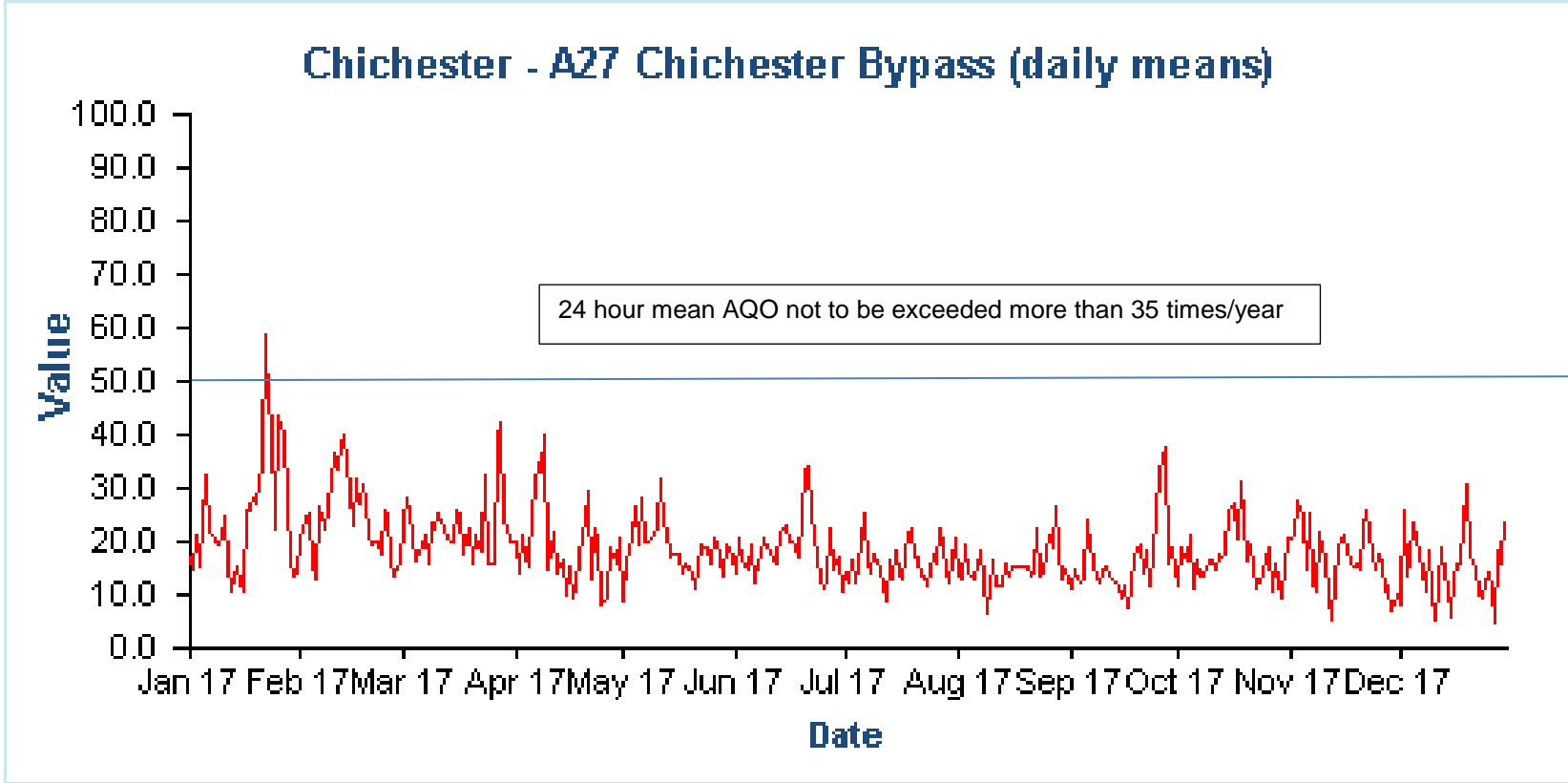
Values on the y axis are expressed as microgrammes per cubic metre (µg/m^3)

Appendix B: Full Monthly Diffusion Tube Results for 2017

Table B.1 – NO$_2$ Monthly Diffusion Tube Results - 2017

| Site ID | NO$_2$ Mean Concentrations (µg/m^3) | | | | | | | | | | | | Annual Mean | | |
	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Raw Data	Bias Adjusted (**0.933**) and Annualised [1]	Distance Corrected to Nearest Exposure ([2])
1	38.23	34.70	31.14	30.56	27.03	30.47	32.79	27.67	31.63	22.22	35.10	34.96	31.37	29.29	22.7
2	45.24	38.36	38.48	40.89	38.84	44.42	45.16	40.36	40.13	41.96	44.35	43.76	41.83	39.04	39.04
3	38.11	34.46	40.61	34.29	28.00	35.07	34.35	34.51	34.26	37.21	37.41	38.70	35.58	33.21	n/a
4	38.83	35.86	35.49	35.00	29.80	34.30	34.98	34.16	33.30	20.84	37.05	39.50	34.09	31.82	n/a
5	39.47	36.80	39.37	34.82	25.98	36.58	41.01	33.80	31.64	38.75	38.39	40.02	36.39	33.96	n/a
6	52.21	42.41	39.04	38.57	37.20	33.95	37.41	34.19	34.06	33.70	44.00	41.99	39.06	36.46	24.3
7	14.70	22.68	16.49	14.74	13.53	13.21	12.73	11.62	15.64	16.49	22.26	26.13	16.69	15.57	n/a
8	43.93	37.55	30.32	29.15	28.19	27.19	31.04	26.31	18.93	34.42	40.74	36.53	32.02	29.89	27.8
9	54.53	39.52	36.33	41.68	39.43	33.06	36.02	33.79	39.50	37.82	51.95	48.94	41.05	38.31	38.31
10	53.36	49.36	47.20	48.33	46.84	49.34	42.62	44.50	48.85	50.89	40.55	46.86	47.39	**44.24**	**44.24**
11	29.37	24.44	18.22	17.28	13.13	13.63	14.36	14.56	18.64	19.38	24.51	23.81	19.28	18.00	n/a
12	50.71	42.36	34.22	33.50	32.21	34.98	27.64	26.82	28.81	36.21	36.76	34.31	34.88	32.56	32.56
13	59.58	48.63	53.22	48.84	42.04	A	58.40	47.16	54.49	48.52	57.14	54.57	52.06	**48.59**	**46.5**

n/a – where bias adjusted mean does not exceed the annual mean objective of 40µg/m^3 and the site is background or suburban, no distance correction has been calculated.

☒ **Local bias adjustment factor used**

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

Notes:

Exceedances of the NO$_2$ annual mean objective of 40µg/m^3 are shown in **bold**.

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

(2) Distance corrected to nearest relevant public exposure.

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

Significant changes to sources
No significant changes noted

Monitoring campaigns in the District
None undertaken

Additional Evidence gathered
None noted

QA/QC of Automatic Monitoring
All sites are visited by an officer for calibration and filter changes on a bi-monthly basis. CDC has a service agreement with a third party who provides site maintenance, auditing, regular inspections and 48-hour callout response if problems are encountered at the sites. Data is downloaded from all sites twice daily by the ERG[4] and is available to download online[5]. CDC has a contract with ERG to calibrate and ratify all real time data collected. ERG applies a VCM correction to the PM_{10} data and a screen shot of the correction is shown below. The graph shows the CDC TEOM data in blue and the VCM correction as a dotted red line.

VCM Sites
Reigate and Banstead 1 co-location
Greenwich - Blackheath
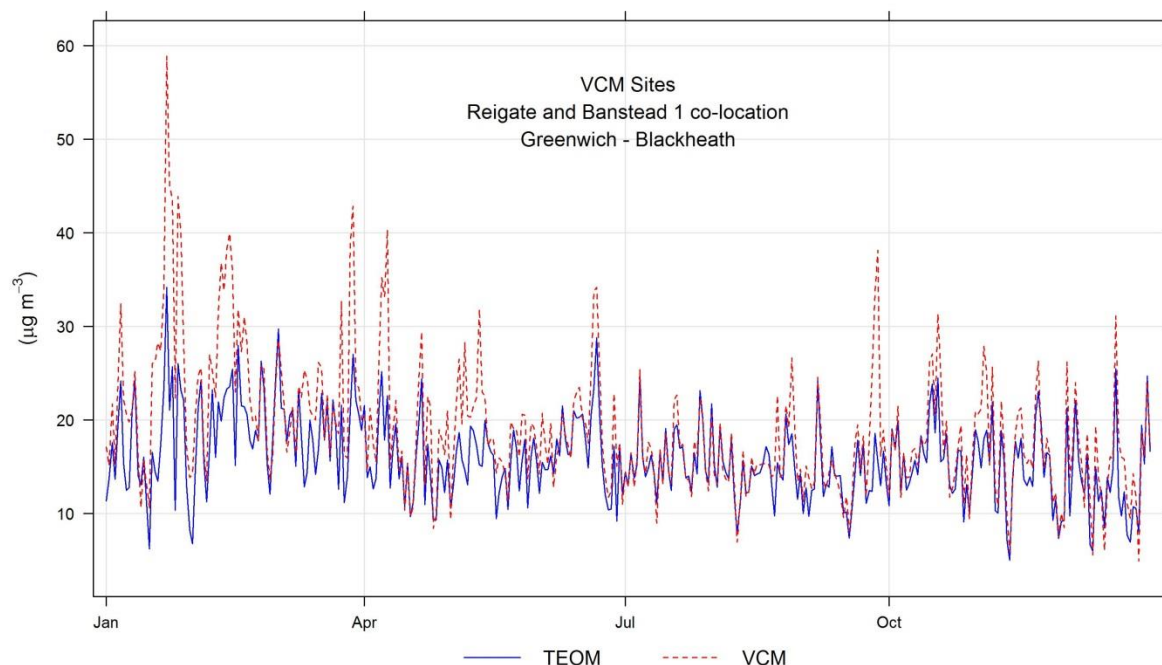
For more information please contact the ERG helpdesk[6].

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[4] The Environmental Research Group (ERG), part of the School of Biomedical and Health Sciences at King's College London, a leading provider of air quality information and research in the UK.
[5] www.sussex-air.net
[6] Contact ERG on 020 7848 4022

QA/QC Diffusion Tube Data

Chichester District Council uses Gradko Environmental for supplying and analysing the diffusion tubes. The tube preparation method is 50% TEA/Acetone and ANA UKAS Method GLM 7 and GLM 9. CDC uses a local bias adjustment factor.

Factor from Local Co-location Studies

Three diffusion tubes are co-located with the Stockbridge monitoring station. These are used to calculate a bias-correction for the NO_2 diffusion tubes. The automatic monitoring station's data is quality assured by ERG. The annual average concentrations from the three co-located tubes are compared to the annual average real time data derived concentration for the same period. A factor can then be derived to correct all other diffusion tube data. The 'bias correction' calculation is as per the table below.

Annual mean (automatic monitor) [a,b,c]	= 33 µg/m³
Annual average mean (NO_2 diffusion tubes) [d]	= 35.4 µg/m³
Correction factor calculation	= 33/35.4 0.933

[a] 1st January 2017 – 31st December 2017
[b] Real-time data capture for 2017 = 99%
[c] All data ratified by Environmental Research Group
[d] Diffusion tube data capture for the period Jan - Dec = 100%

QA/QC of Diffusion Tube Monitoring

CDC has confirmed by checking the web site provided that Gradko Environmental uses the Workplace Scheme for Proficiency (WASP) indicator rating for quality control. The result for 2017 was Satisfactory (Z score +/- 2) for 100% of results submitted. For more information please contact Gradko Environmental[7].

Distance calculations for roadside diffusion sites where monitoring is not carried out at a location of relevant exposure

Using the NO_2 fall off with distance calculator on the LAQM website, the following sites have had a distance calculation applied:

---

[7] Contact Gradko on 01962 860331

Stockbridge Road South

Enter data into the pink cells

Step 1	How far from the KERB was your measurement made (in metres)?	2	metres
Step 2	How far from the KERB is your receptor (in metres)?	16	metres
Step 3	What is the local annual mean background NO_2 concentration (in $\mu g/m^3$)?	11.96	$\mu g/m^3$
Step 4	What is your measured annual mean NO_2 concentration (in $\mu g/m^3$)?	36	$\mu g/m^3$
Result	The predicted annual mean NO_2 concentration (in $\mu g/m^3$) at your receptor	24.3	$\mu g/m^3$

Westhampnett Road

Enter data into the pink cells

Step 1	How far from the KERB was your measurement made (in metres)?	1.65	metres
Step 2	How far from the KERB is your receptor (in metres)?	3	metres
Step 3	What is the local annual mean background NO_2 concentration (in $\mu g/m^3$)?	13.57	$\mu g/m^3$
Step 4	What is your measured annual mean NO_2 concentration (in $\mu g/m^3$)?	30	$\mu g/m^3$
Result	The predicted annual mean NO_2 concentration (in $\mu g/m^3$) at your receptor	27.8	$\mu g/m^3$

Rumbold's Hill, Midhurst

Step 1	**How far from the KERB was your measurement made (in metres)?**	1.5	metres
Step 2	**How far from the KERB is your receptor (in metres)?**	2	metres
Step 3	**What is the local annual mean background NO$_2$ concentration (in µg/m^3)?**	8.87	µg/m^3
Step 4	**What is your measured annual mean NO$_2$ concentration (in µg/m^3)?**	49	µg/m^3
Result	**The predicted annual mean NO$_2$ concentration (in µg/m^3) at your receptor**	**46.5**	µg/m^3

Enter data into the pink cells

King's Avenue/Southbank

|			
Step 1	**How far from the KERB was your measurement made (in metres)?**	2.25	metres
Step 2	**How far from the KERB is your receptor (in metres)?**	11	metres
Step 3	**What is the local annual mean background NO$_2$ concentration (in µg/m^3)?**	11.96	µg/m^3
Step 4	**What is your measured annual mean NO$_2$ concentration (in µg/m^3)?**	29.29	µg/m^3
Result	**The predicted annual mean NO$_2$ concentration (in µg/m^3) at your receptor**	22.7	µg/m^3

Enter data into the pink cells

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

Figure D.1 Stockbridge Roundabout AQMA and automatic and diffusion tube locations
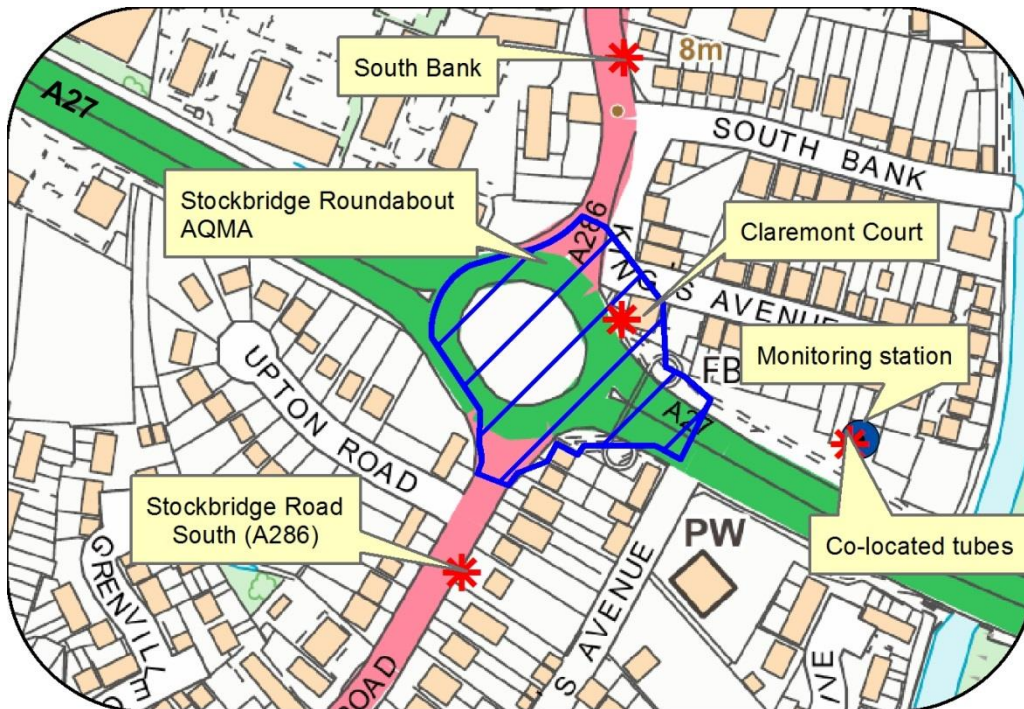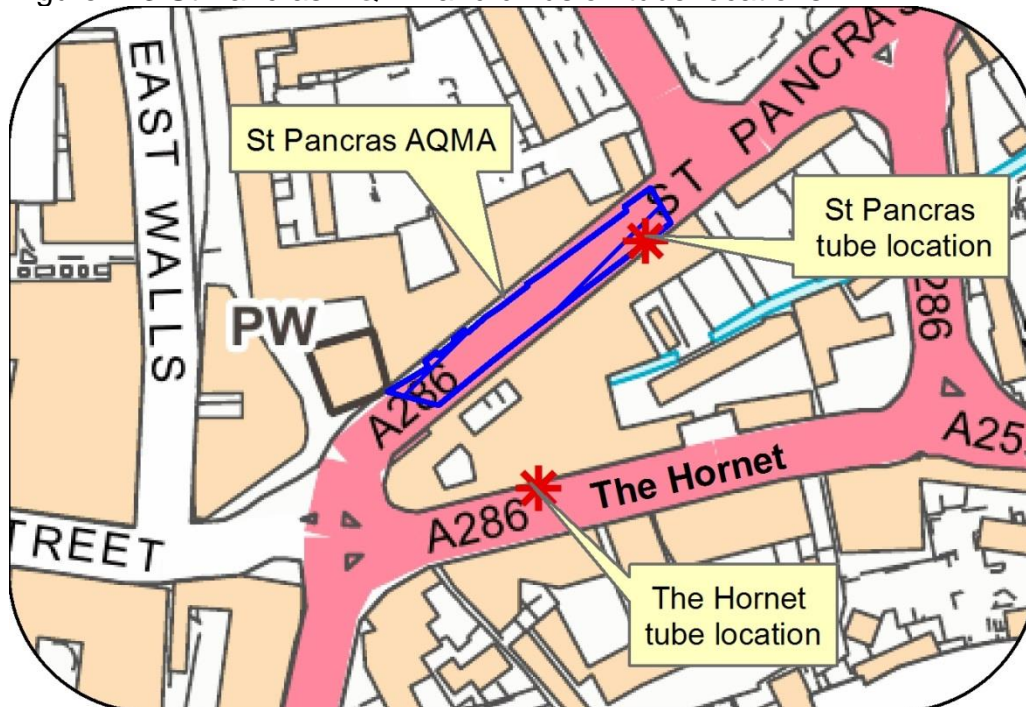

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Figure D.2 Orchard Street AQMA and automatic and diffusion tube locations
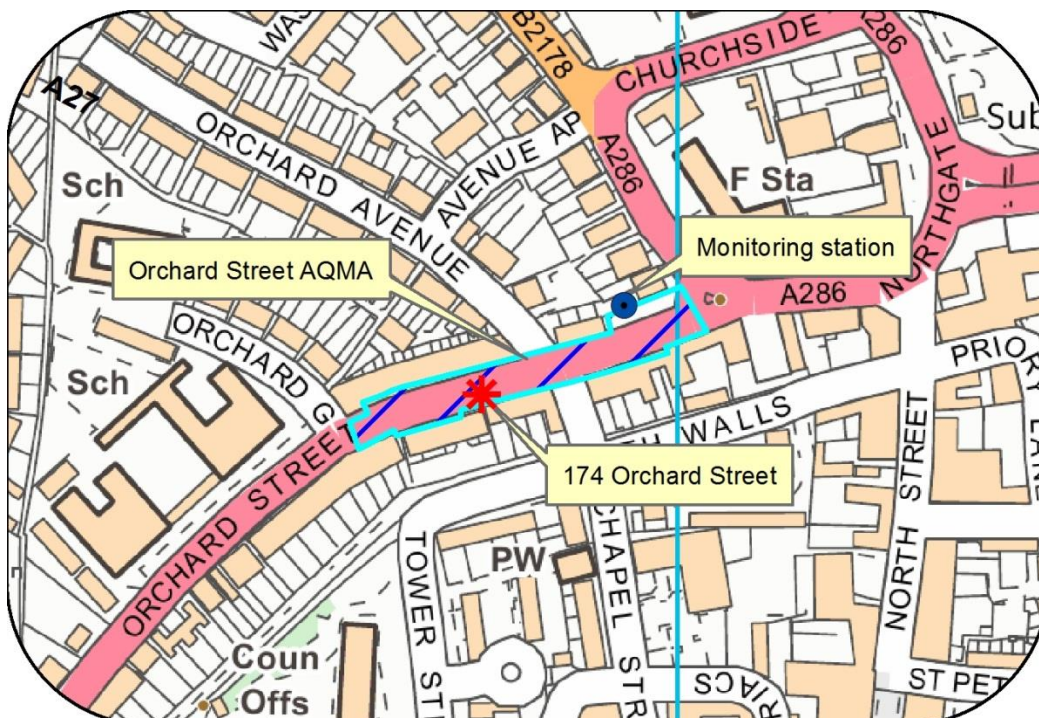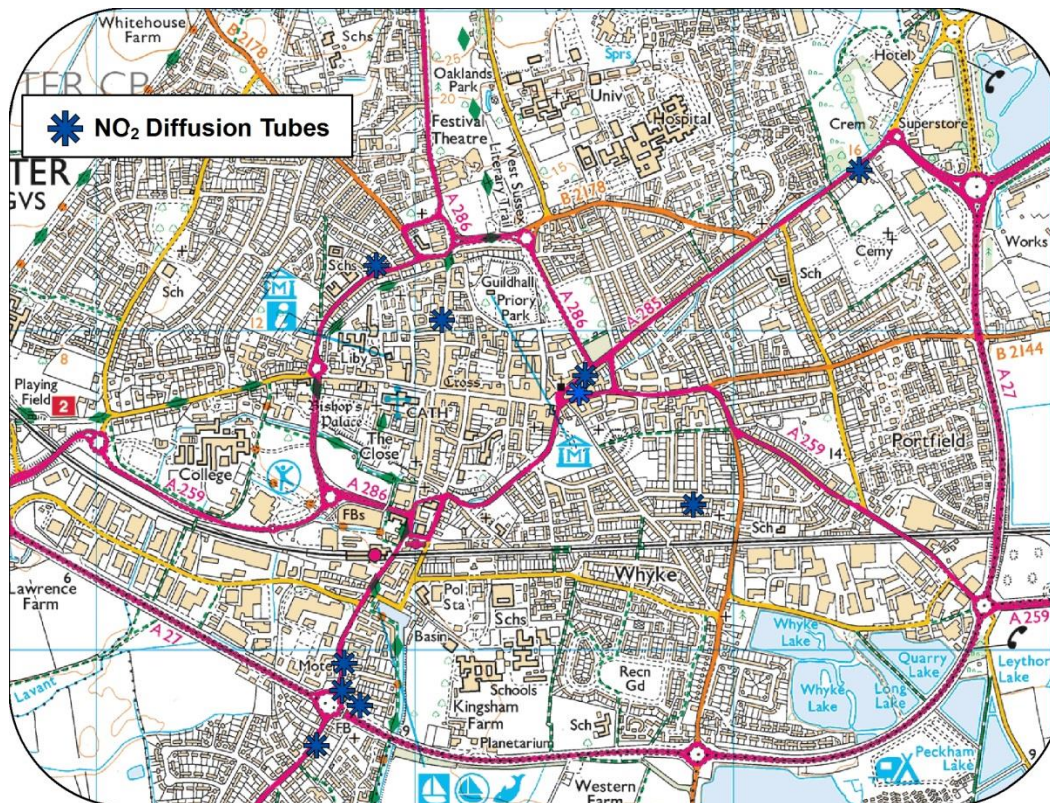

© Crown Copyright and database right 2017. Ordnance Survey 100018803

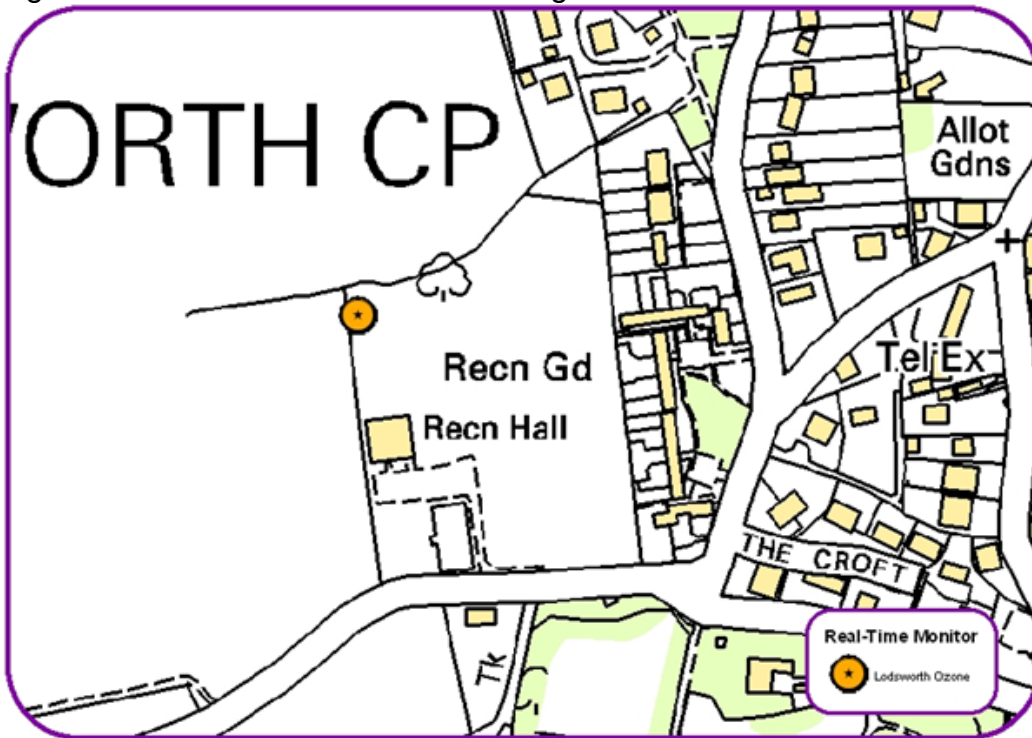Figure D.3 St Pancras AQMA and diffusion tube locations

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Figure D.4 Map of diffusion tube sites in Chichester
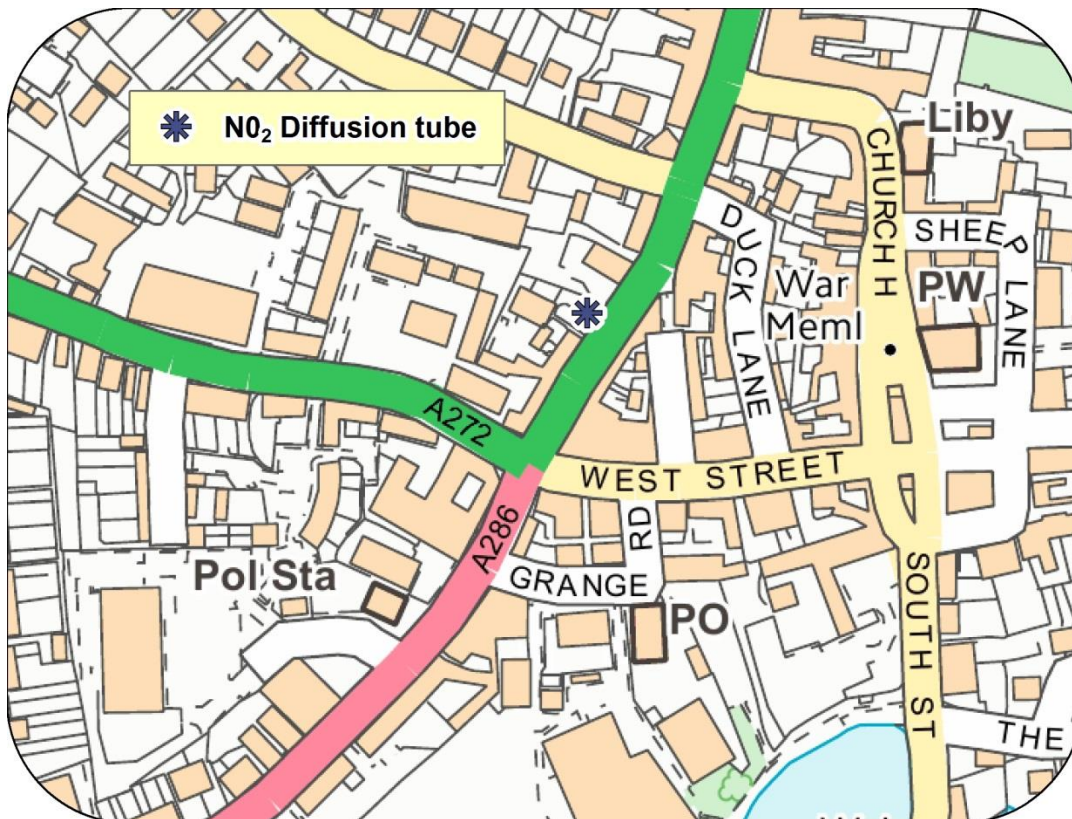

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Figure D.5 Location of ozone monitoring station in Lodsworth

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Figure D.6 Map of diffusion tube site at Rumbold's Hill, Midhurst

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Appendix E: Summary of Air Quality Objectives in England

Table E.1 – Air Quality Objectives in England

Pollutant	Air Quality Objective[8]	
	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

---

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

Glossary of Terms

Abbreviation	Description
AQAP	Air Quality Action Plan - A detailed description of measures, outcomes, achievement dates and implementation methods, showing how the local authority intends to achieve air quality limit values'
AQMA	Air Quality Management Area – An area where air pollutant concentrations exceed / are likely to exceed the relevant air quality objectives. AQMAs are declared for specific pollutants and objectives
ASR	Air quality Annual Status Report
CCTV	Closed circuit television
CDC	Chichester District Council
Defra	Department for Environment, Food and Rural Affairs
Dft	Department for Transport
DMRB	Design Manual for Roads and Bridges – Air quality screening tool produced by Highways England
EU	European Union
EV	Electric vehicle
FDMS	Filter Dynamics Measurement System
HE	Highways England
LAQM	Local Air Quality Management
LES	Low Emissions Strategy
LSTF	Local Sustainable Transport Fund
MOVA	Microprocessor Optimised Vehicle Actuation
NHS	National Health Service
NO_2	Nitrogen Dioxide
NO_x	Nitrogen Oxides

OLEV	Office of Low Emission Vehicles
O_3	Ozone
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
RTPI	Real Time Passenger Information
SAQP	Sussex Air Quality Partnership
SO_2	Sulphur Dioxide
UTC	Urban Transport Controls
VCM	Volatile correction measurement
VMS	Variable message signing
WSCC	West Sussex County Council

References

Towards Better Air Quality: An Air Quality Action Plan for Chichester District 2015-20 produced by Chichester District Council

West Sussex Walking and Cycling Strategy 2016 – 2026 produced by WSCC