Fareham and Gosport Environmental Health Partnership

FAREHAM
BOROUGH COUNCIL

GOSPORT
Borough Council

Working in partnership

2018 Air Quality Annual Status Report (ASR)

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

June, 2018

Fareham and Gosport Environmental Health Partnership

Local Authority Officer	Ian Rickman
Department	Environmental Health
Address	Civic Offices Civic Way Fareham Hampshire PO16 7AZ
Telephone	01329 824773
E-mail	irickman@fareham.gov.uk
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Executive Summary: Air Quality in Our Area

Air Quality in Fareham and Gosport

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].

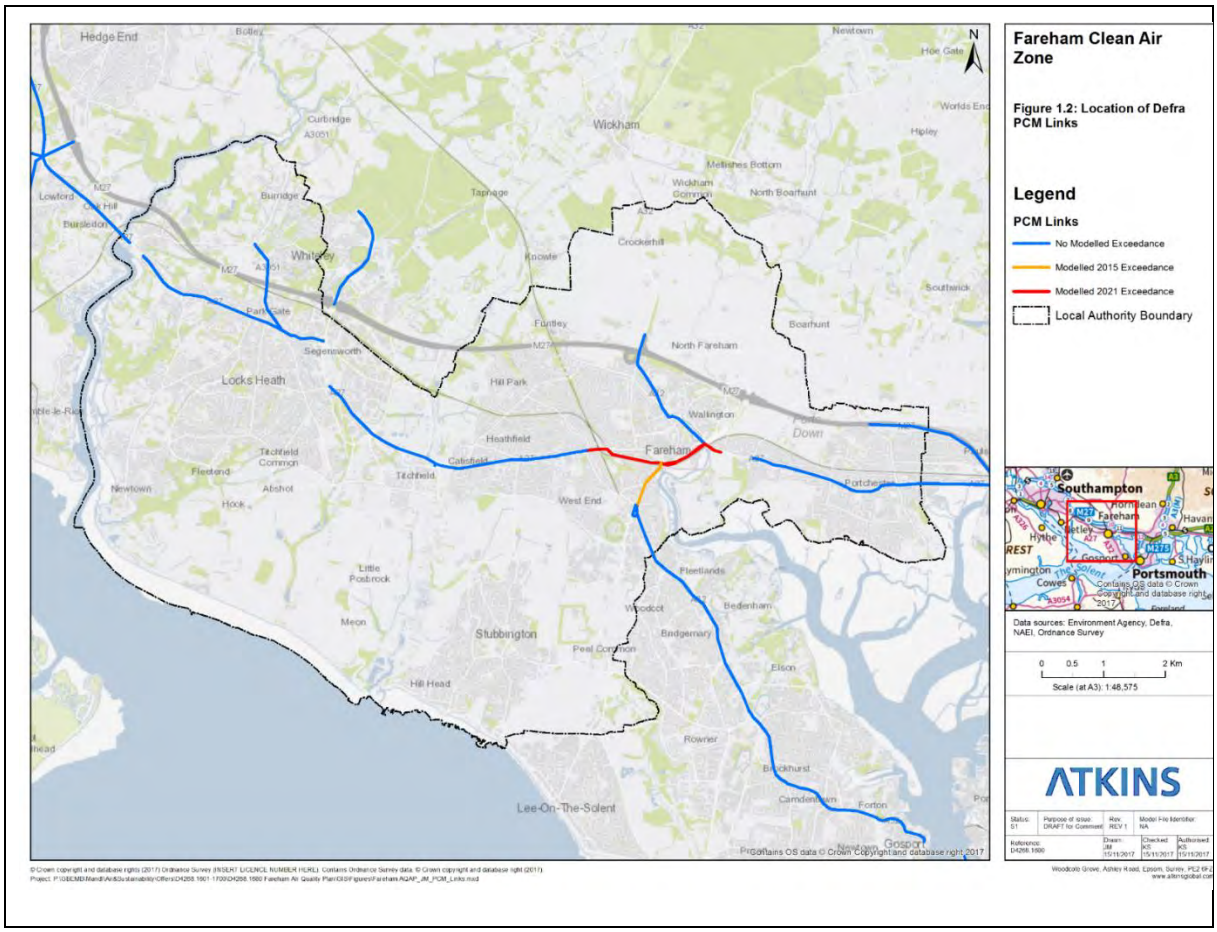
Fareham Borough Council has declared two Air Quality Management Areas (AQMAs) due to measured and modelled exceedances of the annual mean nitrogen dioxide (NO_2) Air Quality Strategy (AQS) objective: Gosport Road, declared in 2006; and Portland Street, declared in 2007. The boundaries of both of these AQMAs were extended in November 2017, following a Detailed Assessment reported within Fareham & Gosport Borough Council's 2016 Air Quality Annual Status Report (ASR)[4], which predicted exceedances of the NO_2 annual mean AQS objective outside the original AQMA boundaries. The current AQMAs in Fareham can be viewed online[5,6]. Gosport Borough Council has not declared any AQMAs.

An Air Quality Action Plan (AQAP) was produced in 2008 following declaration of the two AQMAs in Fareham. This outlined measures and actions designed to improve the NO_2 concentrations in these areas. The AQAP actions have been updated on a regular basis, initially through the Council's air quality steering group and more recently by direct liaison with representatives of Hampshire County Council's public transport and road network departments.

[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
[4] http://www.fareham.gov.uk/PDF/licencing_and_inspections/HCU-170130_FarehamAndGosport16.pdf
[5] http://www.fareham.gov.uk/PDF/licencing_and_inspections/AQMAMap_GosportRoad.pdf
[6] http://www.fareham.gov.uk/PDF/licencing_and_inspections/AQMAMap_PortlandStreet.pdf

Monitoring of both NO_2 and particulate matter (PM_{10}) undertaken in Fareham and Gosport in 2017 indicates that there were no measured exceedances of AQS objectives for either pollutant at locations of relevant exposure.

Fareham Borough Council was identified within the "UK Plan for Tackling Roadside NO_2 Concentrations"[7], published in July 2017, as being a local authority where Defra's Pollution Climate Mapping (PCM) model indicates that the annual mean NO_2 Limit Value (40 µg/m³) would be exceeded in 2021. As a result, Fareham Borough Council is required to develop a "Local NO_2 Plan" to achieve compliance with the annual mean EU limit value for NO_2 in the shortest possible time. This work has been prioritised during 2018. As such, Fareham Borough Council's AQAP will be updated once the specific measures identified within Fareham's "Local NO_2 Plan" have been agreed and funded.



[7] Defra. UK Plan for Tackling Roadside NO2 Concentrations. July 2017

Actions to Improve Air Quality

An update on progress regarding measures included in the AQAP is provided in Table 2.2. Specific updates are as follows:

- Development of a technical working group to develop Fareham Borough Council's "Local NO_2 Plan", including representatives from Fareham Borough Council, Gosport Borough Council, Hampshire County Council and First Bus.
- Fareham Borough Council has amended taxi licensing conditions such that licenses will no longer be granted to diesel vehicles which do not meet the Euro 6 emission standard. Fareham Borough Council has also secured central government funding for a taxi replacement initiative scheme, to replace pre-Euro 6 diesel vehicles with ultra-low emission vehicles or Euro 5/6 petrol hybrids.
- Extension of the Eclipse Busway Bus Rapid Transit (BRT) is underway. The extension will follow a further section of disused railway corridor 1 km south into Gosport.
- Full funding has been secured for the Stubbington Bypass and work can commence to progress the scheme towards delivery. Work is likely to start on the ground in 2019 and will take approximately two years to complete.
- Publication of Draft Local Plan[8] (October 2017), including policies requiring new development to promote sustainable and active travel, positively contribute to delivery of AQAP, minimise emissions and reduce transport impacts on local air quality.

Conclusions and Priorities

Monitoring of NO_2 and PM_{10} is undertaken within Fareham and Gosport using continuous automatic monitors and passive NO_2 diffusion tubes. There are currently three continuous monitors and a total of 47 diffusion tube locations within the monitoring network.

Where data is available for more than one year, monitoring results at the majority of sites in Fareham and Gosport in 2017 show a decline in annual mean NO_2

[8] Fareham Borough Council. Draft Fareham Local Plan 2036. October 2017

concentrations. In 2017, the annual and 1-hour mean AQS objectives were met at all monitoring sites in both Gosport and Fareham, once measured concentrations were adjusted to represent those at the nearest locations of relevant exposure (e.g. residential properties).

Fareham Borough Council was identified as one of the local authorities required to produce a "Local NO_2 Plan" to achieve compliance with the annual mean NO_2 EU Limit Value in the shortest possible time. This is the priority for work during 2018. Fareham's Air Quality Action Plan will be updated once this work is complete.

The annual mean and 24-hour mean AQS objectives for PM_{10} continue to be met at the Tichborne Way monitoring station in Gosport. The measured annual mean PM_{10} concentration at this site remains low compared to the 40 µg/m³ annual mean objective, with the highest annual mean concentration recorded during 2013-2017 being 24 µg/m³ in 2014.

Local Engagement and How to get Involved

More information about air quality can be obtained via the following links:

- https://www.fareham.gov.uk/licensing_and_inspections/air_quality/intro.aspx
- http://www.airqualityengland.co.uk/
- https://www.gosport.gov.uk/sections/environment/environmental-health/housing-pollution/environmental-monitoring/air-quality/

A leaflet has been produced in conjunction with the National Health Service that provides information in relation to different air pollutants, the health effects of specific

air pollutants and what can be done to combat poor air quality. The leaflet is available at: http://www.fareham.gov.uk/pdf/licencing_and_inspections/Airqualityleaflet.pdf.

If residents have a concern regarding air pollution outside their home, an NO_2 diffusion tube can be fitted to monitor pollution concentrations outside their homes over a number of months.

There are a number of ways that individuals are able to get involved and help improve air quality in the local area. Some examples are shown below:

- **Walk or cycle:** Replacing a car journey by walking or cycling helps reduce traffic and traffic emissions and has health and mental health benefits. For example, walking, scooting, or cycling on school journeys could save money, improve your health and wellbeing whilst helping to reduce congestion and pollution in the local area. Hampshire County Council has information on a number of initiatives (Active Travel: https://myjourneyhampshire.com/; Schools: https://myjourneyhampshire.com/parent-information)
- **Take public transport or car share:** For longer journeys, try using public transport or car share? The Eclipse network links Fareham and Gosport with Portsmouth and other key towns and destinations, including a dedicated off-road busway between Redlands Lane in Fareham and Tichbourne Way in Gosport (https://www.firstgroup.com/portsmouth-fareham-gosport/routes-and-maps/eclipse).
- **When using a car:**
    - Ensure your tyre pressures are correct – lower tyre pressure increases fuel use and emissions;
    - Consider whether you need to use air conditioning – using it increases fuel consumption by up to 30%;
    - If you need to buy a car, consider its fuel economy and emissions – ultra-low emission vehicles consume less fuel and produce fewer emissions.
- **Buy local:** Transporting goods a long way creates more air pollution than transporting them short distances. Try to buy locally produced goods and eat local foods that are in season.

- **If you have an open fire, or wood-burning stove:** consider how you are using it, and whether you can take steps to reduce emissions. Defra has produced a wood-burning guide providing advice on how to reduce emissions whilst saving money on fuel and maintenance costs (https://consult.defra.gov.uk/airquality/domestic-burning-of-wood-and-coal/supporting_documents/open%20fires%20wood%20burning%20stoves%20%20guideA4update12Oct.pdf).

Table of Contents

List of Tables

List of Figures

1 Local Air Quality Management

This report provides an overview of air quality in Fareham and Gosport 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 Fareham and Gosport Borough Councils 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 Fareham Borough 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 https://uk-air.defra.gov.uk/aqma/local-authorities?la_id=103. Alternatively, see Appendix D, which provides a map of air quality monitoring locations in relation to the AQMAs.

It should be noted that the boundaries of both of Fareham Borough Council's AQMAs were extended in November 2017, following a Detailed Assessment reported within the 2016 ASR[9], which predicted exceedances of the NO_2 annual mean AQS objective outside the original AQMA boundaries. At the time of writing this report however, the AQMA boundaries shown on the Defra website (see link above) are yet to be updated to reflect these updated AQMA boundaries. Figures showing the latest AQMA boundaries can however be found on the council's website[5,6].

Gosport Borough Council does not currently have any AQMAs. For reference, a map of Gosport Borough Council's monitoring locations is available in Appendix D.

[9] http://www.fareham.gov.uk/PDF/licencing_and_inspections/AirQualityReport_FarehamAndGosport2017.pdf

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
Portland Street AQMA	Declared 01/12/2007, Amended 01/11/2017	NO_2 Annual Mean	Fareham	An area encompassing residential properties and the Sacred Heart Catholic Church on Portland Street and the southern end of Hartland Road Fareham.	NO	45.3	µg/m^3	34.4	µg/m^3	Air Quality Action Plan, Gosport and Portland Street, Fareham	2008	www.fareham.gov.uk/PDF/licencing_and_inspections/aqap-gosportrd-portlandst.pdf
Gosport Road AQMA	Declared 01/04/2006, Amended 01/11/2017	NO_2 Annual Mean	Fareham	An area encompassing the junction of Gosport Road, Redlands Lane and Newgate Lane Fareham and the surrounding area up to the Quay Street roundabout Fareham.	NO	47.3	µg/m^3	34.5	µg/m^3	Air Quality Action Plan, Gosport and Portland Street, Fareham	2008	www.fareham.gov.uk/PDF/licencing_and_inspections/aqap-gosportrd-portlandst.pdf

☐ **Fareham and Gosport confirm the information on UK-Air regarding their AQMA(s) is up to date**
[At time of submission, the text information is correct on UK-Air is correct, but the maps do not show the revised boundaries of the AQMAs.]

2.2 Progress and Impact of Measures to address Air Quality in Fareham and Gosport

Defra's appraisal of last year's ASR confirmed that the conclusions reached were acceptable for all sources and pollutants. The key comments are summarised below.

- It was noted that Fareham Borough Council's priority for 2017 was to update the AQAP to reflect the amended boundaries of the Gosport Road and Portland Street AQMAs. Defra recommended that measures to improve air quality within these areas were also updated, alongside estimates of the level of further emission reductions required, with a view to developing Key Performance Indicators (KPIs).
- Defra recommended that Fareham and Gosport's monitoring strategy be reviewed, on the basis of the amendments to AQMA boundaries, and in particular to understand why air quality has improved significantly in some areas in Fareham, but increased in Gosport.

Fareham Borough Council was identified within the "UK Plan for Tackling Roadside NO_2 Concentrations", published in July 2017, as being a local authority where Defra's Pollution Climate Mapping (PCM) model indicates that the annual mean NO_2 Limit Value (40 µg/m³) would be exceeded in 2021. As a result, Fareham Borough Council is required to develop a "Local NO_2 Plan" to achieve compliance with the annual mean EU limit value for NO_2 in the shortest possible time. This work has been prioritised during 2018. As such, Fareham Borough Council's AQAP will be updated once the specific measures identified within Fareham's "Local NO_2 Plan" have been agreed and funded.

Fareham and Gosport's air quality monitoring strategy is currently being reviewed in light of the evidence generated as part of the development of Fareham's "Local NO_2 Plan" outlined above.

The proposed Stubbington Bypass[10] has the potential to affect air quality in both Fareham and Gosport (both positively and negatively) and is an important consideration within Fareham's "Local NO_2 Plan". Since securing Planning Permission in October 2015, Hampshire County Council has been actively seeking funding for the

[10] https://www.hants.gov.uk/transport/transportschemes/stubbingtonbypass

Stubbington Bypass most notably from the Local Growth Fund via the Solent Local Enterprise Partnership (LEP). A funding contribution of £8.5m was approved by the County Council at a meeting in September 2016. In addition, in February 2017 the Government announced that £25.7 million of funding has been awarded from the Local Growth Fund 3 towards the delivery of the scheme. This means that full funding has now been secured for the Stubbington Bypass and work can now commence to progress the scheme towards delivery.

Before delivery can commence however, Hampshire County Council need to complete the detailed design of the scheme, undertake advance ecological and other environmental works and acquire the land needed to build the scheme. Work is likely to start on the ground in 2019, and will take approximately two years to complete.

Fareham and Gosport Borough Councils have 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 the 2008 AQAP, the 2017 ASR and previous air quality annual reports that can be viewed at: www.fareham.gov.uk/licensing_and_inspections/air_quality/historicalairqualityinfo.aspx. Key completed measures are:

- established a technical working group with Hampshire County Council and First Bus to develop Fareham Borough Council's "Local NO_2 Plan";
- amended taxi licensing conditions such that licenses will no longer be granted to diesel vehicles which do not meet the Euro 6 emission standard;
- secured Central Government funding for a taxi replacement initiative scheme, to replace pre-Euro 6 diesel vehicles with ultra-low emission vehicles or Euro 5/6 petrol hybrids.

Fareham and Gosport Borough Council's priorities for the coming year are:

- development of "Local NO_2 Plan" to achieve compliance with the annual mean NO_2 EU Limit Value in the shortest possible time. The business case for which is required to be submitted to JAQU before 31st December 2018.

The principal challenges and barriers to implementation of AQAP measures that Fareham and Gosport Borough Councils anticipate facing are funding limitations and a shortage of resources due to the concurrent requirement to develop a "Local NO_2 Plan".

Fareham Borough Council anticipates that the measures stated above and in Table 2.2, coupled with additional measures to be identified through their "Local NO_2 Plan" (currently in development), will ensure that the annual mean NO_2 AQS objective will be achieved in the Portland Street and Gosport Road AQMAs by 2021 at the latest.

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
1a	Formation of technical working group to develop Fareham Borough Council's "Local NO_2 Plan" to comply with the EU Limit Value for NO_2 in the shortest possible time	Policy Guidance and Development Control	Regional Groups Co-ordinating programmes to develop Area wide Strategies to reduce emissions and improve air quality	FBC, HCC, First Bus; Funded by Defra/DfT			Compliance with EU Limit Value for NO_2 in the shortest possible time	Reduction of NO_X emissions	Established a technical working group with HCC and First Bus to develop the "Local NO_2 Plan", in response to the "UK Plan for Tackling Roadside NO_2 Concentrations" published in July 2017. Whilst the Local NO_2 Plan is currently under development, it will be likely to include measures to reduce car journeys through promotion of walking, cycling and public transport. Measures may also include electric vehicle infrastructure, retrofitting buses, taxi replacement incentives (see Action 3) and	2018-2021	

									business engagement.		
3	To review the regulation of private hire and hackney carriage emissions and where appropriate, integrate improvements into the taxi licensing regime	Promoting Low Emission Transport	Taxi Licensing Conditions	FBC			(a) Provision of "Switch off your engine" signage in taxi ranks and bus station; (b) Articles in the taxi and private hire newsletters on air quality issues; (c) Emission-based conditions within taxi licensing; (d) implementation of taxi replacement incentive scheme	Reduction of NO_X emissions	Amendments made to taxi licensing such that licenses will no longer be granted to diesel vehicles which do not meet Euro 6 emission standard. Secured Central Government funding for a taxi replacement initiative scheme, to replace pre-Euro 6 diesel vehicles with ultra-low emission vehicles or Euro 5/6 petrol hybrids	Ongoing	
8	To examine the feasibility of erecting signs to identify the AQMAs	Public Information	Other	FBC			To erect air quality awareness signs along the A32 Gosport Road Fareham by 2010	Reduction of NO_X emissions	Joint project with Friends of the Earth and HCC School Travel Planning team on a project resulted in primary aged school children designing sustainable travel posters for display on lampposts on the A32, Gosport Road AQMA.	2017/18	
9	To work in partnership with the Gosport Transport and Sustainability Partnership to	Promoting Travel Alternatives	Other	GBC			Annual progress against the key measures and timeframes set out in the GTSP (AQAP, 2008).	Reduction of NO_X emissions	Completion of the key schemes set out in the Gosport Transport and Sustainability Partnership. Air	2018/19	

	identify and assist in the delivery of schemes to reduce road congestion on the A32.								Quality and AQMA impacts to be assessed quantitatively where possible.		
10	To assist the Highway Authority in promoting and implementing those schemes identified within the Highway Authority's "Strategic Access to Gosport (2010-2026)" (STAG) transport study for the Gosport peninsula.	Traffic Management	Strategic highway improvements Re-prioritising road space away from cars, including Access management, Selective vehicle priority, bus priority, high vehicle occupancy lane	HCC			Annual progress towards the programmed 19 schemes listed in the study.	Reduction of NO_X emissions	Key road schemes: (i) In Feb 17, the Government announced £25.7 million funding towards delivery of the Stubbington Bypass. This means that full funding has now been secured and work can commence to progress the scheme towards delivery. Work is likely to start on the ground in 2019 and will take approximately two years to complete. (ii) A27 dualling is complete. (iii) A small bypass in Newgate lane is complete. (iv) The Wellborne planning application was submitted to the Council in April 2017. Junction improvements on the M27 have been approved,	Ongoing	

									in preparation for the Wellbourne Development		
15	Provide a bus/rail interchange facility at Fareham rail station	Transport Planning and Infrastructure	Public transport improvements - interchanges stations and services	HCC/TfSH			Provision of a transport interchange at Fareham rail station	Reduction of NO_X emissions	An extra bus lane has been added to enter the railway station from A27. An additional pedestrian exit has also been added from the bus station to the underpass.	2014/2020	
16	To provide a suitable alternative to the light rapid transit system linking Fareham, Gosport and Portsmouth	Promoting Travel Alternatives	Other	HCC/TfSH			Annual progress against the key measures and timeframes set out for the BRT phases	Reduction of NO_X emissions	The Eclipse Busway extension is currently under construction and will extend the existing BRT 1 km further into Gosport	Ongoing	
19a	Increase numbers of people using local bus services	Transport Planning and Infrastructure	Other	HCC/First			Annual number of passenger trips using BRT services	Reduction of NO_X emissions	The 1 km extension of the Eclipse Busway (currently under construction) will target new passengers and increase ridership of the service as a whole.	Ongoing	
21	To review progress in respect of the FBC Cycle Strategy 2005-11 and the LTP2 and implement those measures likely to have an impact on	Transport Planning and Infrastructure	Cycle network	FBC/HCC			(a)To assess progress of the Fareham Cycle Strategy Action Plan; (b) To provide specific information on the Council's website of cycle routes in and around the AQMAs	Reduction of NO_X emissions	Cycling continues to be promoted, and will likely be included in the measures within the Local NO_2 Plan.	Ongoing	

	air quality in the AQMAs										
24	To continue to work with schools in Fareham close to the AQMAs for the development, implementation and the annual review of School Travel Plans	Promoting Travel Alternatives	School Travel Plans	HCC			Indicators to be developed once success of LSTF bid is known. LSTF is now the primary resource mechanism for travel planning projects	Reduction of NO_X emissions	Fareham Borough Council continues to liaise with HCC School Travel Planning group. Diffusion tubes have been sited at several new locations adjacent to local schools, and will be reported in the 2019 ASR.	Ongoing	
25	To implement the Town Access Plan proposals where they have an impact on air quality in the AQMAs	Traffic Management	Other	HCC/FBC			(a) FBC to adopt HCC Town Access Plan (b) Accessibility target to be developed for Fareham	Reduction of NO_X emissions	The Town Access Plan (TAP) includes cycling measures, which are listed in Air Quality Action Plan Progress Reports. A number of schemes highlighted in the plan have been re-emphasised through the Green Infrastructure Strategy and the Active Travel Strategy.	Ongoing	
26	To continue to inspect premises and take appropriate enforcement action in respect of the Environmental	Environmental Permits	Other	FBC			DEFRA return		All due inspections undertaken in 2016/17. Return submitted to Defra on time	Ongoing	

	Permit risk assessment regime										
28	Promote the use of planning policies, alongside other planning and transport measures, to promote sustainable transport choices and reduce reliance on the car	Policy Guidance and Development Control	Air Quality Planning and Policy Guidance	FBC/GBC			Examples of where FBC requires higher provision of cycle facilities or lower car parking facilities than the HCC standards for new developments.	Reduction of NO_X emissions	Planning updates: (i) Implementation of the relevant policies set out in the LDF to influence local and regional air quality. (ii) The Draft Local Plan was published for consultation between 25 Oct and 8 Dec 2017. Under Policy INF2, the plan requires new development to offer maximum flexibility in choice of travel modes and promote sustainable and active travel. New development will be permitted where it positively contributes to the delivery of the AQAP, minimises emissions and contributes to reduction of transport impacts on local air quality. Electric vehicle charging equipment will be required for new residential	Ongoing	

									and communal parking areas. (iii) A Supplementary Planning Document (SPD) relating to air quality is being developed, which will address planning requirements such as electric vehicle infrastructure and access to sustainable transport.		
32	To continue to review and consult on air quality in the Borough in line with statutory requirements	Policy Guidance and Development Control	Other policy	FBC			(a) To ensure compliance with the DEFRA timetable. (b) To maintain air quality reports on the FBC website		Amendments to AQMA boundaries agreed by Executive in October 2017, and updated by Defra November 2017. Work is ongoing to develop Fareham BC's "Local NO_2 Plan" to achieve compliance with the annual mean EU Limit Value for NO_2 in the shortest possible time.	Ongoing	
33	To enhance the nitrogen dioxide monitoring network by providing continuous nitrogen dioxide	Policy Guidance and Development Control	Other policy	FBC			Outcomes of the LAQM reporting process using diffusion tube and continuous monitoring data from the Gosport Road and		Additional diffusion tubes have been installed to provide additional evidence to support the development of	Ongoing	

	monitors in the AQMAs						possibly Portland Street		Fareham BC's "Local NO_2 Plan". A monitoring strategy review is also being undertaken to inform future monitoring and reporting.		
34	To continue to work in partnership with neighbouring authorities and others for the control of air pollution and continued improvement of air quality e.g. to attend HIOW air quality group	Policy Guidance and Development Control	Other policy	FBC			Minutes of meetings		A technical working group has been established to develop FBC's "Local NO_2 Plan". The group includes FBC (Environmental Health, Planning and Transport Planning), GBC, HCC and First Bus.	Ongoing	
35	To monitor the performance of the AQAP and review actions regard to the air quality objectives and implement additional actions where necessary	Policy Guidance and Development Control	Other policy	FBC			Outcomes of the annual LAQM reporting of annual mean improvements. Also set out a position statement within the annual action plan progress report on any required changes to the existing measures and the need for further actions.	Reduction of NO_X emissions	Progress is reported in ASRs, available on Fareham Borough Council's website.	Annual progress reports to Defra	
38	To continue to place air quality reports on the FBC website	Public Information	Via the Internet	FBC			Annually (or as required) e-mail stakeholder bodies send a message each time there is a		The 2017 ASR is available for viewing on FBC website.	Ongoing	

							website report update				
39	To investigate the most effective method of disseminating air quality information to the public and assess the feasibility of employing this method for FBC	Public Information	Other	FBC			Annual review of information dissemination options in line with UK best practice and discussions with neighbouring authorities		Seeking to raise awareness of local and national air quality matters.(i) Link to all three monitoring stations in FBC and BGC on the FBC website. (ii) Various communications are being undertaken and planned as part of the process to develop the Local NO_2 Plan: public reports have been submitted to the Council Executive; a communications plan is being developed; and consultation may also be undertaken in association with specific measures included within the final Local NO_2 Plan.	2018/19	
40	To promote awareness via the FBC website of other air quality	Public Information	Via the Internet	FBC			Annual review of the Council website content in line with accepted UK best practice		Ongoing process of updating FBC website with the aim of providing an up to date, useful and informative	Ongoing	

	information web sites								public resource for air quality and to raise awareness of local and national air quality matters.		

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 mortality, allergic reactions, and cardiovascular diseases.

Currently neither Council undertakes monitoring of $PM_{2.5}$ concentrations. The current 2017 background maps for Fareham and Gosport (2015 based) indicate that background concentrations of $PM_{2.5}$ are far below the annual mean EU Limit Value for $PM_{2.5}$ of 25 µg/m³ to be met by 2020. Predicted background concentrations range from 7 ug/m³ to 13 µg/m³. Neither Council has declared Smoke Control Areas.

Measures that Fareham and Gosport are taking with the primary aim of reducing NO_2 concentrations will also help to address $PM_{2.5}$, for example:

- Existing AQAP measures to reduce car use and therefore reduce transport emissions, e.g. through promotion of sustainable transport alternatives and raising public awareness, will have a corresponding impact on emissions of $PM_{2.5}$ from road transport;
- Inspections through Local Authority Pollution Prevention and Control (LAPPC) regime include consideration of $PM_{2.5}$.

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.

Fareham and Gosport Borough Councils undertook automatic (continuous) monitoring at three sites during 2017. Table A.1 in Appendix A shows the details of these sites. Monitoring results are available at www.airqualityengland.co.uk.

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

Fareham and Gosport Borough Councils undertook non- automatic (passive) monitoring of NO_2 at 47 sites during 2017, 36 in Fareham and 11 in Gosport. Table A.2 in Appendix A shows the details of these sites.

Maps showing the location of the 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.

In 2017, measured concentrations in excesss of the level of the annual mean NO_2 air quality objective were recorded at two sites in Fareham (WW3 and CM2, where bias adjusted annualised concentrations of 40.4 ug/m³ and 68.0 µg/m³ were recorded respectively). These two sites are both new monitoring locations for 2017. WW3 (six months data capture) is on the A27 to the west of Fareham railway station. CM2 (five months data capture) is a kerbside site on Cams Hill, adjacent to the Delme Roundabout. These measured concentrations have been distance corrected to estimate the resultant NO_2 concentration at the closest location of relevant exposure, the results of which are presented within Table B.1. Following these corrections the concentrations fall below the annual mean air quality objective (33.4 µg/m³ at WW3 and 38.8 µg/m³ at CM2). Given its proximity to the road, the repositioning of site CM2 is currently being considered in order to obtain a measured concentration more representative of the closest locations of relevant exposure.

Following distance correction, no sites recorded annual mean concentrations greater than 60 µg/m³, which indicates that there are unlikely to be exceedances of the 1-hour mean objective at relevant receptor locations.

3.2.2 Particulate Matter (PM_{10})

Table A.5 in Appendix A compares the ratified and adjusted monitored PM_{10} annual mean concentrations for the past 5 years with the air quality objective of 40µg/m^3.

Table A.6 in Appendix A compares the ratified continuous monitored PM_{10} daily mean concentrations for the past 5 years with the air quality objective of 50µg/m^3, not to be exceeded more than 35 times per year.

In the past 5 years, there have been no measured exceedances of either the annual mean or daily mean air quality objectives for PM_{10}.

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)
Gosport Borough Council										
GOS1	Tichborne Way	Roadside	458987	102786	NO_2 / PM_{10}	NO	Chemiluminescence and TEOM	15	5	3
Fareham Borough Council										
FAR1	Gosport Road	Roadside	457594	105280	NO_2	YES	Chemiluminescence	3.5	1.5	2
FAR2	Portland Street	Roadside	457954	106027	NO_2	YES	Chemiluminescence	5	1.5	1.5

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)
Gosport Borough Council										
G	Military Road/Brockhurst Road	Roadside	459572	101800	NO_2	N	41	3.5	N	2.7
Q	Fareham Way/Tichborne Way	Roadside	458985	102785	NO_2	N	16	6	Y	2.7
R	Fareham Way/Tichborne Way	Roadside	458985	102785	NO_2	N	16	6	Y	2.7
I	Fareham Way/Tichborne Way	Roadside	458985	102785	NO_2	N	16	6	Y	2.7
J	Fareham Road/Lederle Lane	Roadside	458282	104110	NO_2	N	46	3	N	2.7
V	Wych Lane/Fareham Road	Roadside	458064	104235	NO_2	N	12	5	N	2.8
W	Bus StopWych Lane	Roadside	457977	104185	NO_2	N	84	4.5	N	2.7
U	Daedalus	Roadside	456564	101572	NO_2	N	15	3	N	2.8
S	Bury Cross 1	Roadside	460046	99618	NO_2	N	2.3	3.3	N	2.5
T	Bury Cross 2	Roadside	460061	99604	NO_2	N	2.3	3.3	N	2.5
P	Lees Lane/Forton Road Junction	Roadside	460631	100435	NO_2	N	11	3	N	2.7

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Site ID	Site Name	Site Type	X OS Grid Ref	Y OS Grid Ref	Pollutants Monitored	In AQMA?	Distance to Relevant Exposure (m) [1]	Distance to kerb of nearest road (m) [2]	Tube collocated with a Continuous Analyser?	Height (m)
LG	Linden Grove	Roadside	460725	99452	NO_2	N	0	4.4	N	2.1
FG	Fair Thorne Gardens	Roadside	460291	99632	NO_2	N	0	1.2	N	2.3
QD1	4th Floor of the Quarter Deck, Mumby Road	Roadside	462228	100069	NO_2	N	0	125	N	10
Fareham Borough Council										
BL1	11 Bath Lane	Other	458376	106109	NO_2	N	N/A	16	N	2.9
G1A	30 Old Gosport Road	Roadside	457732	105625	NO_2	Y	0	10	N	2.3
G2A	138 Gosport Road	Other	457627	105138	NO_2	Y	0	9.5	N	1.8
G3	202 Gosport Road	Roadside	457726	104869	NO_2	N	0	9	N	2
G4	122 Gosport Road	Roadside	457598	105213	NO_2	Y	0	6	N	2.5
G6	171 Gosport Road	Roadside	457599	105410	NO_2	Y	0	6	N	2.3
G7	193 Gosport Road	Roadside	457583	105354	NO_2	Y	0	6.5	N	3
G8Z	156 Gosport Road	Roadside	457656	105049	NO_2	N	0	4	N	1.9
G10	107 Gosport Road	Roadside	457675	105616	NO_2	Y	0	14	N	2.6
G11	2 Earls Road	Roadside	457668	105461	NO_2	Y	0	5	N	2.1
G12	Two Saints,101 Gosport Road	Roadside	457684	105630	NO_2	Y	0	15	N	2.6
G14	Bottom of Beaconsfield Rd	Other	457631	105494	NO_2	Y	5	6.9	N	2.5

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Site ID	Site Name	Site Type	X OS Grid Ref	Y OS Grid Ref	Pollutants Monitored	In AQMA?	Distance to Relevant Exposure (m) [1]	Distance to kerb of nearest road (m) [2]	Tube collocated with a Continuous Analyser?	Height (m)
HR2	17 Hartlands Road	Roadside	457822	106107	NO_2	N	N/A	11	N	1.9
HR3A	7 Hartlands Road	Roadside	457787	106140	NO_2	N	0	7	N	2.5
HR4	25 Hartlands Road	Roadside	457860	106077	NO_2	N	0	6.5	N	1.9
PS1	1 Sentinel Cottages	Roadside	457939	106012	NO_2	Y	0	6.5	N	2.5
PS1A	1 Sentinel Cottages	Roadside	457939	106012	NO_2	Y	0	6.5	N	2.5
PS1B	1 Sentinel Cottages	Roadside	457939	106012	NO_2	Y	0	6.5	N	2.5
PS2	2 Sentinel Cottages	Roadside	457937	106021	NO_2	Y	0	6.5	N	2.7
PS3	38 Portland Street	Roadside	457935	106033	NO_2	Y	0	3.5	N	2.3
PS4	Co-located with Portland St Monitor	Roadside	457954	106027	NO_2	Y	5	1.8	Y	1.2
PS5	Co-located with Portland St Monitor	Roadside	457954	106027	NO_2	Y	5	1.8	Y	1.2
PS6	Co-located with Portland St Monitor	Roadside	457954	106027	NO_2	Y	5	1.8	Y	1.2
E1	Co-located with Gosport Road Monitor	Roadside	457590	105281	NO_2	Y	3.5	1.5	Y	1.9
E2	Co-located with Gosport Road Monitor	Roadside	457590	105281	NO_2	Y	3.5	1.5	Y	1.9

Fareham and Gosport Environmental Health Partnership

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)
E3	Co-located with Gosport Road Monitor	Roadside	457590	105281	NO_2	Y	3.5	1.5	Y	1.9
DC1	Maytree Drive Opposite Delme Court	Roadside	457182	106203	NO_2	N	N/A	0.5	N	2.5
RM1	Runnymede	Roadside	455745	107825	NO_2	N	N/A	49	N	2.7
GR/RL	Corner of Gosport Rd and Redlands Lane	Roadside	457564	105300	NO_2	Y	11	1.5	N	2.1
AQ8A	Rosemary House/Botley Road Suburban	Suburban	451618	109015	NO_2	N	0	8	N	2.1
PTC1	Peartree Close	Roadside	455517	103313	NO_2	N	0	0.1	N	2.2
FH1	Furze Court	Roadside	457675	107724	NO_2	N	21	35	N	1.7
FH2	Furze Court	Roadside	457683	107706	NO_2	N	0	50	N	1.5
FH3	Furze Court	Roadside	457716	107708	NO_2	N	9	46	N	1.6
BR1	Bridge Road	Roadside	449694	109264	NO_2	N	2.3	3.3	N	2.4
BR2	Bridge Road	Roadside	449664	109278	NO_2	N	1	3.2	N	2.5
BR3	Bridge Road	Roadside	449500	109465	NO_2	N	2.2	1.5	N	2.5
SL1	Swanwick Lane Top	Roadside	449574	109651	NO_2	N	4.6	2.5	N	2.5
SL2	Swanwick Lane Bottom	Roadside	451272	109530	NO_2	N	6	1	N	2.4
WW1	Western Way (Fareham town end)	Roadside	457845	106008	NO_2	N	17	1	N	2.1

Fareham and Gosport Environmental Health Partnership

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)
WW2	Western Way (Half way up Road)	Roadside	457443	106087	NO_2	N	27	1	N	2.4
WW3	Corner of Avenue and Gudge HL	Roadside	456837	106220	NO_2	N	4.2	2	N	2.1
CM1	Cams Hill, Near the Bridge	Roadside	458775	106228	NO_2	N	20	0.7	N	2.2
CM2	Cams Mill Kerb side	Kerbside	458775	106273	NO_2	N	8.4	0.2	N	2.2
CM3	On Cams Hill, near Delme Arms	Roadside	458828	106243	NO_2	N	7	1	N	2.3
SB	Sainsbury roundabout	Roadside	458270	106737	NO_2	N	64	1.3	N	2.2

Notes:

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

(2) N/A if not applicable.

Table A.3 – Annual Mean NO_2 Monitoring Results

Site ID	Site Type	Monitoring Type	Valid Data Capture for Monitoring Period (%) [1]	Valid Data Capture 2017 (%) [2]	NO_2 Annual Mean Concentration ($\mu g/m^3$) [3]				
					2013	2014	2015	2016	2017
Automatic - Gosport Borough Council									
GOS1	Roadside	Automatic	96.6	96.6	37.2	29.5	26.2	32.8	26.6
Automatic - Fareham Borough Council									
FAR1	Roadside	Automatic	99.4	99.4	33.8	32.5	27.6	25.9	29.0
FAR2	Roadside	Automatic	97.2	97.2	34.6	**40.4**	37.2	36.6	34.4
Non-automatic - Gosport Borough Council									
G	Roadside	Diffusion Tube	100.0	100.0	34.6	34.4	30.9	33.7	32.8
Q/R/I	Roadside	Diffusion Tube	100/91.7/91.7	100/91.7/91.7	28.2	24.7	21.8	25.9	23.9
J	Roadside	Diffusion Tube	83.3	83.3	**47.5**	39.1	27.4	31.2	32.6
V	Roadside	Diffusion Tube	100.0	100.0	No data	26.5	19.1	28.3	24.9
W	Roadside	Diffusion Tube	83.3	83.3	No data	22.4	15.5	18.8	16.5
U	Roadside	Diffusion Tube	58.3	58.3	20.1	21.7	14.6	20.7	19.4
S	Roadside	Diffusion Tube	91.7	91.7	36.1	38.9	36.5	36.5	38.1
T	Roadside	Diffusion Tube	100.0	100.0	39.3	38.2	37.7	36.4	33.8
P	Roadside	Diffusion Tube	91.7	91.7	35.1	39.4	29.4	33.8	31.6
LG	Roadside	Diffusion Tube	No Data	No Data	No data	No data	No data	18.2	No data

Fareham and Gosport Environmental Health Partnership

Site ID	Site Type	Monitoring Type	Valid Data Capture for Monitoring Period (%) [1]	Valid Data Capture 2017 (%) [2]	NO_2 Annual Mean Concentration ($\mu g/m^3$) [3]				
					2013	2014	2015	2016	2017
FG	Roadside	Diffusion Tube	100.0	25.0	No data	No data	No data	No data	18.8
QD1	Roadside	Diffusion Tube	100.0	25.0	No data	No data	No data	No data	15.8
Non-automatic - Fareham Borough Council									
BL1	Other	Diffusion Tube	100.0	100.0	38.5	**40.8**	**40.5**	35.7	31.4
G1A	Roadside	Diffusion Tube	91.7	91.7	33.5	35.8	35.8	30.1	29.4
G2A	Other	Diffusion Tube	100.0	100.0	32.1	34.1	33.5	27.9	27.7
G3	Roadside	Diffusion Tube	91.7	91.7	30.8	33.6	31.9	28.9	24.4
G4	Roadside	Diffusion Tube	100.0	100.0	29.2	32.2	31.5	25.5	24.8
G6	Roadside	Diffusion Tube	100.0	100.0	35.9	37.4	36.2	30.2	26.6
G7	Roadside	Diffusion Tube	100.0	100.0	**40.1**	**46.1**	**45.2**	36.0	34.5
G8Z	Roadside	Diffusion Tube	100.0	100.0	33.4	34.3	30.8	27.4	27.2
G10	Roadside	Diffusion Tube	100.0	100.0	**40.5**	**40.4**	**41.7**	35.5	33.4
G11	Roadside	Diffusion Tube	100.0	100.0	29.6	29	31.3	25.2	23.5
G12	Roadside	Diffusion Tube	91.7	91.7	37.4	**42.2**	38.2	32.8	34.0
G14	Other	Diffusion Tube	100.0	100.0	36.6	37	34.8	30.4	26.3
HR2	Roadside	Diffusion Tube	100.0	100.0	34	34.3	33.1	27.1	25.0

Fareham and Gosport Environmental Health Partnership

Site ID	Site Type	Monitoring Type	Valid Data Capture for Monitoring Period (%) [1]	Valid Data Capture 2017 (%) [2]	NO_2 Annual Mean Concentration ($\mu g/m^3$) [3]				
					2013	2014	2015	2016	2017
HR3A	Roadside	Diffusion Tube	66.7	66.7	29.5	30.2	29.0	23.6	22.8
HR4	Roadside	Diffusion Tube	100.0	100.0	31.7	33.8	33.0	29.5	24.8
PS1/1A/1B	Roadside	Diffusion Tube	83.3/91.7/91.7	83.3/91.7/91.7	37	38.7	37.2	31.9	30.1
PS2	Roadside	Diffusion Tube	91.7	91.7	36	**41.3**	38.1	35.5	33.3
PS3	Roadside	Diffusion Tube	75.0	75.0	**41.6**	**46**	**40.6**	33.6	33.9
PS4/5/6	Roadside	Diffusion Tube	100/91.7/100	100/91.7/100	34.8	**40.2**	**42.9**	36.6	34.4
E1/2/3	Roadside	Diffusion Tube	83.3/83.3/83.3	83.3/83.3/83.3	36.9	39.6	39.2	31.2	32.4
DC1	Roadside	Diffusion Tube	100.0	100.0	30.3	30.1	30.2	26.3	22.5
RM1	Roadside	Diffusion Tube	91.7	91.7	29.5	29.5	29.6	25.7	26.3
GR/RL	Roadside	Diffusion Tube	100.0	100.0	28.4	28.6	26.7	22.5	21.4
AQ8A	Suburban	Diffusion Tube	83.3	83.3	No data	27.8	29.8	24.9	24.3
PTC1	Roadside	Diffusion Tube	No Data	No Data	No data	No data	No data	29.9	No data
FH1	Roadside	Diffusion Tube	No Data	No Data	No data	No data	No data	29.9	No data
FH2	Roadside	Diffusion Tube	No Data	No Data	No data	No data	No data	32.2	No data
FH3	Roadside	Diffusion Tube	No Data	No Data	No data	No data	No data	26.0	No data

Fareham and Gosport Environmental Health Partnership

Site ID	Site Type	Monitoring Type	Valid Data Capture for Monitoring Period (%) [1]	Valid Data Capture 2017 (%) [2]	NO_2 Annual Mean Concentration ($\mu g/m^3$) [3]				
					2013	2014	2015	2016	2017
BR1	Roadside	Diffusion Tube	100.0	75.0	No data	No data	No data	No data	28.2
BR2	Roadside	Diffusion Tube	100.0	75.0	No data	No data	No data	No data	25.0
BR3	Roadside	Diffusion Tube	100.0	66.7	No data	No data	No data	No data	35.7
SL1	Roadside	Diffusion Tube	100.0	66.7	No data	No data	No data	No data	28.0
SL2	Roadside	Diffusion Tube	100.0	66.7	No data	No data	No data	No data	24.3
WW1	Roadside	Diffusion Tube	85.7	50.0	No data	No data	No data	No data	23.9
WW2	Roadside	Diffusion Tube	57.1	33.3	No data	No data	No data	No data	30.3
WW3	Roadside	Diffusion Tube	85.7	50.0	No data	No data	No data	No data	**40.4**
CM1	Roadside	Diffusion Tube	100.0	50.0	No data	No data	No data	No data	29.8
CM2	Roadside	Diffusion Tube	83.3	41.7	No data	No data	No data	No data	**68.0**
CM3	Roadside	Diffusion Tube	50.0	25.0	No data	No data	No data	No data	27.4
SB	Roadside	Diffusion Tube	100.0	25.0	No data	No data	No data	No data	32.6

☒ **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 40$\mu g/m^3$ are shown in **bold**.

Fareham and Gosport Environmental Health Partnership

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 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 (Automatic Monitoring Sites)

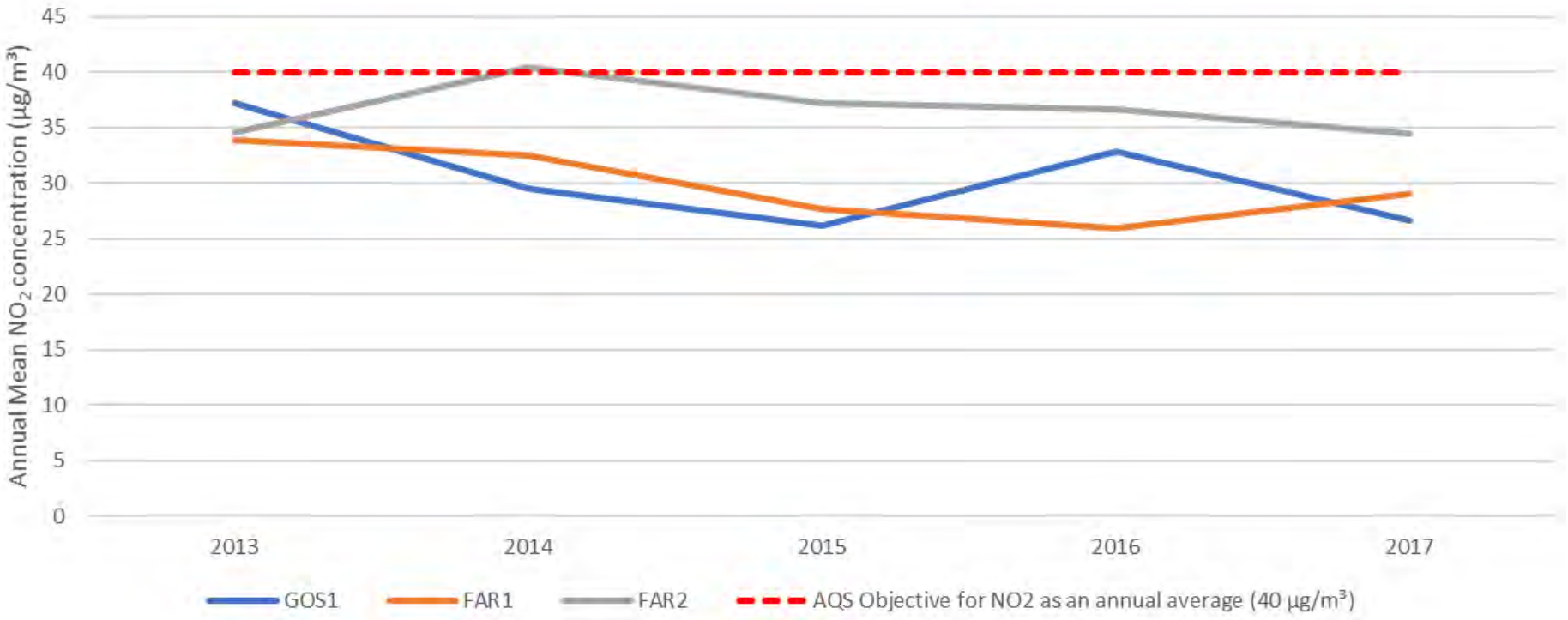


Figure A.2 – Trends in Annual Mean NO_2 Concentrations (Gosport – Non-automatic Monitoring Sites)

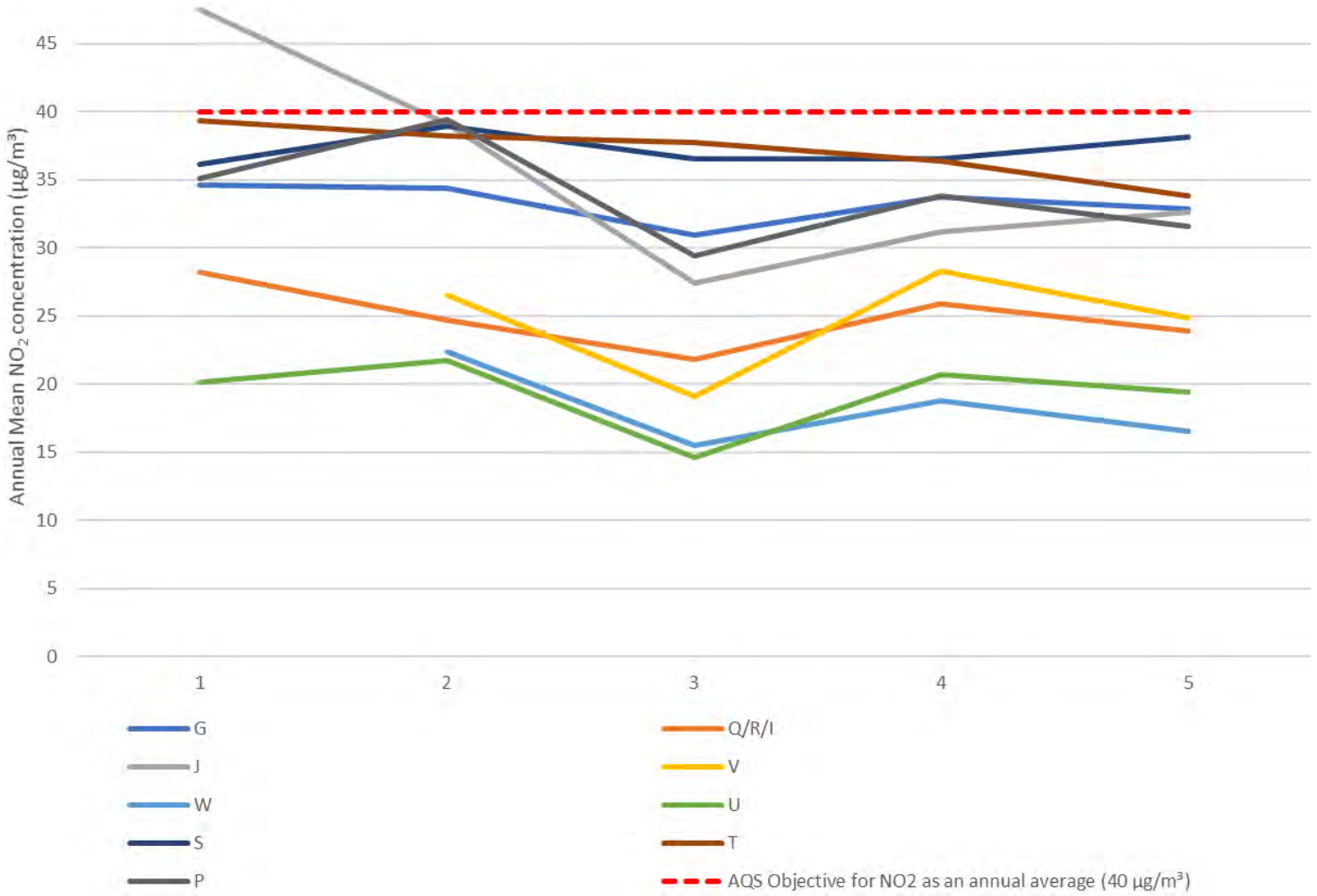


Figure A.3 – Trends in Annual Mean NO_2 Concentrations (Fareham – Non-automatic Monitoring Sites)

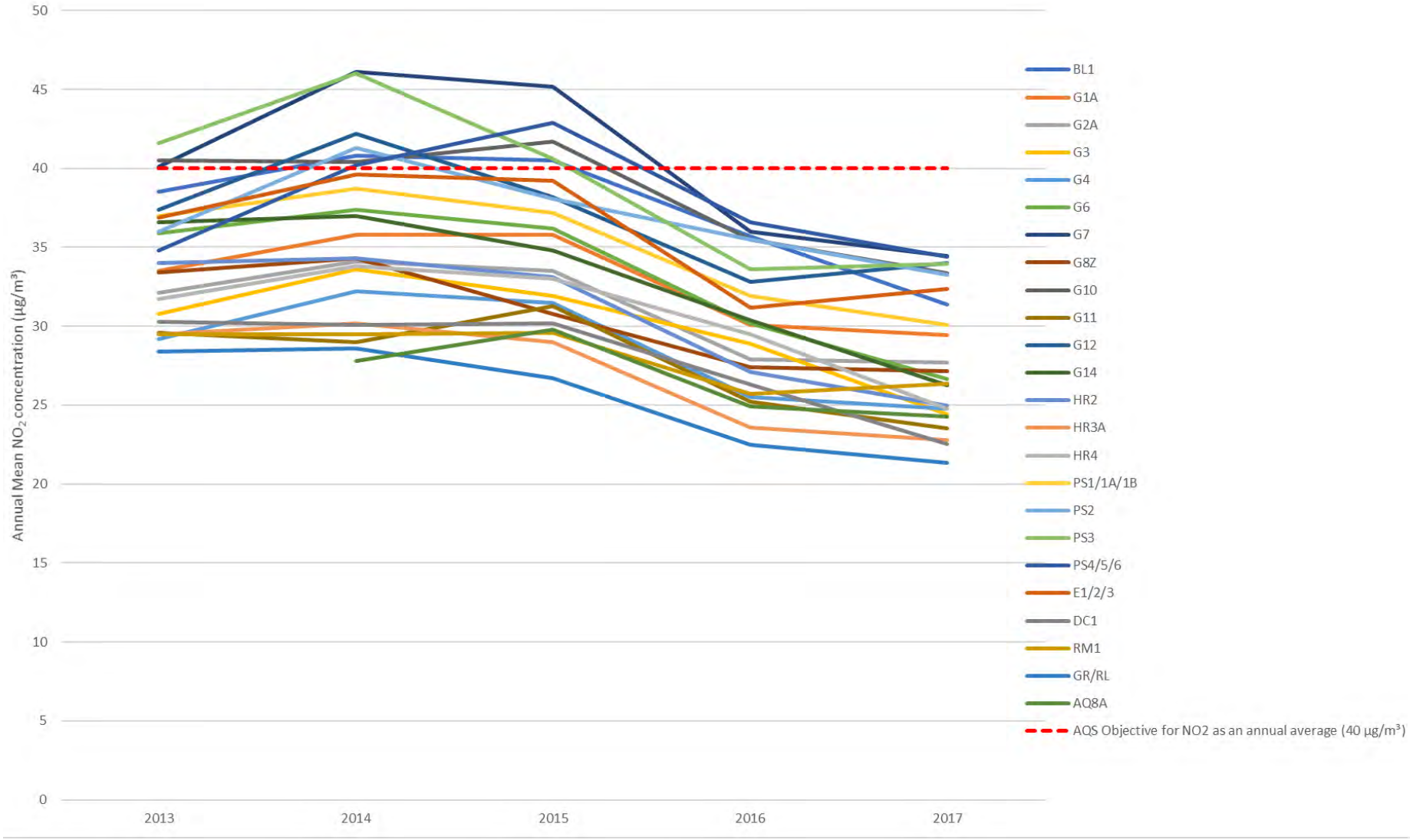


Table A.4 – 1-Hour Mean NO_2 Monitoring Results

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
Gosport Borough Council									
GOS1	Roadside	Automatic	96.59817352	96.59817352	7	7	0	0	0
Fareham Borough Council									
FAR1	Roadside	Automatic	99.41780822	99.41780822	0	0	0	0	0
FAR2	Roadside	Automatic	97.1803653	97.1803653	0	0 (126)	0	2	5

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.4 – Trends in Number of NO_2 1-Hour Means > 200µg/m^3

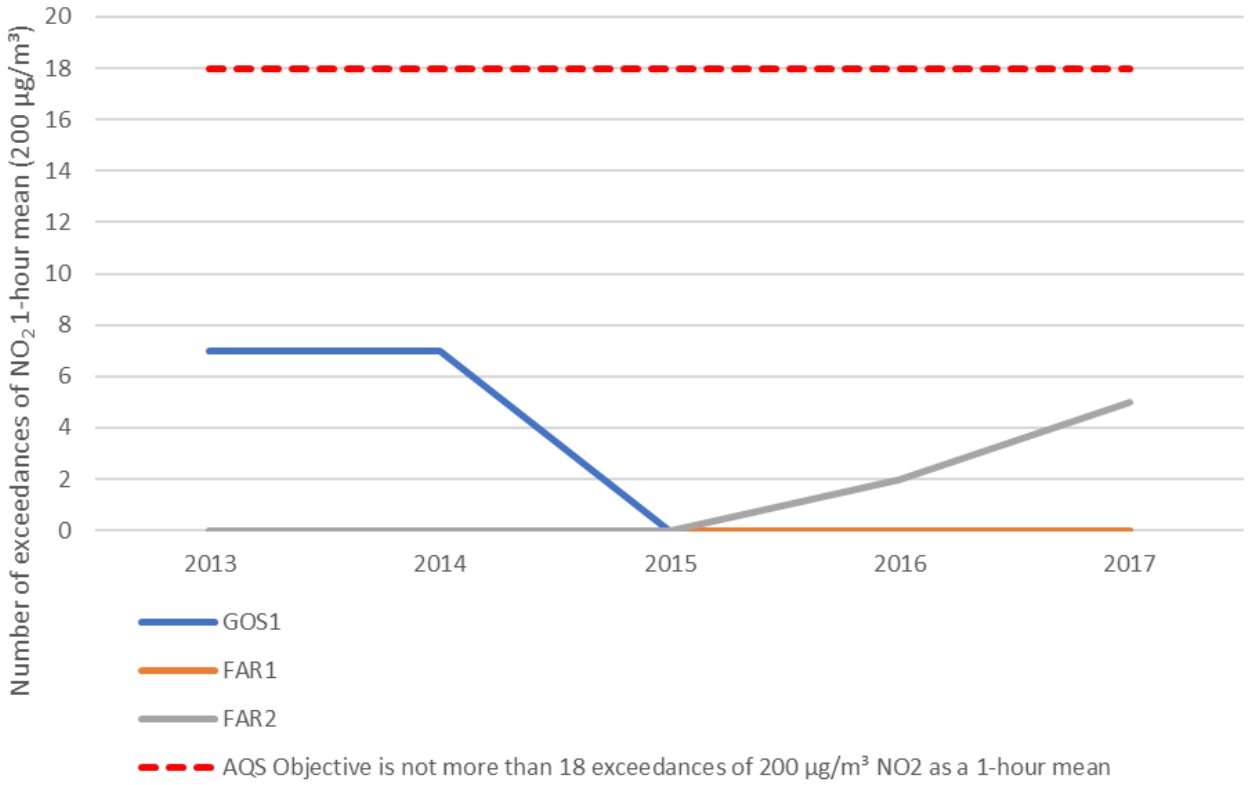


Table A.5 – Annual Mean PM_{10} Monitoring Results

Site ID	Site Type	Valid Data Capture for Monitoring Period (%) (1)	Valid Data Capture 2017 (%) (2)	PM_{10} Annual Mean Concentration ($\mu g/m^3$) (3)				
				2013	2014	2015	2016	2017
Gosport Borough Council								
GOS1	Roadside	95.6	95.6	21.9	24	20.8	19.1	17.5

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

Notes:

Exceedances of the PM_{10} annual mean objective of 40$\mu g/m^3$ 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.5 – Trends in Annual Mean PM_{10} Concentrations

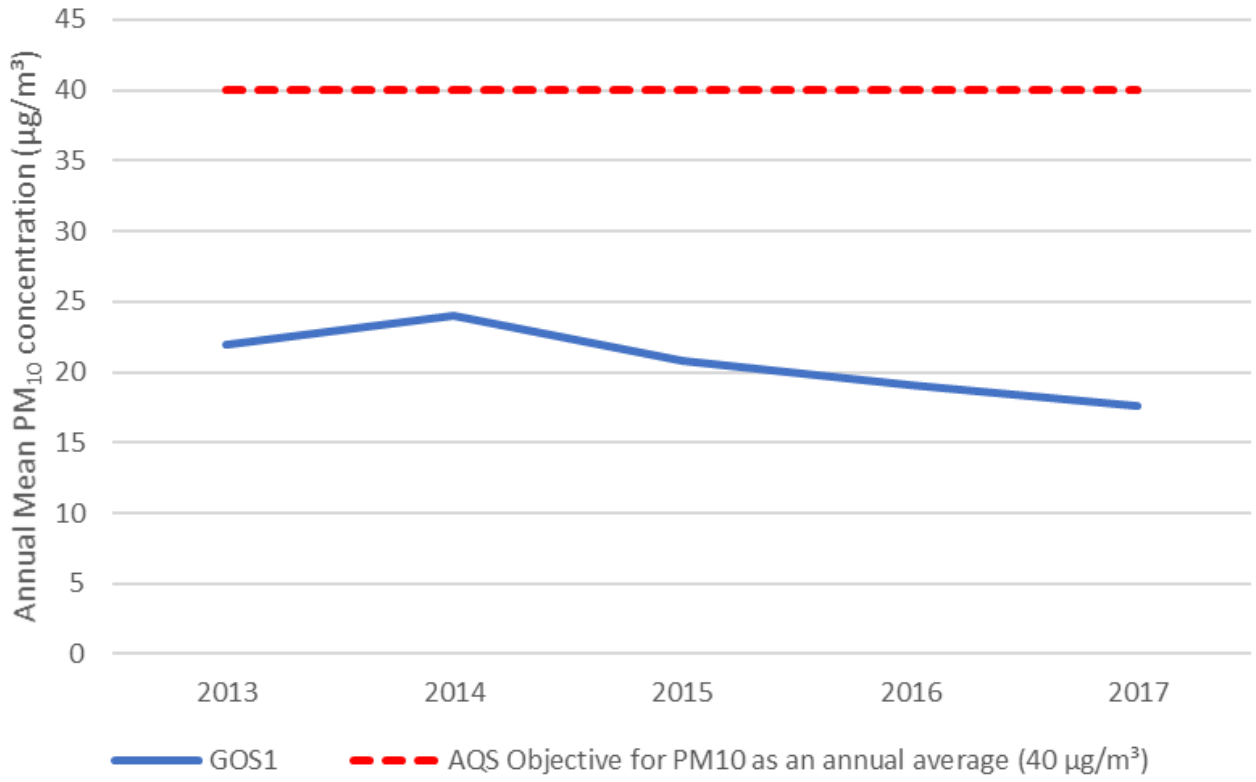


Table A.6 – 24-Hour Mean PM_{10} Monitoring Results

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
Gosport Borough Council								
GOS1	Roadside	97.5	97.5	3	15	3	1	1

Notes:

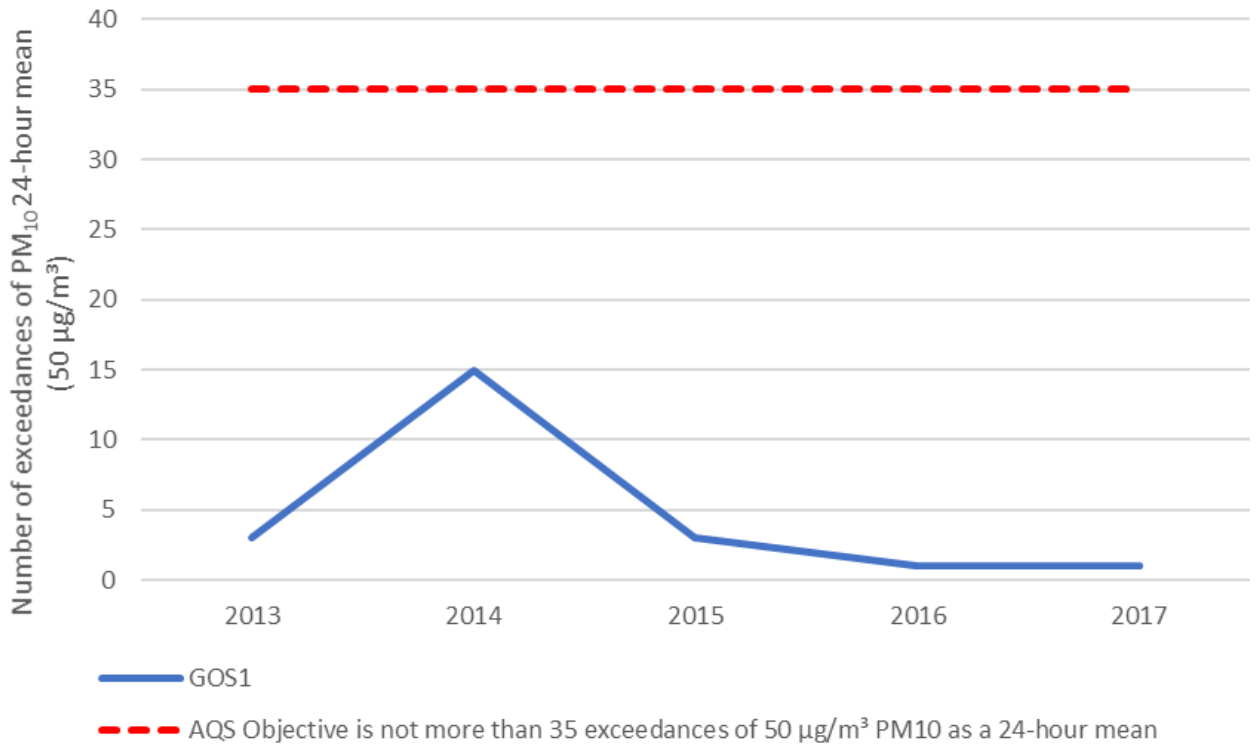
Exceedances of the PM_{10} 24-hour mean objective (50µg/m^3 not to be exceeded more than 35 times/year) are shown in **bold.**

(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 90.4th percentile of 24-hour means is provided in brackets.

Figure A.6 – Trends in Number of 24-Hour Mean PM_{10} Results >50µg/m³



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)														
	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual Mean		
													Raw Data	Bias Adjusted (0.89) and Annualised (1)	Distance Corrected to Nearest Exposure (2)
Gosport Borough Council															
G	47.8	36.6	37.7	38.5	30.6	39.9	30.8	33.7	32.4	35.0	40.2	39.3	36.9	32.8	N/A
Q/R/I	42.3	28.8	28.2	27.8	29.9	No data	19.4	22.2	23.4	25.4	28.8	24.0	26.8	23.9	N/A
J	51.1	36.9	37.9	No data	30.5	No data	29.1	35.3	34.0	36.6	38.7	36.7	36.7	32.6	N/A
V	43.7	30.6	28.1	29.7	23.4	25.1	19.6	24.2	26.1	24.9	33.4	26.9	28.0	24.9	N/A
W	31.7	21.4	No data	18.5	No data	14.6	11.1	10.1	16.8	14.8	24.5	22.2	18.6	16.5	N/A
U	42.7	No data	20.4	19.1	17.5	18.0	No data	14.5	No data	No data	No data	18.6	21.5	19.4	N/A
S	52.8	40.9	37.2	38.4	37.2	43.6	31.1	34.0	37.9	36.6	No data	81.3	42.8	38.1	N/A
T	42.9	38.8	37.6	47.2	35.0	36.5	32.1	31.0	35.5	35.8	43.9	39.4	38.0	33.8	N/A
P	54.1	34.8	33.9	39.2	33.3	34.3	28.2	30.2	29.9	32.6	39.7	No data	35.5	31.6	N/A
FG	No data	No data	No data	No data	No data	No data	No data	14.9	17.0	22.0	No data	No data	18.0	18.8	N/A
QD1	No data	No data	No data	No data	No data	No data	No data	No data	No data	19.4	24.2	18.8	20.8	15.8	N/A
Fareham Borough Council															
BL1	53.5	41.8	38.8	39.2	33.8	33.4	25.2	25.3	29.4	22.3	38.0	42.5	35.3	31.4	N/A
G1A	45.5	37.3	37.2	34.0	No data	27.4	24.3	28.1	27.5	32.8	36.2	33.6	33.1	29.4	N/A

Fareham and Gosport Environmental Health Partnership

Site ID	NO_2 Mean Concentrations (µg/m^3)														
	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual Mean		
													Raw Data	Bias Adjusted (0.89) and Annualised (1)	Distance Corrected to Nearest Exposure (2)
G2A	43.2	31.8	33.5	32.8	23.4	25.5	22.1	26.5	28.1	36.0	32.5	38.1	31.1	27.7	N/A
G3	45.1	28.7	27.8	28.5	22.0	13.4	19.3	23.3	24.1	No data	36.6	33.4	27.5	24.4	N/A
G4	40.5	34.1	27.8	28.9	23.3	23.4	20.6	24.5	21.1	30.3	29.5	30.2	27.8	24.8	N/A
G6	45.0	34.0	33.5	32.7	30.9	19.8	23.6	25.9	26.4	27.0	28.5	31.9	29.9	26.6	N/A
G7	50.0	40.0	44.9	48.0	38.1	32.2	32.8	34.8	32.5	37.1	38.0	36.2	38.7	34.5	N/A
G8Z	47.0	30.1	24.3	35.0	25.6	26.3	24.3	29.2	27.7	33.6	32.3	31.2	30.5	27.2	N/A
G10	47.8	40.3	36.1	40.7	34.4	37.8	28.4	34.4	33.2	40.6	41.6	35.1	37.5	33.4	N/A
G11	34.4	24.9	26.7	26.1	20.5	23.8	19.0	23.3	25.0	28.1	30.9	34.7	26.4	23.5	N/A
G12	43.0	37.9	No data	69.3	33.0	35.6	27.5	32.0	29.3	35.2	39.0	38.3	38.2	34.0	N/A
G14	49.4	33.2	26.9	33.6	33.6	29.0	21.6	22.5	27.4	23.7	26.7	26.9	29.5	26.3	N/A
HR2	36.3	30.1	31.5	29.0	26.5	26.8	19.8	22.0	23.5	27.3	31.6	32.4	28.1	25.0	N/A
HR3A	38.1	26.8	25.4	25.8	No data	39.4	No data	No data	No data	22.3	29.7	26.6	29.2	22.8	N/A
HR4	44.5	35.6	28.2	29.2	27.2	20.6	17.5	21.0	24.8	25.7	29.8	29.9	27.8	24.8	N/A
PS1/1A/1B	46.2	33.4	33.0	32.3	34.9	32.1	25.1	No data	No data	28.9	35.0	32.1	33.8	30.1	N/A
PS2	47.2	30.9	33.3	36.2	33.6	32.9	25.8	30.1	31.0	31.5	No data	78.7	37.4	33.3	N/A
PS3	45.9	35.1	No data	No data	34.8	36.8	No data	34.6	34.4	35.0	45.7	41.0	38.1	33.9	N/A
PS4/5/6	55.6	38.0	41.4	40.9	39.4	40.3	31.7	33.7	34.8	38.5	41.5	36.9	38.7	34.4	N/A
E1/2/3	44.8	34.4	33.5	42.7	29.8	14.9	No data	No data	30.8	41.8	45.9	36.5	36.4	32.4	N/A
DC1	41.5	27.9	27.6	23.9	21.3	12.2	17.7	22.6	24.3	26.2	31.5	27.1	25.3	22.5	N/A
RM1	45.9	23.7	27.7	31.4	21.7	No data	29.9	23.7	27.6	27.9	37.3	28.9	29.6	26.3	N/A

Fareham and Gosport Environmental Health Partnership

Site ID	NO_2 Mean Concentrations (µg/m^3)														
	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual Mean		
													Raw Data	Bias Adjusted (0.89) and Annualised (1)	Distance Corrected to Nearest Exposure (2)
GR/RL	40.2	25.0	26.9	25.8	23.8	19.3	14.7	18.7	19.5	19.5	29.0	25.8	24.0	21.4	N/A
AQ8A	38.3	26.9	26.8	26.1	No data	No data	19.9	24.5	25.3	29.7	29.7	26.0	27.3	24.3	N/A
BR1	No data	No data	No data	40.0	33.6	12.0	26.8	30.6	30.3	35.4	42.3	33.7	31.6	28.2	N/A
BR2	No data	No data	No data	33.9	29.4	12.1	28.7	26.1	28.0	31.2	34.9	28.8	28.1	25.0	N/A
BR3	No data	No data	No data	No data	36.6	37.4	32.6	29.5	33.0	39.1	44.6	34.4	35.9	35.7	N/A
SL1	No data	No data	No data	No data	25.4	26.0	20.7	26.2	26.9	34.8	32.5	32.3	28.1	28.0	N/A
SL2	No data	No data	No data	No data	23.6	23.6	20.5	23.0	26.2	24.3	30.5	23.4	24.4	24.3	N/A
WW1	No data	No data	No data	No data	No data	13.5	20.1	24.1	26.1	No data	30.6	30.5	24.2	23.9	N/A
WW2	No data	No data	No data	No data	No data	No data	25.6	No data	29.6	No data	41.7	36.5	33.3	30.3	N/A
WW3	No data	No data	No data	No data	No data	34.1	30.7	36.6	35.4	37.8	No data	47.7	37.1	**40.4**	33.4
CM1	No data	No data	No data	No data	No data	No data	24.4	28.5	26.9	31.4	46.5	30.7	31.4	29.8	N/A
CM2	No data	No data	No data	No data	No data	No data	60.0	58.1	55.5	93.2	74.6	No data	68.3	**68.0**	38.8
CM3	No data	No data	No data	No data	No data	No data	No data	No data	26.3	31.6	40.4	No data	32.8	27.4	N/A
SB	No data	No data	No data	No data	No data	No data	No data	26.6	31.6	33.7	No data	No data	30.6	32.6	N/A

☐ **Local bias adjustment factor used**

☒ **National bias adjustment factor used**

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

☒ **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**.

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) 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

Sources of Pollution

Fareham and Gosport Councils have identified no new sources within the Borough as described in Chapter 7, Section 1 of the Defra Technical Guidance LAQM.TG(16).

Short-term to Long-term Data Adjustment

For the 2017 diffusion tube data, annualisation was required at three sites in Gosport and 11 sites in Fareham, due to data capture below 75%. Annualisation has been completed flowing Defra Technical Guidance LAQM.TG(16) Box 7.10. Details of the annualisation are provided in Table C.1.

Table C.1 – Short-term to Long-term Monitoring Data Adjustment

Site ID	Unadjusted Diffusion Tube Mean (µg/m³)	Annualisation Factor Portsmouth (Urban Background)	Annualisation Factor Southampton Centre (Urban Background)	Annualisation Factor Bournemouth (Urban Background)	Annualisation Factor Brighton Preston Park (Urban Background)	Average Annualisation Factor	Adjusted and Bias Adjusted Tube Mean (µg/m³)
HR3A	29.2	0.88	0.90	0.84	0.88	0.88	22.8
BR3	35.9	1.11	1.03	1.21	1.12	1.12	35.7
SL1	28.1	1.11	1.03	1.21	1.12	1.12	28.0
SL2	24.4	1.11	1.03	1.21	1.12	1.12	24.3
WW1	24.2	1.12	1.04	1.19	1.09	1.11	23.9
WW2	33.3	1.01	0.98	1.09	1.02	1.02	30.3
WW3	37.1	1.24	1.08	1.35	1.23	1.22	40.4
CM1	31.4	1.06	1.00	1.16	1.05	1.07	29.8
CM2	68.3	1.09	1.06	1.24	1.09	1.12	68.0
CM3	32.8	0.90	0.93	1.01	0.93	0.94	27.4
SB	30.6	1.19	1.09	1.37	1.15	1.20	32.6
U	21.5	1.02	1.01	1.01	1.02	1.02	19.4
FG	18.0	1.17	1.08	1.34	1.12	1.18	18.8
QD1	20.8	0.83	0.84	0.89	0.85	0.85	15.8

Diffusion Tube Local Bias Adjustment Factors

There are four triplicate diffusion tube monitoring sites located within Fareham and Gosport, three of which are co-located with automatic monitoring stations. Local bias

adjustment factors have been calculated at each of these sites using the Precision and Bias Adjustment spreadsheet (v04) (see Figures C.1, C.2 and C.3), the results of which are compared in Table C.2.

Table C.2 – Local Bias Adjustment Factors

Location	Diffusion Tube Data Capture (%)	Continuous Monitor Data Capture (%)	Diffusion Tube Annual Mean (µg/m³)	Continuous Monitor Annual Mean (µg/m³)	Ratio
Tichborne Way (GOS1), Q/I/R	94.4	96%	27	27	0.98
Gosport Road (FAR1), E1/2/3	83.3	99%	38	32	0.84
Portland Street (FAR2), PS4/5/6	97.2	97%	38	34	0.89

Figure C.1 – Local Bias Adjustment Factor Correction Output – Tichborne Way (GOS1)

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	04/01/2017	01/02/2017	42.3		42.5	42	0.1	0	1.1	29.7	97.0	Good	Good
2	01/02/2017	28/02/2017	28.8	29.6	28.4	29	0.6	2	1.6	34.6	100.0	Good	Good
3	28/02/2017	29/03/2017	28.2	22.4	27.0	26	3.1	12	7.6	24.5	86.5	Good	Good
4	29/03/2017	26/04/2017	27.8	29.7	30.0	29	1.2	4	3.0	26.9	100.0	Good	Good
5	26/04/2017	31/05/2017	29.9	29.1	28.1	29	0.9	3	2.2	25.3	99.5	Good	Good
6	31/05/2017	28/06/2017		27.8	27.1	27	0.5	2	4.5	25.2	99.0	Good	Good
7	28/06/2017	02/08/2017	19.4	20.4	20.6	20	0.6	3	1.6	24.5	91.5	Good	Good
8	02/08/2017	01/09/2017	22.2	22.7	23.4	23	0.6	3	1.5	24.1	99.9	Good	Good
9	01/09/2017	28/09/2017	23.4	23.3	25.6	24	1.3	5	3.3	25.6	89.1	Good	Good
10	28/09/2017	02/11/2017	25.4	25.1	27.1	26	1.1	4	2.7	27.7	95.2	Good	Good
11	02/11/2017	06/12/2017	28.8	28.9	28.9	29	0.0	0	0.1	22.5	99.5	Good	Good
12	06/12/2017	04/02/2018	24.0	22.5	21.9	23	1.1	5	2.7	30.7	99.2	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

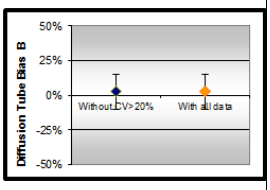
(Check average CV & DC from Accuracy calculations)

Site Name/ ID:

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 12 periods of data	
Bias factor A	0.98 (0.87 - 1.12)
Bias B	2% (-11% - 14%)
Diffusion Tubes Mean:	27 µgm^{-3}
Mean CV (Precision):	4
Automatic Mean:	27 µgm^{-3}
Data Capture for periods used:	96%
Adjusted Tubes Mean:	27 (24 - 31) µgm^{-3}

Accuracy (with 95% confidence interval) WITH ALL DATA	
Bias calculated using 12 periods of data	
Bias factor A	0.98 (0.87 - 1.12)
Bias B	2% (-11% - 14%)
Diffusion Tubes Mean:	27 µgm^{-3}
Mean CV (Precision):	4
Automatic Mean:	27 µgm^{-3}
Data Capture for periods used:	96%
Adjusted Tubes Mean:	27 (24 - 31) µgm^{-3}



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Version 04 - February 2011

Figure C.2 – Local Bias Adjustment Factor Correction Output – Gosport Road (FAR1)

Checking Precision and Accuracy of Triplicate Tubes

AEA Energy & Environment
From the AEA group

Diffusion Tubes Measurements

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	Automatic Method: Period Mean	Automatic Method: Data Capture (% DC)	Data Quality Check: Tubes Precision Check	Data Quality Check: Automatic Monitor Data
1	04/01/2017	01/02/2017	44.8	47.7	44.8	46	1.7	4	4.1	41.8	99.7	Good	Good
2	01/02/2017	28/02/2017	34.4	37.1	34.0	35	1.7	5	4.2	31.8	99.8	Good	Good
3	28/02/2017	29/03/2017	33.5	32.6	36.4	34	2.0	6	5.0	28.2	99.6	Good	Good
4	29/03/2017	26/04/2017	42.7	41.9	39.5	41	1.6	4	4.1	31.6	99.9	Good	Good
5	26/04/2017	31/05/2017	29.8	29.9	30.9	30	0.6	2	1.6	24.2	97.4	Good	Good
6	31/05/2017	28/06/2017	14.9	29.3	27.8	24	7.9	33	19.7	20.5	99.7	Poor Precision	Good
7	28/06/2017	02/08/2017								19.2	98.7		Good
8	02/08/2017	31/08/2017								21.3	99.9		Good
9	31/08/2017	28/09/2017	30.8	35.6	29.1	32	3.4	11	8.4	25.3	99.7	Good	Good
10	28/09/2017	01/11/2017	41.8	40.2	40.4	41	0.9	2	2.2	27.3	99.8	Good	Good
11	01/11/2017	05/12/2017	45.9	46.3	40.2	44	3.4	8	8.5	41.0	99.6	Good	Good
12	05/12/2017	04/02/2018	36.5	34.8	37.9	36	1.6	4	3.9	34.3	100.0	Good	Good
13													

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

Overall survey --> Good precision | Good Overall DC

(Check average CV & DC from Accuracy calculations)

Site Name/ ID:

Precision: 9 out of 10 periods have a CV smaller than 20%

Accuracy (with 95% confidence interval) without periods with CV larger than 20%

Bias calculated using 9 periods of data

Bias factor A: 0.84 (0.77 - 0.92)

Bias B: 19% (8% - 30%)

Diffusion Tubes Mean: 38 µgm^{-3}

Mean CV (Precision): 5

Automatic Mean: 32 µgm^{-3}

Data Capture for periods used: 99%

Adjusted Tubes Mean: 32 (29 - 35) µgm^{-3}

Accuracy (with 95% confidence interval) WITH ALL DATA

Bias calculated using 10 periods of data

Bias factor A: 0.84 (0.78 - 0.91)

Bias B: 19% (9% - 28%)

Diffusion Tubes Mean: 36 µgm^{-3}

Mean CV (Precision): 8

Automatic Mean: 31 µgm^{-3}

Data Capture for periods used: 100%

Adjusted Tubes Mean: 31 (28 - 33) µgm^{-3}

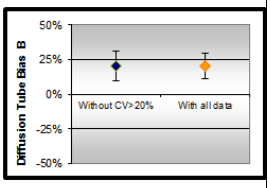

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Figure C.3 – Local Bias Adjustment Factor Correction Output – Portland Street (FAR2)

Checking Precision and Accuracy of Triplicate Tubes

AEA Energy & Environment
From the AEA group

Diffusion Tubes Measurements

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	Automatic Method: Period Mean	Automatic Method: Data Capture (% DC)	Data Quality Check: Tubes Precision Check	Data Quality Check: Automatic Monitor Data
1	04/01/2017	03/02/2017	55.6	56.7	55.6	56	0.6	1	1.6	50.4	99.9	Good	Good
2	03/02/2017	28/02/2017	38.0	27.9	35.1	34	5.2	15	12.9	35.2	99.0	Good	Good
3	28/02/2017	29/03/2017	41.4	40.5	38.6	40	1.4	3	3.5	36.0	74.7	Good	Good
4	29/03/2017	26/04/2017	40.9	41.1	42.5	42	0.9	2	2.2	34.5	99.3	Good	Good
5	26/04/2017	31/05/2017	39.4	38.0	36.8	38	1.3	3	3.2	32.0	100.0	Good	Good
6	31/05/2017	28/06/2017	40.3	39.8	36.5	39	2.0	5	5.0	26.7	99.9	Good	Good
7	28/06/2017	02/08/2017	31.7		30.5	31	0.9	3	8.1	22.8	99.4	Good	Good
8	02/08/2017	31/08/2017	33.7	32.0	30.8	32	1.5	5	3.7	24.2	96.4	Good	Good
9	31/08/2017	27/09/2017	34.8	32.1	34.5	34	1.5	4	3.7	30.6	99.8	Good	Good
10	27/09/2017	01/11/2017	38.5	36.4	37.9	38	1.1	3	2.8	31.4	100.0	Good	Good
11	01/11/2017	05/12/2017	41.5	38.2	41.0	40	1.8	4	4.5	42.9	99.3	Good	Good
12	05/12/2017	04/02/2018	36.9	37.3	41.7	39	2.7	7	6.7	44.0	97.1	Good	Good
13													

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

Overall survey --> Good precision | Good Overall DC

(Check average CV & DC from Accuracy calculations)

Site Name/ ID:

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 12 periods of data

Bias factor A: 0.89 (0.81 - 0.99)

Bias B: 12% (1% - 24%)

Diffusion Tubes Mean: 38 µgm^{-3}

Mean CV (Precision): 5

Automatic Mean: 34 µgm^{-3}

Data Capture for periods used: 97%

Adjusted Tubes Mean: 34 (31 - 38) µgm^{-3}

Accuracy (with 95% confidence interval) WITH ALL DATA

Bias calculated using 12 periods of data

Bias factor A: 0.89 (0.81 - 0.99)

Bias B: 12% (1% - 24%)

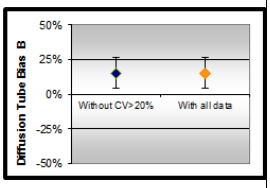
Diffusion Tubes Mean: 38 µgm^{-3}

Mean CV (Precision): 5

Automatic Mean: 34 µgm^{-3}

Data Capture for periods used: 97%

Adjusted Tubes Mean: 34 (31 - 38) µgm^{-3}



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Diffusion Tube National Bias Adjustment Factors

Diffusion tubes for 2017 were supplied and analysed by Gradko International Limited. The tubes were prepared using the 20% Triethanolamine (TEA) in water preparation method. The national bias adjustment factor for Gradko 20% TEA is 0.89 (based on 34 studies, spreadsheet version number 03/18) as derived from the national bias adjustment calculator.

Justification for Choice of Factor Applied

The diffusion tube data has been corrected using a bias adjustment factor, which is an estimate of the difference between measured diffusion tube concentrations and those measured by a continuous analyser at the same location, the latter being a more accurate method of monitoring. Defra Technical Guidance LAQM.TG(16) provides guidance with regard to the application of a bias adjustment factor to correct diffusion tube monitoring. Triplicate co-location studies can be used to determine a local bias factor based on the comparison of diffusion tube results with data taken from NO_x/NO_2 continuous analysers. Alternatively, the national database of diffusion tube co-location surveys provides bias factors for the relevant laboratory and preparation method.

Within the results reported in this 2018 ASR, the national bias adjustment factor has been applied to both Fareham and Gosport Borough Council's diffusion tube measurements, with justification as follows:

- Previous LAQM reports have applied the national bias adjustment factor to Gosport Borough Council diffusion tubes
- The local bias adjustment factors determined in Fareham are 0.84 and 0.89, and align closely to the national factor (0.89).
- Using the same method across both local authorities provides consistency in approach.

PM_{10} Monitoring Adjustment

A Tapered Element Oscillating Microbalance (TEOM) is in operation at the Tichborne Way monitoring location to record PM_{10} concentrations. As TEOM monitors do not meet the equivalence criteria for PM_{10} monitoring therefore the data must be adjusted. The Tichborne Way PM_{10} data has been corrected using the Volatile Correction Model (VCM) methodology. The VCM correction has been completed for

the data provided to Gosport Borough Council by Ricardo Environment and Energy who were the service agents for the automatic monitors for during 2017.

QA/QC of Automatic Monitoring

Formal Quality Assurance/Quality Control (QA/QC) is currently provided by Ricardo Environment and Energy, this ensures reliability and accuracy of the measurements. The monitoring sites are visited and checked every two weeks.

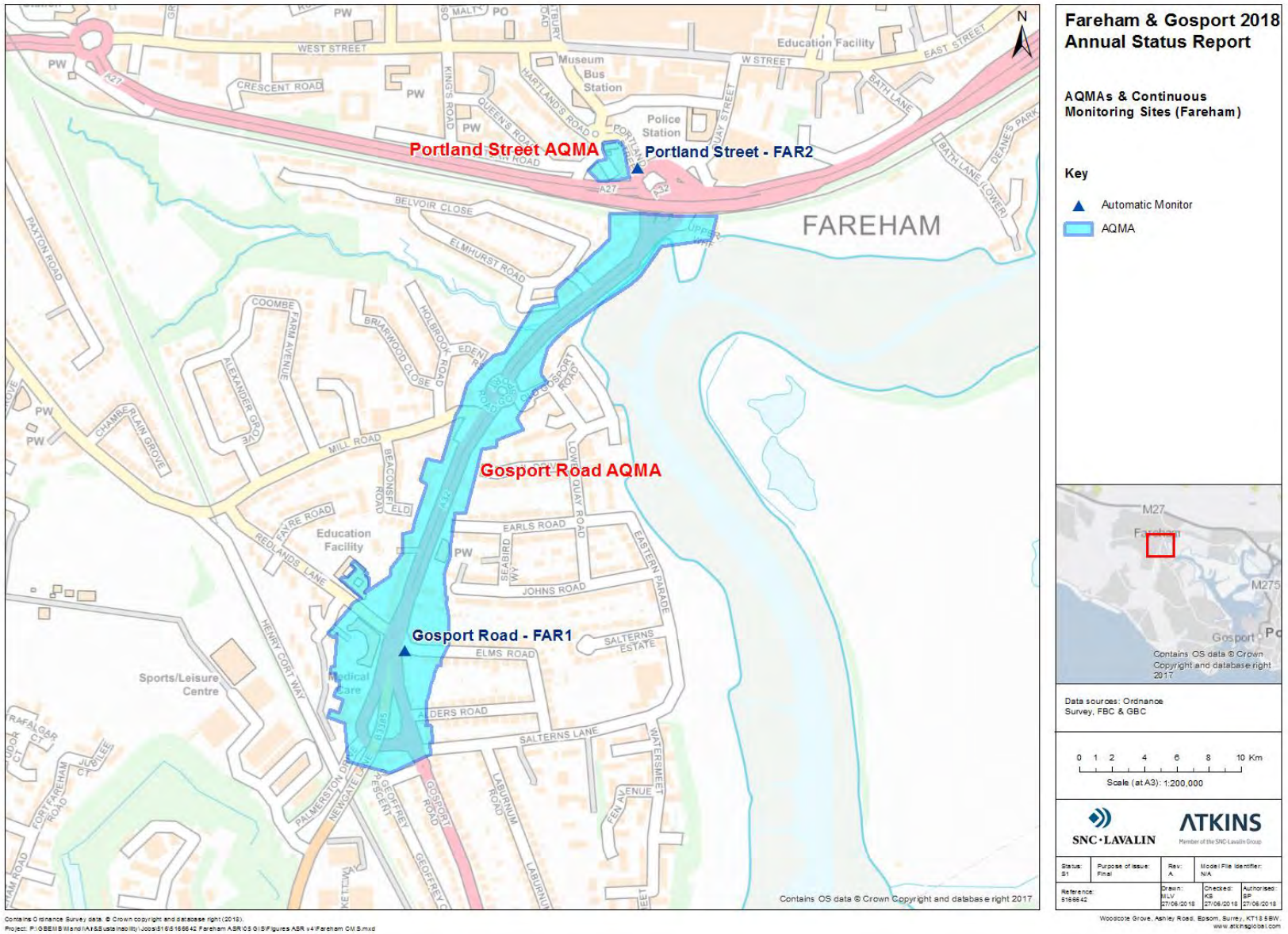
QA/QC of Diffusion Tube Monitoring

Gradko International Ltd is a UKAS accredited laboratory and participates in laboratory performance and proficiency testing schemes. These provide strict performance criteria for participating laboratories to meet, thereby ensuring NO_2 concentrations reported are of a high calibre. The lab follows the procedures set out in the Harmonisation Practical Guidance. Gradko previously participated in the Workplace Analysis Scheme for Proficiency (WASP) for NO_2 diffusion tube analysis and the Annual Field Inter-Comparison Exercise. In April 2014, a new scheme, AIR PT10, was introduced. This is an independent analytical proficiency-testing (PT) scheme, operated by LGC Standards and supported by the Health and Safety Laboratory (HSL). AIR PT combines two long running PT schemes: LGC Standards STACKS PT scheme and HSL WASP PT scheme.

Defra and the Devolved Administrations advise that diffusion tubes used for Local Air Quality Management should be obtained from laboratories that have demonstrated satisfactory performance in the AIR PT scheme. Laboratory performance in AIR PT is also assessed, by the National Physical Laboratory (NPL), alongside laboratory data from the monthly NPL Field Intercomparison Exercise carried out at Marylebone Road, central London. A laboratory is assessed and given a ‘z’ score. A score of 2 or less indicates satisfactory laboratory performance.

Gradko International Ltd’s performance for 2017 is covered by rounds AR018, AR019, AR021 and AR022 of the AIR-PT scheme, for each round 100% of the laboratories results were deemed to be satisfactory based upon a z score of $\leq \pm 2$. In 2017, the tube precision for NO_2 Annual Field Inter-Comparison for Gradko International using the 20% TEA in acetone method was ‘good’ for the results of all 34 participating local authorities.

Appendix D: Maps of Monitoring Locations and AQMAs


Fareham & Gosport 2018
Annual Status Report
AQMAs & Continuous
Monitoring Sites (Fareham)
Key
Automatic Monitor
AQMA
Portland Street AQMA
Portland Street - FAR2
Gosport Road AQMA
Gosport Road - FAR1
FAREHAM
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Data sources: Ordnance Survey, FBC & GBC
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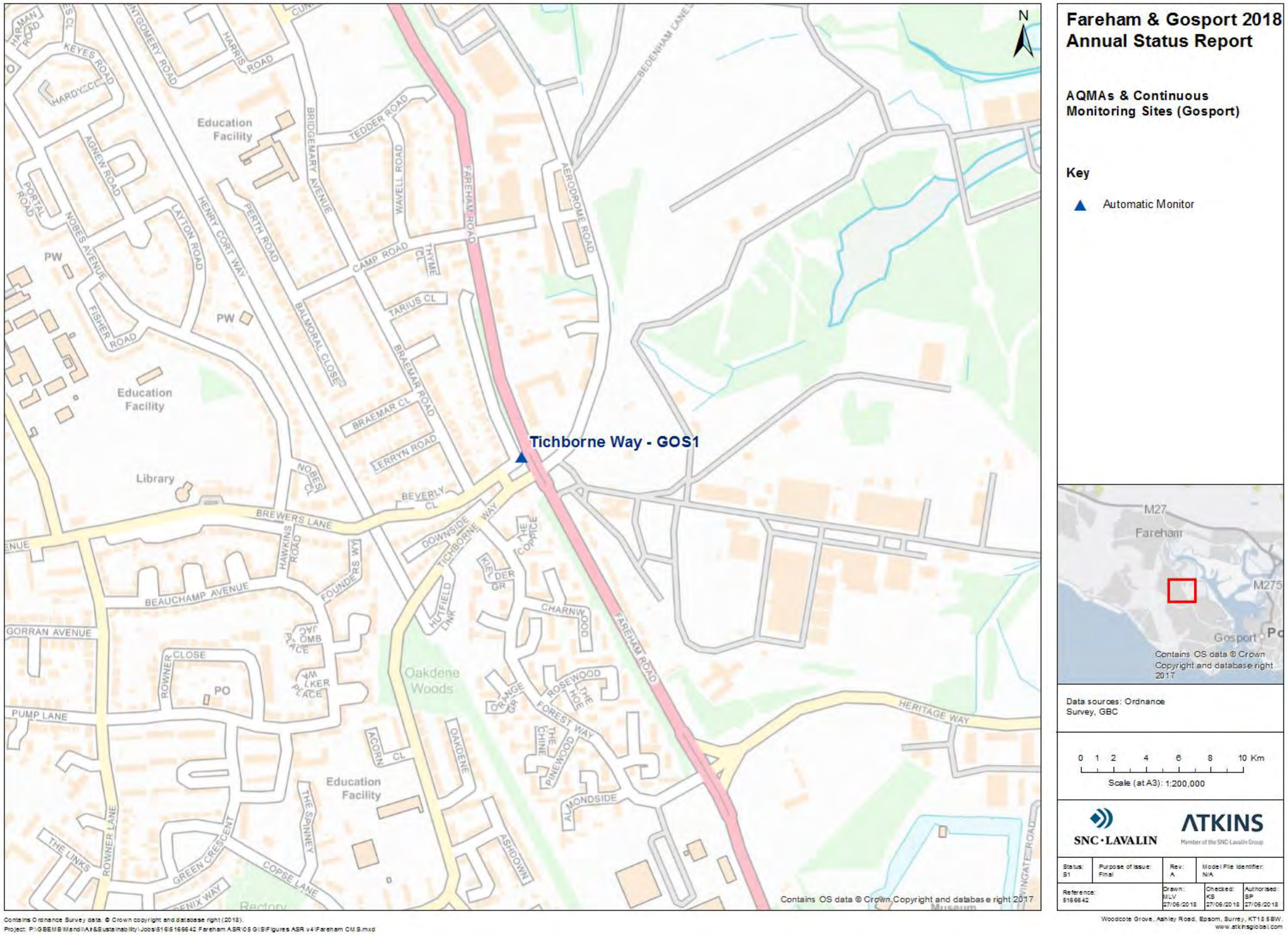
SNC·LAVALIN
ATKINS


Fareham & Gosport 2018
Annual Status Report
AQMAs & Continuous Monitoring Sites (Gosport)
Key
Automatic Monitor
Tichborne Way - GOS1
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Brewers Lane
Heritage Way
Aerodrome Road
Camp Road
Beauchamp Avenue
Gorran Avenue
Rowner Lane
Education Facility
Library
Oakdene Woods
M27
Fareham
M275
Gosport
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Data sources: Ordnance Survey, GBC
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SNC·LAVALIN
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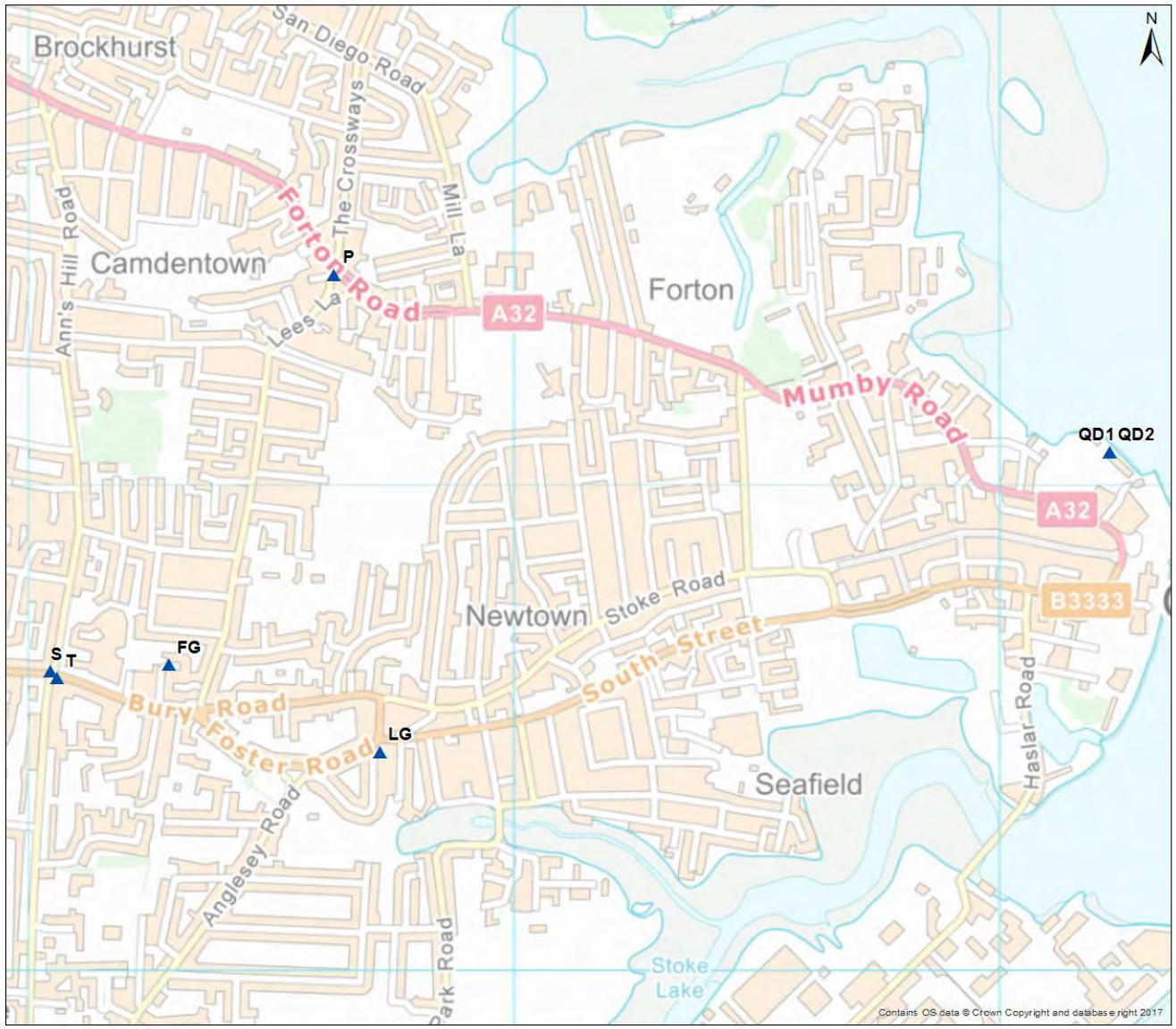

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Fareham & Gosport 2018 Annual Status Report

Diffusion Tube Locations Gosport

Key

▲ Diffusion Tube

Data sources: Ordnance Survey, FBC & GBC

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Scale (at A3): 1:7,500

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Status: S1	Purpose of issue: Final	Rev: A	Model File Identifier: N/A
Reference: 5166642	Drawn: MLW 27/06/2018	Checked: KS 27/06/2018	Authorised: SP 27/06/2018

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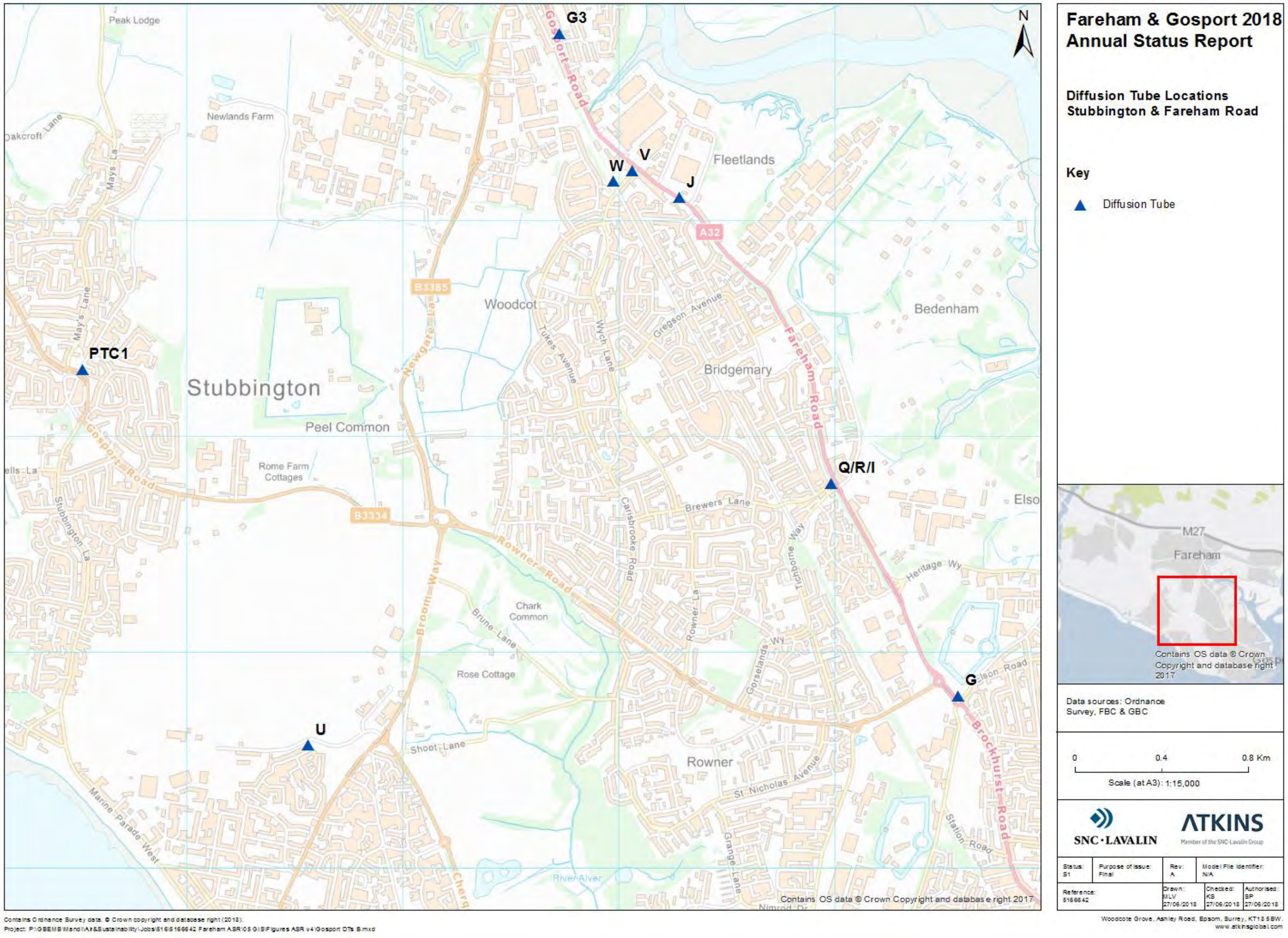
Fareham & Gosport 2018 Annual Status Report
Diffusion Tube Locations Stubbington & Fareham Road
Key
Diffusion Tube
G3
W
V
J
PTC1
Q/R/I
G
U
Stubbington
Fleetlands
Bedenham
Bridgemary
Woodcot
Peel Common
Rowner
Fareham Road
Gosport Road
Brockhurst Road
A32
B3385
B3334
M27
Fareham
Data sources: Ordnance Survey, FBC & GBC
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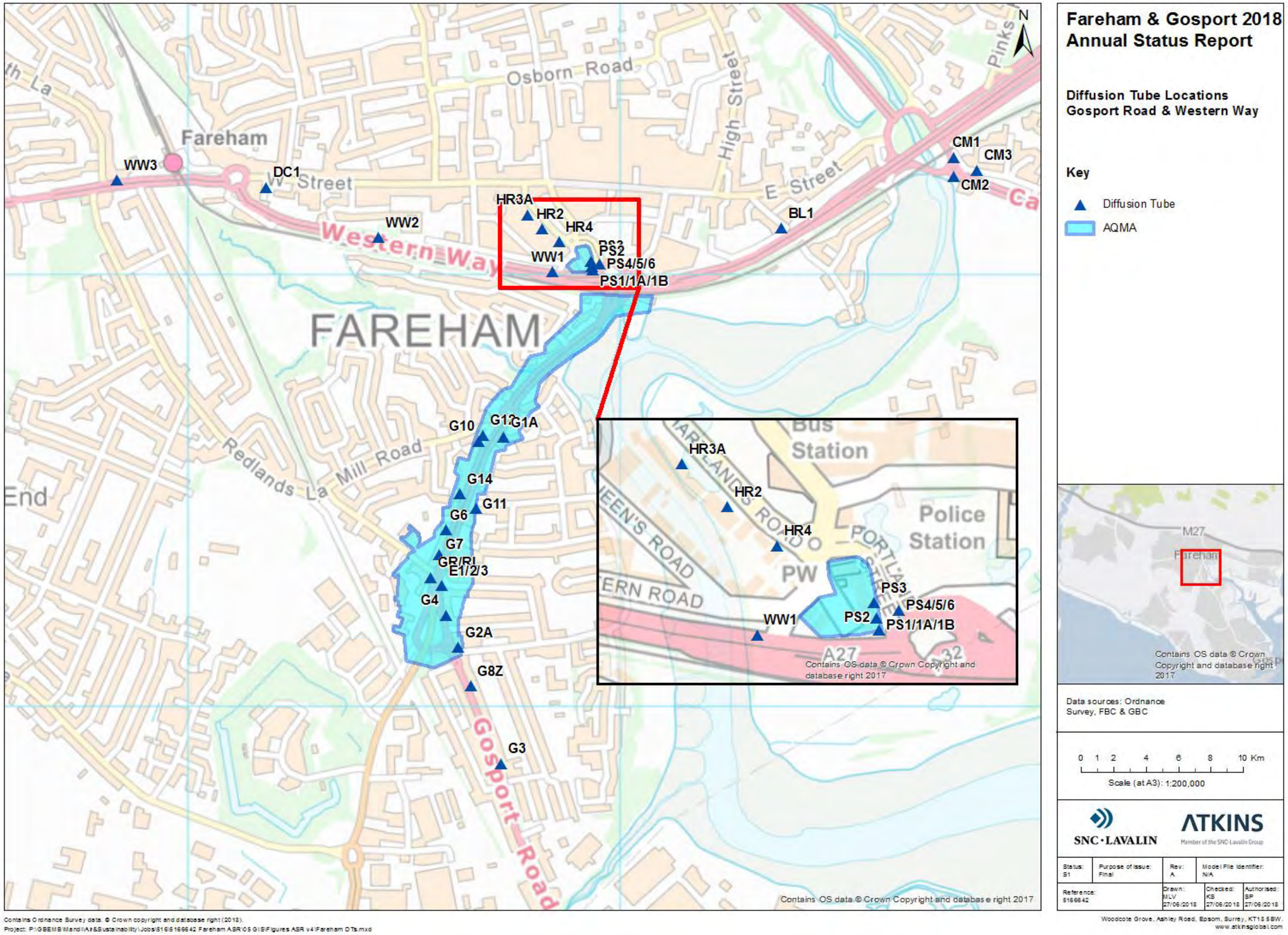
Fareham & Gosport 2018
Annual Status Report
Diffusion Tube Locations
Gosport Road & Western Way
Key
Diffusion Tube
AQMA
Data sources: Ordnance Survey, FBC & GBC
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ATKINS
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WW3
DC1
WW2
HR3A
HR2
HR4
WW1
PS3
PS2
PS4/5/6
PS1/1A/1B
BL1
CM1
CM2
CM3
G10
G12
G1A
G14
G11
G6
G7
E1/2/3
G4
G2A
G8Z
G3
FAREHAM
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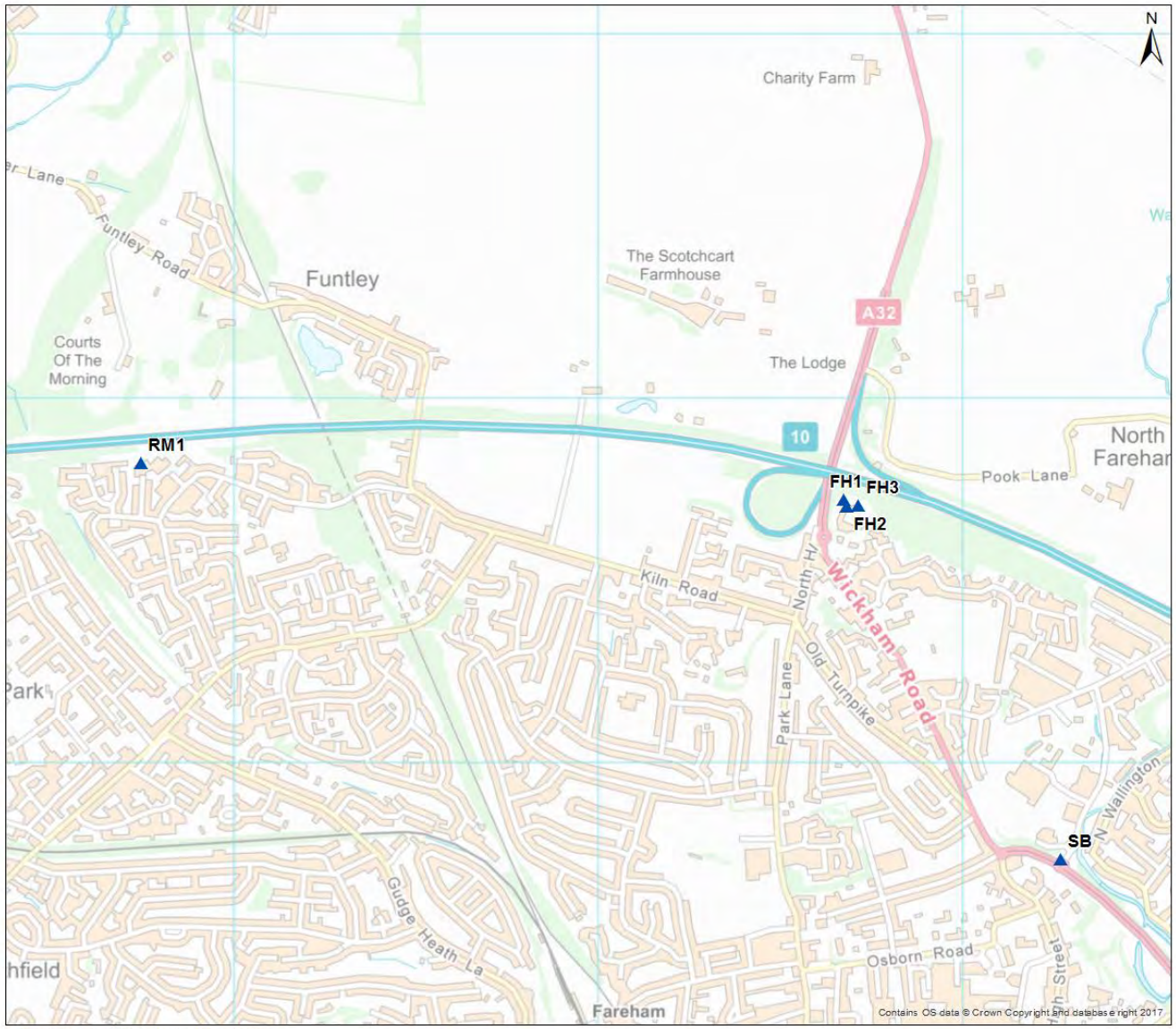
Western Way
Osborn Road
High Street
E Street
W Street
Redlands La
Mill Road
Gosport Road
Bus Station
Police Station
A27

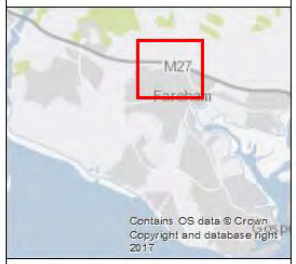


Fareham & Gosport 2018 Annual Status Report

Diffusion Tube Locations Wickham Road & M27

Key

▲ Diffusion Tube



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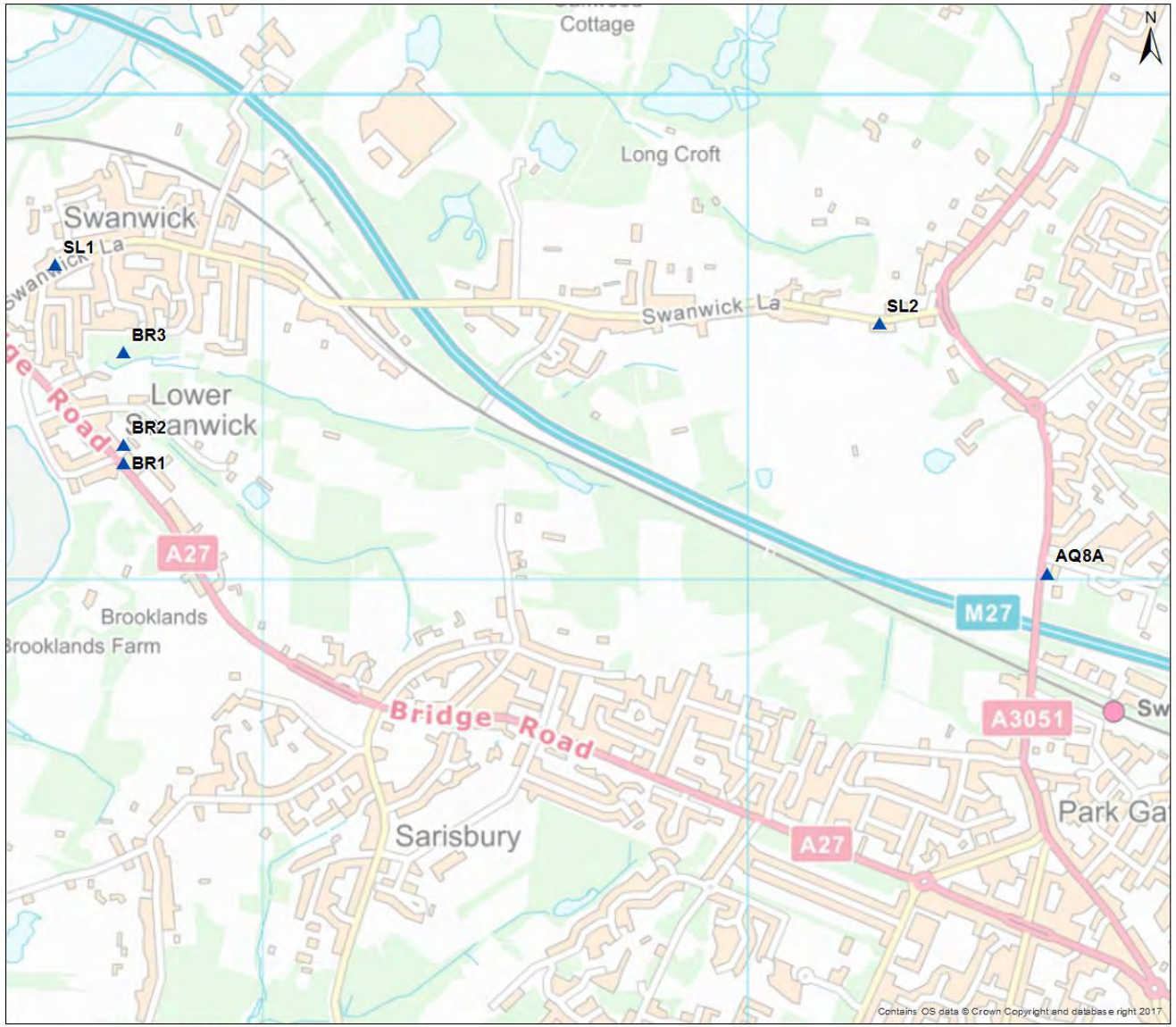
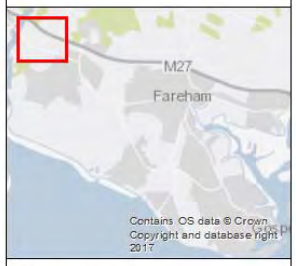


Fareham & Gosport 2018 Annual Status Report

Diffusion Tube Locations
Swanick, Sarisbury & Park Gate

Key

▲ Diffusion Tube



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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[11]	
	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

[11] 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
AQS	Air Quality Strategy
ASR	Air quality Annual Status Report
BRT	Bus Rapid Transit
Defra	Department for Environment, Food and Rural Affairs
EU	European Union
JAQU	Joint Air Quality Unit
KPI	Key Performance Indicator
LAPPC	Local Authority Pollution Prevention and Control
LAQM	Local Air Quality Management
NO_2	Nitrogen Dioxide
NO_x	Nitrogen Oxides
PCM	Pollution Climate Mapping
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
RTI	Real Time Information
SO_2	Sulphur Dioxide
STP	Sustainable Travel Plan

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