FAREHAM
BOROUGH COUNCIL

GOSPORT
Borough Council

Working in partnership

DRAFT

2020 Air Quality Annual Status Report (ASR)

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

June, 2020

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
Report Reference number	Fareham and Gosport 2020 Air Quality ASR
Date	June 2020

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].

The air pollutants of concern in Fareham and Gosport are nitrogen dioxide (NO_2) and fine particulate matter (PM_{10} and $PM_{2.5}$). The main source of these pollutants is road traffic, but other sources can include industry, domestic home heating and other transport (e.g. shipping and rail).

The government's National Air Quality Strategy (AQS) sets health-based objectives for air pollutants, including NO_2 and PM_{10}. Where these objectives are not met, local authorities must declare Air Quality Management Areas (AQMAs) and develop Air Quality Action Plans (AQAPs) to improve air quality.

Fareham Borough Council has declared two AQMAs due to measured and modelled exceedances of the annual mean NO_2 AQS objective in previous years. These are: Gosport Road AQMA, declared in 2006; and Portland Street AQMA, declared in 2007. The boundaries of both 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.

[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

An Air Quality Action Plan (AQAP) was produced in 2008 following the original 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. The AQAP is under review, although currently on hold until the impacts of covid-19 can be better understood.

Monitoring of both NO_2 and particulate matter (PM_{10}) undertaken in Fareham and Gosport in 2019 indicates that there were no measured exceedances of AQS objectives for either pollutant at locations of relevant exposure. Measured concentrations of both pollutants have been declining since 2014.

Monitoring of NO_2, using both continuous (automatic) monitors and passive diffusion tubes

Actions to Improve Air Quality

Measures being taken by Fareham and Gosport Borough Councils are detailed within the AQAP (2008). Specific updates are as follows:

- Fareham Borough Council is continuing to work with Hampshire County Council (as the relevant Highway Authority). Four measures were implemented in 2019, funded through Fareham's Local NO_2 Plan, developed in response to the 'UK Plan for Tackling Roadside NO_2 Concentrations'[7]. The measures are:
    - the provision of improved infrastructure for walking and cycling (completed November 2019);

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

  - the provision of real time information to additional bus stops to encourage greater use of buses;
  - improvements to operation of traffic signals on Market Quay to improve traffic flow along Eastern Way (between July and September 2019); and
  - the introduction of a scheme to encourage Fareham taxi drivers to upgrade from older diesel vehicles (Euro 5 or older) to newer, cleaner ones (Euro 6) (ongoing).

- Extension of the Eclipse Busway Bus Rapid Transit (BRT) continues, although works have been postponed due to covid-19. They are now scheduled to be complete by the end of 2021. The scheme objectives are to reduce journey time and peak hour congestion on and off the Gosport peninsula; to remove the transport barriers to growth; and to improve connectivity.
- Full funding has been secured for the Stubbington Bypass, which will divert traffic around the outskirts of Stubbington. Works were delayed by a public inquiry, but in May 2019, the government announced that the challenges had been rejected and that the scheme could go ahead as planned. Construction is currently underway, although has experienced some delays due to covid-19.
- In September 2019, Fareham Borough Council pledged a commitment to carbon neutrality by 2030 and established a Climate Change Working Group. The group is tasked with developing a Carbon Reduction Plan. Whilst focussed on greenhouse gas emissions, rather than ambient air quality, there will be significant overlap between those measures that are beneficial to both air quality and climate change.

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 45 diffusion tube locations within the monitoring network.

Data from the automatic monitoring sites is not yet fully ratified, due to delays on the part of the service provider, caused by covid-19. The raw data is presented here as illustrative only.

Where data are available for more than one year at a monitoring site, results at the majority of non-automatic monitoring sites in Fareham and Gosport in 2019 show a decline in annual mean NO_2 concentrations. In 2019, the annual mean 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).

Whilst currently unratified, the raw data from the automatic monitoring sites indicate that the annual mean and 24-hour mean AQS objectives for PM_{10} continue to be met in 2019 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 2015-2019 being 21 µg/m³ in 2015.

Defra feedback on the previous year's ASR (2019)[8] noted that Fareham Borough Council's AQAP is due for review and advises that the Council begin to draft a new updated AQAP. This is in the process of being actioned, although progress was delayed due to logistical issues associated with covid-19. The review is now on hold until the impact of covid-19 can be better understood.

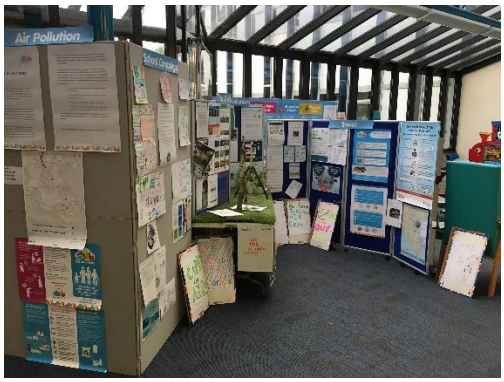
Defra further suggested a review of planning guidance to address cumulative emission impacts of planned developments. New policies specific to air quality have been included in the Draft Local Plan. The need for separate supplementary planning guidance will be kept under review.

The priority over the coming year is to work alongside Hampshire County Council to continue to monitor the progress of the four measures funded through the Local NO_2 Plan. The AQAP will be reviewed, once the impact of covid-19 can be better established/predicted, particularly in line with the pre-covid19 trends of reducing concentrations over time.

[8] Fareham and Gosport Environmental Health Partnership (2019) 2019 Air Quality Annual Status Report (ASR). June 2019.

Local Engagement and How to get Involved

As part of Clean Air Day (20th June 2019) Fareham and Gosport Councils established public information displays. The Fareham display was staffed and focussed on information about the four measures contained within the Local NO_2 Plan. Plans for similar displays in 2020 have been cancelled due to covid-19.



Clean Air Day displays in Fareham and Gosport

More information about air quality in Fareham and Gosport can be obtained via the following links:

- https://www.fareham.gov.uk/licensing_and_inspections/air_quality/intro.aspx
- https://www.gosport.gov.uk/article/1088/Air-quality
- http://www.airqualityengland.co.uk/
- https://www.wecare4air.co.uk/

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 home 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 to reduce traffic emissions and has health and mental health benefits. For example,

walking, scooting, or cycling on school journeys could save money and improve health and wellbeing whilst helping to reduce congestion and pollution in the local area. Walkers and cyclists could try to choose routes which are not as heavily trafficked (e.g. through parks and lesser used streets) to reduce the amount of pollution that they are exposed to. Hampshire County Council has information on a number of initiatives about walking and cycling (https://myjourneyhampshire.com/). Information on cycle routes in Fareham and Gosport is available online from both councils (Fareham: https://www.fareham.gov.uk/pdf/planning/cyclemap.pdf; Gosport: https://www.gosport.gov.uk/sections/living/cycling-in-gosport/)

- **Take public transport or car share:** For longer journeys, public transport or car sharing can save money and reduce the impact on the environment. 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 Tichborne Way in Gosport (https://www.firstgroup.com/portsmouth-fareham-gosport/routes-and-maps/eclipse).
- **When using a car:**
    - Drive smoothly to save fuel and reduce emissions. Don't rev your engine unnecessarily.
    - Stick to the speed limit. Very high speeds produce more emissions. At 70 mph a driver could be using up to 15% more fuel than at 50 mph.
    - Turn off the engine when cars are stationary.
    - Ensure tyre pressures are correct – lower tyre pressure increases fuel use and emissions.
    - Consider whether air conditioning is required – using it increases fuel consumption by up to 30%.
    - Remove unnecessary clutter from the boot to reduce engine workload.
    - If buying a car, consider its fuel economy and emissions – ultra-low emission vehicles (hybrid and electric vehicles) consume less fuel and produce fewer emissions. Whilst initial purchase costs for electric and hybrid cars may be higher, the running costs are lower. Government

grants are available to help with the purchase of some low emission vehicles: https://www.gov.uk/plug-in-car-van-grants/eligibility.

- **Home heating:**
    - Consider use of open fires or wood burning stoves, and whether steps can be taken 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).
    - Consider buying a 'low nitrogen oxide' boiler.

Daily national air quality updates, pollution forecasts and advice about how to protect yourself from the impacts of poor air quality can be found at: https://uk-air.defra.gov.uk/.

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 2019. 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 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: Map(s) of Monitoring Locations and AQMAs, which provides for a map of air quality monitoring locations in relation to the AQMA(s).

Gosport Borough Council currently does not have any 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
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	33.8	µg/m^3	AQAP, Gosport Road & Portland Street	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	36.5	µg/m^3	AQAP, Gosport Road & Portland Street	2008	www.fareham.gov.uk/PDF/licencing_and_inspections/aqap-gosportrd-portlandst.pdf

☐ **Fareham Borough Council confirms the information on UK-Air regarding their AQMA(s) is up to date**

Note, detailed information on Fareham's AQMAs are up to date at this reference: https://uk-air.defra.gov.uk/aqma/details?aqma_ref=438

But GIS layers have not been revised to account for 2017 boundary changes on the UK wide map: https://uk-air.defra.gov.uk/aqma/maps/

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

Defra's appraisal of last year's ASR found that the conclusions reached were acceptable for all sources and pollutants. The report was described as an example of good practice. Defra provided the following comments to help inform future reports. Commentary is provided *in italics*, to note how these comments have been addressed.

- The Air Quality Action Plan is out of date. It is noted that the Council regularly review the AQAP measures and introduce additional measures accordingly, however a review and update of the action plan would be beneficial to ensure continued progress. Fareham Borough Council note their intentions to update the AQAP, however they are encouraged to make this a priority for 2019.
    - *This is in the process of being actioned, although progress was delayed due to logistical issues associated with the covid-19. The review is now on hold until the impact of covid-19 on travel behaviour and fleet turnover can be better established / predicted.*
- 'Cumulative emission impacts' of planned developments are noted a key challenge/barrier. The Council may wish to consider a review of the core strategy and/or planning guidance to ensure air quality is adequately addressed. The development of a supplementary planning guidance document specific to air quality may also be beneficial in mitigating potential impacts on air quality.
    - *New policies specific to air quality have been included in the Draft Local Plan. The need for separate supplementary planning guidance will be kept under review.*
- The Council wish to maintain the status of their AQMAs at this time to ensure the measures outlined within the Local NO_2 Plan are effective before revocation is considered. This action is supported.
    - *Status of AQMAs will be kept under review.*
- QA/QC of monitoring data has been carried out, and some supporting evidence has been provided. The Council to provide detailed justification of their choice of bias adjustment factor and provide evidence to support their rejection of the

local factor. Evidence in the form of a screen capture of the national bias adjustment factor spreadsheet is welcomed to support the Council's choice.

  - *Evidence provided, as previously.*

- The Council state that the results from site CM2 have been distance-corrected. Calculations for this have not been provided, and the Council are encouraged to include this in future reports.

  - *Calculations provided for the 2020 ASR.*

Fareham and Gosport Borough Councils have taken forward a number of direct measures during the current reporting year of 2019 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 2019 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 for 2019 are related to the development of a Local NO_2 Plan for Fareham.

- Fareham Borough Council was identified within the 'UK Plan for Tackling Roadside NO_2 Concentrations' as being one of the local authorities where the annual mean European Limit Value for NO_2 (40 µg/m³) is at risk of being exceeded in future years (known as 'PCM non-compliance'). As a result, Fareham Borough Council was required to develop a 'Local NO_2 Plan' to achieve compliance with the Limit Value in the shortest possible time. In March 2019, funding of £1.4 million was confirmed for four measures, which have now been implemented:

  - provision of improved infrastructure for walking and cycling (completed November 2019);

  - provision of real time passenger information to additional bus stops to encourage greater use of buses (completed January 2020);

  - improvements to operation of traffic signals on Market Quay to improve traffic flow along Eastern Way (completed September 2019); and

- continuation of a scheme to encourage Fareham taxi drivers to upgrade from older diesel vehicles (Euro 5 or older) to newer, cleaner ones (Euro 6).

The revised taxi scheme has been delivered by Fareham Borough Council and the other three measures coordinated by Hampshire County Council as the relevant Highway Authority. Monitoring and evaluation is being undertaken in accordance with the Local NO_2 Plan framework – including ongoing air quality monitoring and ANPR surveys of fleet changes. The ANPR repeat survey was completed in late Feb-early March 2020 and data submitted to DfT, but due to covid-19 issues, processed data from DVLA has yet to be received to complete the analysis of fleet change.

The review of Fareham Borough Council's AQAP is scheduled, but currently on hold until the impact of covid-19 on travel behaviour and fleet upgrade can be better understood / predicted.

Furthermore, in September 2019, Fareham Borough Council pledged a commitment to carbon neutrality by 2030 and established a Climate Change Working Group. The group is tasked with developing a Carbon Reduction Plan. Whilst focussed on greenhouse gas emissions, rather than ambient air quality, there will be significant overlap between measures that are beneficial to both air quality and climate change.

The principal challenges and barriers to implementation that Fareham and Gosport anticipate facing are:

- understanding short/longer-term impacts of covid-19 on travel behaviour and fleet turn over;
- limited funding and staffing resource to progress all areas of AQAP and Local NO_2 Plan delivery alongside ongoing air quality monitoring, reporting and legislative requirements. This has been further impacted by local authority staffing requirements in response to covid-19;
- cumulative emission impacts of development planned for the area (the requirement for specific supplementary planning guidance will be kept under review);
- uncertainty regarding the likely effectiveness of measures:

- taxi incentives for vehicle upgrades rely on the 'on-road' emission performance of Euro 6 vehicles being significantly better than Euro 5 and below; and
- measures relying on modal shift from private cars to public transport, walking or cycling, require individuals to opt to change their travel habits, for which uptake cannot be guaranteed.

Progress on the proposed Stubbington Bypass has been slower than expected. The proposed bypass has the potential to affect air quality in both Fareham and Gosport (both positively and negatively). Planning Permission was granted in October 2015, and full funding has now been secured. The 2019 ASR reported that work was likely to start on the ground in 2019 and will take approximately two years to complete. Progress was delayed by a public inquiry held in November 2018, following objections from a local resident. In May 2019, the government announced that the challenges had been rejected and that the scheme could go ahead as planned. Construction is ongoing, with a pause in activity between March and May 2020, due to covid-19.

Fareham Borough Council anticipates that the measures stated above and in Table 2.2 will ensure that the annual mean NO_2 air quality objective is achieved in the Portland Street and Gosport Road AQMAs and that it may be possible to revoke both AQMAs after 2021. However, the impact of covid-19 will need to be fully understood.

Table 2.2 – Progress on Measures to Improve Air Quality

Measure No.	Measure [Green = most effective; Red = least effective]	EU Category	EU Classification	Date Measure Introduced	Organisations involved	Funding Source	Key Performance Indicator	Reduction in Pollutant / Emission from Measure	Progress to Date	Estimated / Actual Completion Date	Comments / Barriers to implementation
1	Development of Fareham Borough Council's Local Air Plan to comply with the EU Limit Value for NO2 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	2019	FBC and HCC; Funded by Defra/DfT	Defra/DfT (Joint Air Quality Unit)	Submission of Outline Business Case to Defra/DfT and subsequent funding of measures	Reduction of NOX (and PM) emissions	Outline Business Case submitted in Dec-18 and confirmation that four measures would be funded received in Mar-19.	Complete	Measures were selected that can be implemented in 2019, to reduce NO2 concentrations as quickly as possible. The approach aims to achieve compliance in 2020.
1a	To implement a taxi replacement incentive scheme as part of Local NO2 Plan	Promoting Low Emission Transport	Taxi emission incentives	2018	FBC	Defra/DfT (Joint Air Quality Unit)	Decrease in proportion of pre-Euro 6 diesel taxis in local taxi fleet compared with lower emission alternatives	Reduction of NOX emissions from taxis	Jan-18: Secured funding for taxi replacement initiative scheme, to replace pre-Euro 6 diesel vehicles with ultra-low emission vehicles Mar-19: Secured funding to extend the incentive scheme. Euro 5 or earlier diesel taxi owners can now replace them with a Euro 6 and obtain up to £2,450 towards running costs. Up to 130 older taxis could be replaced. June-20: Scheme was in place up to 31st December 2019, a total of 38 Euro 5 or earlier diesel taxis upgraded in that period. The fleet started at 225 older diesel taxis and this was reduced to 145 at the end of scheme. This has reduced further to 103.	2018-2021	Funding secured in Jan-18 was used to establish an early scheme. Unfortunately, take up was low, thought to be due to stringency of the terms. Since securing new funding via the Local NO2 Plan in Mar-19, FBC has been working with Defra/DfT to explore how the schemes can be joined together and how take up can be improved. The scheme was in place up to 31 Dec 2019. A total of 38 Euro 5 or earlier diesel taxis upgraded in that period. The fleet started at 225 older diesel taxis and this was reduced to 145 at the end of the scheme. This has since further reduced to 103. A licensing change meant that no more vehicles plated for the first time or plate transfers could be to a standard lower than Euro 6. A number of drivers have retired and their vehicles with them.
1b	To improve infrastructure for walking and cycling as part of Local NO2 Plan	Transport Planning and Infrastructure	Cycle network	2019	HCC	Defra/DfT (Joint Air Quality Unit)	Complete works on four route corridors Growth in cycling mode share. To continue to provide specific information on the Councils website of cycle routes in and around the AQMAs	Reduction of NOX (and PM) emissions	Secured funding for cycle infrastructure improvement measures along four route corridors, extending HCC work via its Local Cycling and Walking Implementation Plan (LCWIP). All of the schemes were delivered by January 2020 so no impact in 2019.	Complete	The potential impact has been appraised as regards the potential growth of cycling mode share. At the same time, it is noted that this is a voluntary measure requiring individuals to opt to change their travel habits, for which uptake cannot be guaranteed.
1c	To provide Real Time Passenger Information (RTPI) at bus stops as part of Local NO2 Plan	Transport Planning and Infrastructure	Public transport improvements-interchanges stations and services	2019	HCC	Defra/DfT (Joint Air Quality Unit)	Installation of RTPI at additional bus stops Growth in public transport mode share. Annual number of passenger trips.	Reduction of NOX (and PM) emissions	Secured funding for provision of RTPI at additional bus stops. 55 bus stops across the local area have been identified that do not currently have RTPI, which is acknowledged as an enabler of	Complete	This measure builds on existing RTPI provision at other bus stops. It is noted that this is a voluntary measure requiring individuals to opt to change their travel habits, for which uptake cannot be guaranteed.

Measure No.	Measure [Green = most effective; Red = least effective]	EU Category	EU Classification	Date Measure Introduced	Organisations involved	Funding Source	Key Performance Indicator	Reduction in Pollutant / Emission from Measure	Progress to Date	Estimated / Actual Completion Date	Comments / Barriers to implementation
									increasing public transport uptake. These schemes were delivered by January 2020		
1d	To improve operation of traffic signals on Market Quay and improve traffic flow along Eastern Way as part of Local NO2 Plan	Traffic Management	UTC, Congestion management, traffic reduction	2019	HCC	Defra/DfT (Joint Air Quality Unit)	Install SCOOT signal optimisation Increase traffic speeds at Quay Street roundabout approaches	Reduction of NOX (and PM) emissions	Secured funding for SCOOT traffic signal optimisation at Quay Street junction of A27 and A32. This should reduce congestion and therefore traffic emissions. This was delivered by January 2020.	Complete	A feasibility study indicated that congestion will be reduced at approaches to the roundabout, but it is less likely to influence vehicle speeds on the A27 / Gosport Road, and would have a negligible influence on traffic flows. Any benefits may therefore by highly localised.
2	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	2018	FBC	Local Authority	Taxi standards for new licenses set at a minimum of Euro 6 for diesel vehicles.	Reduction of vehicle emissions	Amendments made to taxi licensing such that licenses are no longer be granted to diesel vehicles which do not meet Euro 6 emission standard. Provision of "Switch off your engine" signage in taxi ranks and bus station. Articles in taxi and private hire newsletters on air quality issues.	Ongoing	The air quality impact of the scheme depends on the rate at which the local taxi vehicle fleet is renewed and the relative difference in real-world emissions between Euro 6 and older diesel vehicles. There is significant uncertainty regarding the on-road performance of these vehicles. Estimates have been made using the latest emission factors from Defra.
8	To examine the feasibility of erecting signs to identify the AQMAs	Public Information	Other	2017	FBC	Local Authority	To erect air quality awareness signs along the A32 Gosport Road in Fareham	Reduction of NOX emissions	Complete	Complete	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.
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	Ongoing	HCC	County	Annual progress towards the programmed 19 schemes listed in the study.	Reduction of NOX and PM emissions	Key road schemes: (i) Funding has been secured for the Stubbington Bypass. Progress delayed by a Public Inquiry. In May 2019, the scheme was given go ahead. Construction currently underway, although some delays due to covid-19. (ii) The Wellborne planning application was submitted to the Council in 2017. Amendments to the application were received in Jan-19, including a redesigned J10 layout for the M27 and revisions to the local road network. Outline planning permission was granted in Oct 2019.	Ongoing	The STAG transport study informed the Local Transport Plan (LTP3, 2011) and the subsequent Fareham and Gosport Transport Statements (2013)9.

[9] https://www.hants.gov.uk/transport/strategies/transportstrategies

Measure No.	Measure [Green = most effective; Red = least effective]	EU Category	EU Classification	Date Measure Introduced	Organisations involved	Funding Source	Key Performance Indicator	Reduction in Pollutant / Emission from Measure	Progress to Date	Estimated / Actual Completion Date	Comments / Barriers to implementation
15	Provide a bus/rail interchange facility at Fareham rail station	Transport Planning and Infrastructure	Public transport improvements-interchanges stations and services	Ongoing	HCC/TfSH	County	Provision of a transport interchange at Fareham rail station	Reduction of NOX and PM 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.	Complete	Work completed under the Transforming Cities Fund, led by HCC.
16	To provide a suitable alternative to the light rapid transit system linking Fareham, Gosport and Portsmouth	Promoting Travel Alternatives	Other	Ongoing	HCC/TfSH	County	Annual progress against the key measures and timeframes set out for the BRT phases	Reduction of NOX emissions	The Eclipse Busway extension is currently under construction and will extend the existing BRT 1 km further into Gosport. In April 2019, planning permission was granted to amend the southern section of the scheme to provide a ramped connection between the busway and Rowner Road.	Ongoing	The enhanced scheme will retain Rowner Road bridge and the existing shared-use route for pedestrians and cyclists under Rowner Road. The revision will also avoid the need for a prolonged closure of Rowner Road whilst the new busway connection is constructed. A further £1.4m of additional funding from DfT's Transforming Cities Fund, has been secured to meet the additional cost.
19a	Increase numbers of people using local bus services	Transport Planning and Infrastructure	Other	Ongoing	HCC/First	County	Annual number of passenger trips using BRT services	Reduction of NOX and PM 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. Also enhanced by new measure to implement additional RTPI at bus stops.	Ongoing	N/A
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	Ongoing	HCC	County	All schools in Fareham close to the AQMAs have implemented School Travel Plans	Reduction of NOX emissions	Continued liaison with HCC School Travel Planning group. Diffusion tubes have been sited at several locations adjacent to local schools.	Ongoing	Diffusion tube data has been collected at schools for two month periods during 2017, 2018 and 2019. All raw monthly results recorded were below the level of the annual mean air quality objective for NO_2. The results were not included in the ASR, as they do not meet data capture requirements for annualisation.
25	To implement the Fareham Town Access Plan proposals where they have an impact on air quality in the AQMAs	Traffic Management	Other	Ongoing	HCC/FBC	Local Authority, County	Implementation of proposals	Reduction of NOX 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	The Town Access Plan informed the Fareham Transport Statement (2013)[10].
26	To continue to inspect premises and take appropriate enforcement action in	Environmental Permits	Other	Ongoing	FBC	Local Authority	Submission of Defra return	Reduction of emissions from permitted activities	All due inspections undertaken in 2018/19. Return submitted to Defra on time	Ongoing	Continuing programme for inspections.

[10] https://www.hants.gov.uk/transport/strategies/transportstrategies

Measure No.	Measure [Green = most effective; Red = least effective]	EU Category	EU Classification	Date Measure Introduced	Organisations involved	Funding Source	Key Performance Indicator	Reduction in Pollutant / Emission from Measure	Progress to Date	Estimated / Actual Completion Date	Comments / Barriers to implementation
	respect of the Environmental 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	Ongoing	FBC/GBC	Local Authority	Examples of where FBC requires higher provision of cycle facilities or lower car parking facilities than the HCC standards for new developments.	Reduction of NOX and PM emissions	Planning updates: (i) Ongoing implementation of LDF policies to influence air quality. (ii) Fareham's Draft Local Plan 2036 will require new development to offer maximum flexibility in travel modes, minimise emissions and contribute to reduction of transport impacts on local air quality, and provide electric vehicle charging infrastructure.	Ongoing	Planning processes ongoing
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	Ongoing	FBC	Local Authority	(a) To ensure compliance with the Defra timetable. (b) To maintain air quality reports on the FBC website	N/A	FBC submitted a Local NO2 Plan to Defra/DfT (Dec-18) to achieve compliance with the annual mean EU Limit Value for NO2 in the shortest possible time. Confirmation of funding was received Mar-18.	Ongoing	New measures included, barriers for implementation are listed above, particularly relevant is the short time frame for implementation.
34	To continue to work in partnership with neighbouring authorities and others for the control of air pollution and continued improvement of air quality	Policy Guidance and Development Control	Other policy	Ongoing	FBC	Local Authority	Minutes of meetings	Reduction of NOX and PM emissions	A technical working group was established to develop and implement FBC's Local NO_2 Plan, including FBC (Environmental Health, Planning and Transport Planning), GBC, HCC and First Bus.	Ongoing	Meetings are 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	Ongoing	FBC	Local Authority	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	Defra feedback on the 2018 ASR noted that FBC may consider revoking both AQMAs. The situation will be monitored following implementation of the Local NO_2 Plan.
38	To continue to place air quality reports on the FBC website	Public Information	Via the Internet	Ongoing	FBC	Local Authority	Annually (or as required) e-mail stakeholder bodies send a message each time there is a website report update	N/A	The 2019 ASR is listed on FBC website.	Ongoing	N/A
39	To investigate the most effective method of disseminating air quality information to the public and assess the	Public Information	Other	Ongoing	FBC	Local Authority	Annual review of information dissemination options in line with UK best practice and discussions with neighbouring authorities	N/A	Seeking to raise awareness of local and national air quality matters: (i) Link to all three monitoring stations on FBC website. (ii) Advice to the public on reducing emissions and avoiding exposure on	Ongoing	N/A

Measure No.	Measure [Green = most effective; Red = least effective]	EU Category	EU Classification	Date Measure Introduced	Organisations involved	Funding Source	Key Performance Indicator	Reduction in Pollutant / Emission from Measure	Progress to Date	Estimated / Actual Completion Date	Comments / Barriers to implementation
	feasibility of employing this method for FBC								FBC and GBC websites. (iii) Comms undertaken and planned as part of the Local NO2 Plan: public reports were submitted to the Council Executive; consultation was undertaken in association with specific measures.		
40	To promote awareness via the FBC website of other air quality information web sites	Public Information	Via the Internet	Ongoing	FBC	Local Authority	Annual review of the Council website content in line with accepted UK best practice	N/A	Ongoing process of updating FBC website with the aim of providing an up to date, useful and informative public resource for air quality and to raise awareness of local and national air quality matters.	Ongoing	N/A

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.

No areas within Fareham or Gosport are considered likely to exceed the EU Limit Value for $PM_{2.5}$ (an annual average concentration of 25 µg/m³), but information from Defra background concentration mapping[11] indicates that in 2019, there are areas in Fareham and Gosport where concentrations of $PM_{2.5}$ exceed the World Health Organisation Target Level of 10 µg/m³, cited within the 2019 Clean Air Strategy[12]. These areas are in central Fareham, in heavily populated areas south of the M27 motorway and adjacent to the A32 and industrial areas in Gosport.

Monitored annual mean concentrations of PM_{10} at GOS1 (Tichborne Way) were 17.4 µg/m³ in 2019. In accordance with Technical Guidance LAQM.TG16 (7.107 – 7.111), this concentration has been multiplied by the nationally derived correction factor of 0.7, to provide an estimated annual average $PM_{2.5}$ concentration of 12.2 µg/m³ at this location.

Public Health England estimated that 59 adult deaths per annum are attributable to $PM_{2.5}$ air pollution in Fareham, and 40 per annum in Gosport (based on 2010 figures)[13]. In both Fareham and Gosport, the fraction of mortality attributable to particulate air pollution is 5.7%, which is higher than the averages for Hampshire

[11] Estimates of current and future year background pollutant concentrations in the UK are available on the Defra UK-Air website. Background estimates, which are a combination of measured and modelled data are available for each one-kilometre grid square throughout the UK. The mapped concentrations have a base year of 2017, which is the basis for future estimates up to 2030. The background estimates include contributions from all source sectors, e.g. road transport, industry and domestic and commercial heating. The average annual mean background $PM_{2.5}$ concentrations in Fareham is 9.6 µg/m³ and 9.4 µg/m³ in Gosport, although estimates for some grid squares are in excess of 10 µg/m³. Data available online at: https://uk-air.defra.gov.uk/data/laqm-background-maps?year=2017.

[12] Defra, 2019. Clean Air Strategy 2019. Available online at: https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/770715/clean-air-strategy-2019.pdf

[13] Public Health England (2014) Estimating Local Mortality Burdens Associated with Particulate Air Pollution. Available online at: https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/332854/PHE_CRCE_010.pdf

(5.4%), and England (5.2%)[14]. Overall, indicators for life expectancy in Fareham are in line with the rest of Hampshire and higher than the average for England as a whole. In Gosport, life expectancy is slightly lower than the average for Hampshire, but in line with the average for England. Mortality rates from cancer, heart disease and respiratory disease are all lower than the national averages in Fareham, and in line with national averages in Gosport.

Defra estimates[12] that 70-75% of annual average background $PM_{2.5}$ concentrations are attributable to secondary particulates and natural sources. Of the remaining primary particulate, 15-20% is from domestic home heating, with approximately 3% from both industrial and road traffic sources, and a further 5% from 'other' sources, which include shipping, aircraft and off-road emissions.

Fareham and Gosport Borough Councils work closely with public health specialists to share information and deliver improvements in air quality. A joint public information leaflet has been produced with NHS Hampshire[15] to outline the health impacts of air pollution and set out practical steps that the public can take to improve air quality and reduce their own exposure.

Domestic home heating is estimated to be the highest contributor of primary $PM_{2.5}$ across the country. Whilst neither Fareham or Gosport is declared as a Smoke Control Area, Fareham's air quality webpage[16] prominently displays information on reducing air quality impacts from open fires and wood burning stoves, providing references to practical guides by Defra[17] and professional chimney sweeps[18].

Defra's Emission Factors Toolkit estimates that for road transport, approximately 85% of particulate emissions are 'non-exhaust emissions', generated from a combination of brake and tyre wear and resuspension from the road surface. Effectively addressing particulates from road transport therefore requires a reduction in overall trips, rather than simply switching to low emission vehicles. Promotion of sustainable transport is a key part of Fareham's AQAP, and the focus of a number of the measures in Table 2.2. Additionally, two of the four measures recently funded

[14] Public Health Outcomes Framework. Indicator 3.01: https://fingertips.phe.org.uk/profile/public-health-outcomes-framework
[15] https://www.fareham.gov.uk/pdf/licencing_and_inspections/Airqualityleaflet.pdf
[16] https://www.fareham.gov.uk/licensing_and_inspections/air_quality/intro.aspx
[17] https://consult.defra.gov.uk/airquality/domestic-burning-of-wood-and-coal/supporting_documents/open%20fires%20wood%20burning%20stoves%20%20guideA4update12Oct.pdf
[18] http://edition.pagesuite-professional.co.uk/html5/reader/production/default.aspx?pubname=&pubid=c88a0e8e-aafd-4917-bfcb-31d6aef97027

under Fareham's Local NO_2 Plan are aimed at reducing car use, through: (i) improved infrastructure for walking and cycling, and; (ii) provision of real time passenger information for additional bus stops. These measures will have a direct and proportional impact on $PM_{2.5}$.

The low emission taxi incentive scheme has provided grants for taxi operators to upgrade pre-Euro 6 diesels to either Euro 6 diesel, petrol hybrids or ultra-low emission vehicles. Hybrid and low emission vehicles produce considerably lower exhaust emissions of $PM_{2.5}$ than diesel equivalents.

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 2019. Table A.1 in Appendix A shows the details of the sites. NB. Local authorities do not have to report annually on the following pollutants: 1,3 butadiene, benzene, carbon monoxide and lead, unless local circumstances indicate there is a problem. National monitoring results are available at www.airqualityengland.co.uk and https://www.wecare4air.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 45 sites during 2019. Table A.2 in Appendix A shows the details of the sites.

Maps showing the location of the monitoring sites are provided in Appendix D. Further details on Quality Assurance/Quality Control (QA/QC) 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[19], “annualisation” (where the data capture falls below 75%), and distance correction[20]. Further details on adjustments are provided in Appendix C.

[19] https://laqm.defra.gov.uk/bias-adjustment-factors/bias-adjustment.html
[20] Fall-off with distance correction criteria is provided in paragraph 7.77, LAQM.TG(16)

3.2.1 Nitrogen Dioxide (NO_2)

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

Table A.3 represents the concentration at the location of the monitoring site, following the application of bias adjustment and annualisation, as required (i.e. the values are exclusive of any consideration to fall-off with distance adjustment).

For diffusion tubes, the full 2019 dataset of monthly mean values is provided in Appendix B. Note that the concentration data presented in Table B.1 includes distance corrected values, only where relevant.

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

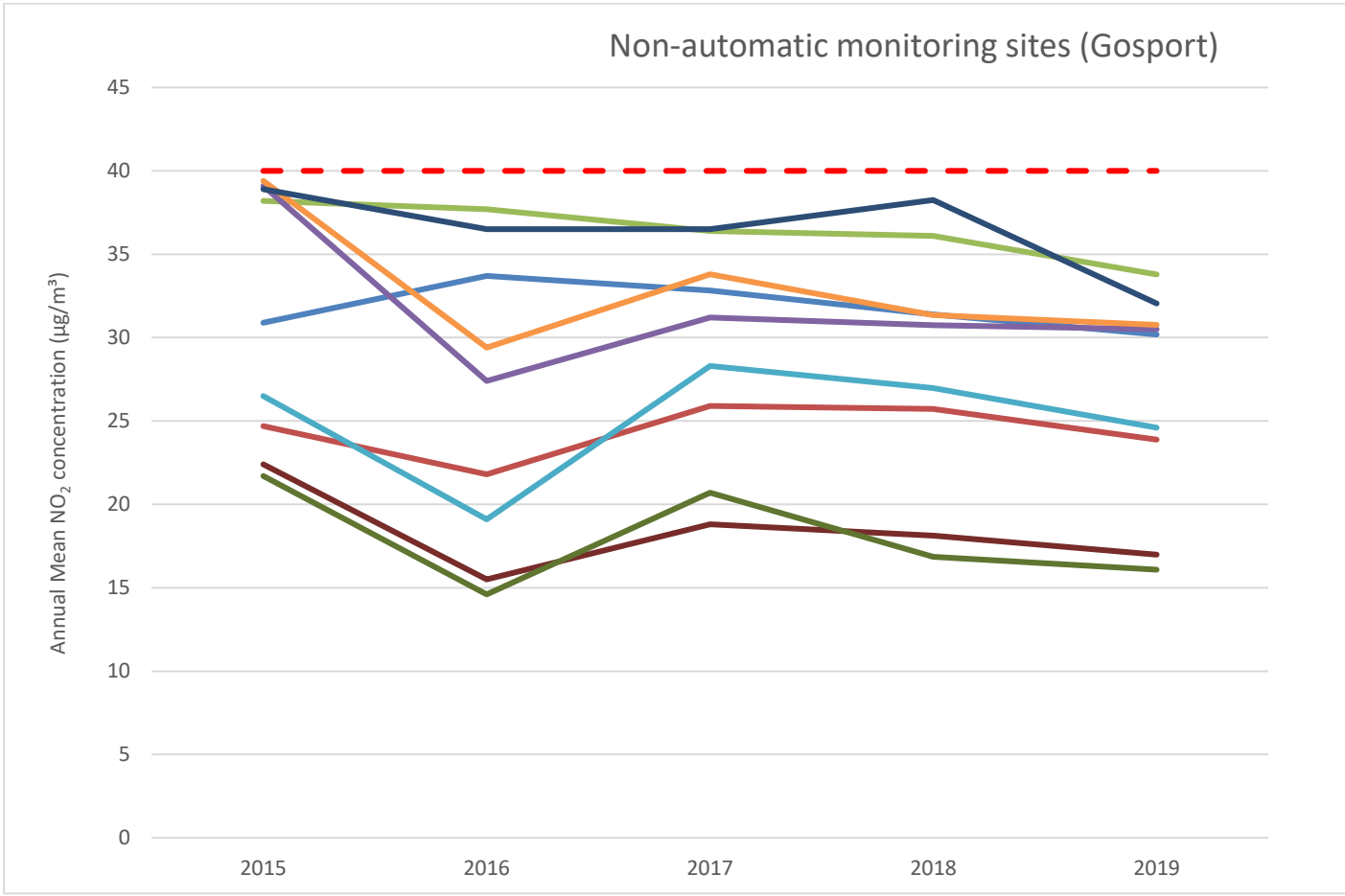


Figure A.3 – Trends in Annual Mean NO_2 Concentrations (Fareham – Non-automatic Monitoring Sites)

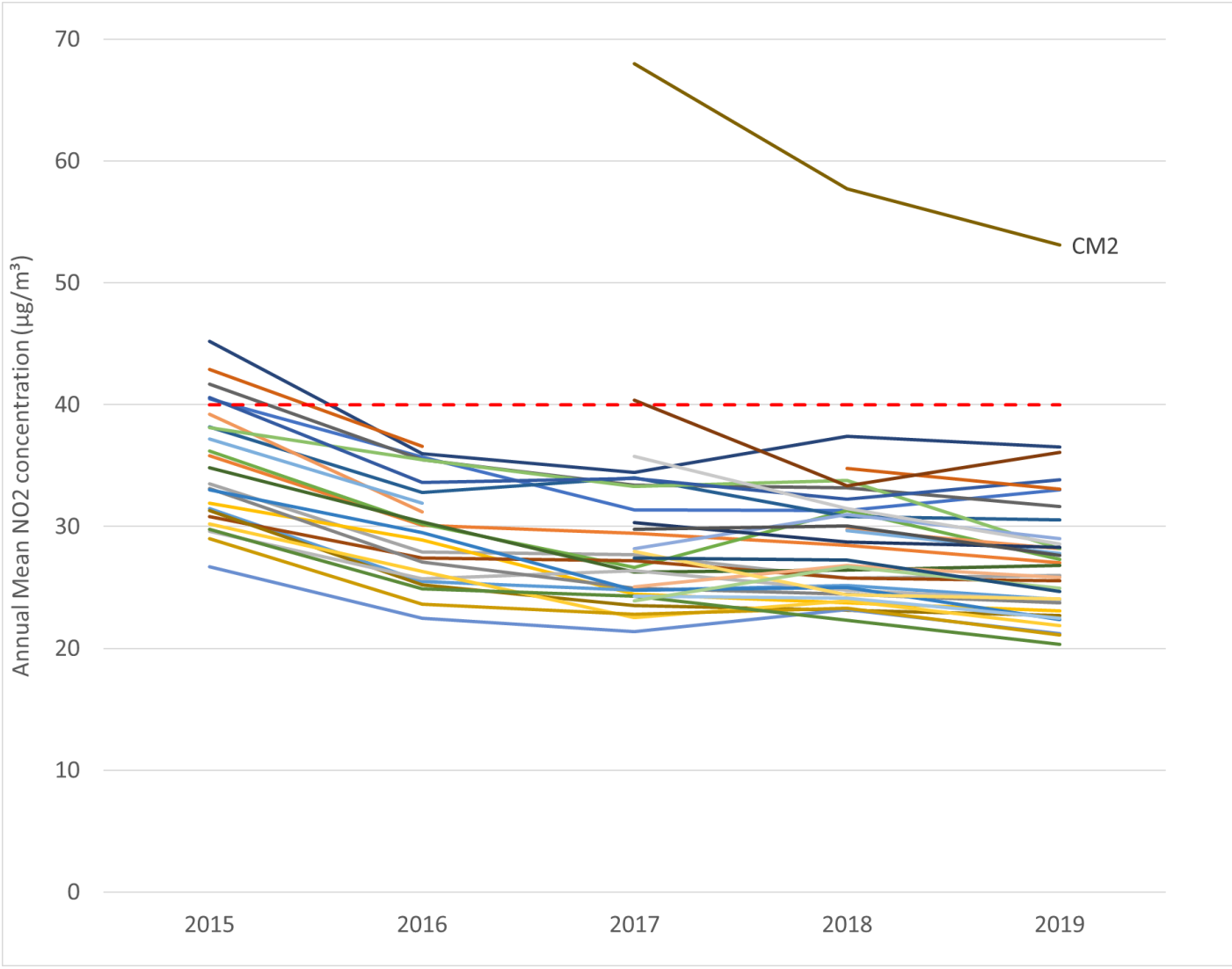


Table A.4 in Appendix A compares the unratified continuous monitored NO_2 hourly mean concentrations for the past 5 years with the air quality objective of 200µg/m^3, not to be exceeded more than 18 times per year.

Data from the automatic monitoring sites is not yet fully ratified, due to delays on the part of the service provider, caused by covid-19. The raw data is presented here as illustrative only.

In 2019, measured concentrations in excesss of the annual mean NO_2 air quality objective were recorded at two sites in Fareham (CM2 and A27, where bias adjusted concentrations of 57.7 µg/m^3 and 44.4 µg/m^3 were recorded respectively).

- CM2 is a kerbside site on Cams Hill, adjacent to the Delme Roundabout. This measured concentration has 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 this correction the concentration was 34.6 µg/m³, below the annual mean air quality objective of 40 µg/m³.

- A27 is a kerbside site on the A27, by the Bath Lane Underpass. This diffusion tube was added to provide monitoring data for the Local NO_2 Plan. No residential properties are adjacent to the site – it reflects a midlink PCM non-compliance modelled location. The nearest relevant exposure is 29 metres away. With distance correction, the NO_2 concentration at the closest location of relevant exposure is estimated to be 25.9 µg/m³, below the annual mean air quality objective of 40 µg/m³. Results are presented in Table B.1. Details of calculations are provided in Appendix C.

There were no exceedences of the 1-hour mean objective at the automatic monitoring sites. None of the non-automatic monitoring 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 unratified and adjusted monitored PM_{10} annual mean concentrations for the past 5 years with the air quality objective of 40µg/m³.

Table A.6 in Appendix A compares the unratified continuous monitored PM_{10} 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.

Data from the automatic monitoring sites is not yet fully ratified, due to delays on the part of the service provider, caused by covid-19. The raw data is presented here as illustrative only.

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}.

3.2.3 Particulate Matter ($PM_{2.5}$)

Raw, unratified monitored concentrations of PM_{10} at GOS1 (Tichborne Way) were 17.4 µg/m³ in 2019. In accordance with Technical Guidance LAQM.TG16 (7.107 –

7.111), this concentration has been multiplied by the nationally derived correction factor of 0.7, to give an estimated annual average $PM_{2.5}$ concentration of 12.2 µg/m³ at this location.

Appendix A: Monitoring Results

Table A.1 - Details of Automatic Monitoring Sites

Site ID	Site Name	Site Type	X OS Grid Ref (Easting)	Y OS Grid Ref (Northing)	Pollutants Monitored	In AQMA?	Monitoring Technique	Distance to Relevant Exposure (m) (1)	Distance to kerb of nearest road (m) (2)	Inlet Height (m)
GOS1	Tichborne Way	Roadside	458987	102786	NO2/PM10	NO	Chemiluminescence and TEOM	15	5	3
FAR1	Gosport Road	Roadside	457594	105280	NO2	YES	Chemiluminescence	3.5	1.5	2
FAR2	Portland Street	Roadside	457954	106027	NO2	NO	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)
Non-automatic - Gosport Borough Council										
G	Military Road/Brockhurst Road	Roadside	459572	101800	NO_2	NO	41	3.5	N	2.7
Q	Fareham Way/Tichborne Way	Roadside	458985	102785	NO_2	NO	16	6	Y	2.7
R	Fareham Way/Tichborne Way	Roadside	458985	102785	NO_2	NO	16	6	Y	2.7
I	Fareham Way/Tichborne Way	Roadside	458985	102785	NO_2	NO	16	6	Y	2.7
J	Fareham Road/Lederle Lane	Roadside	458308	104093	NO_2	NO	46	3	N	2.7
V	Wych Lane/Fareham Road	Roadside	458064	104235	NO_2	NO	12	5	N	2.8
W	Bus StopWych Lane	Roadside	457977	104185	NO_2	NO	84	4.5	N	2.7
U	Daedalus	Roadside	456564	101572	NO_2	NO	15	3	N	2.8
S	Bury Cross 1	Roadside	460046	99618	NO_2	NO	2.3	3.3	N	2.5
T	Bury Cross 2	Roadside	460061	99604	NO_2	NO	2.3	3.3	N	2.5
P	Lees Lane/Forton Road Junction	Roadside	460631	100435	NO_2	NO	11	3	N	2.7
Non-automatic - Fareham Borough Council										
A27	On Sign Post on the A27 by the Bath Lane Underpass	Roadside	458400	106075	NO_2	NO	29	0.1	N	1.4
BL1	11 Bath Lane	Other	458376	106109	NO_2	NO	N/A	16	N	2.9

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)
G1A	30 Old Gosport Road	Roadside	457732	105625	NO_2	YES	0	10	N	2.3
G2A	138 Gosport Road	Other	457627	105138	NO_2	YES	0	9.5	N	1.8
G3	202 Gosport Road	Roadside	457726	104869	NO_2	NO	0	9	N	2
G4	122 Gosport Road	Roadside	457598	105213	NO_2	YES	0	6	N	2.5
G6	171 Gosport Road	Roadside	457599	105410	NO_2	YES	0	6	N	2.3
G7	193 Gosport Road	Roadside	457583	105354	NO_2	YES	0	6.5	N	3
G8Z	156 Gosport Road	Roadside	457656	105049	NO_2	NO	0	4	N	1.9
G10	107 Gosport Road	Roadside	457675	105616	NO_2	YES	0	14	N	2.6
G11	2 Earls Road	Roadside	457668	105461	NO_2	YES	0	5	N	2.1
G12	Two Saints,101 Gosport Road	Roadside	457684	105630	NO_2	YES	0	15	N	2.6
G14	Bottom of Beaconsfield Road	Other	457631	105494	NO_2	YES	5	6.9	N	2.5
HR2	17 Hartlands Road	Roadside	457822	106107	NO_2	NO	N/A	11	N	1.9
HR3A	7 Hartlands Road	Roadside	457787	106140	NO_2	NO	0	7	N	2.5
HR4	25 Hartlands Road	Roadside	457860	106077	NO_2	NO	0	6.5	N	1.9
PS1/1A/ 1B	1 Sentinel Cottages	Roadside	457939	106012	NO_2	YES	0	6.5	N	2.5
PS2	2 Sentinel Cottages	Roadside	457937	106021	NO_2	YES	0	6.5	N	2.7
PS3	38 Portland Street	Roadside	457935	106033	NO_2	YES	0	3.5	N	2.3
PS4/5/6	Co-located with Portland St Monitor	Roadside	457954	106027	NO_2	NO	5	1.8	Y	1.2

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)
E1/2/3	Co-located with Gosport Road Monitor	Roadside	457590	105281	NO_2	YES	3.5	1.5	Y	1.9
DC1	Maytree Drive Opposite Delme Court	Roadside	457182	106203	NO_2	NO	N/A	0.5	N	2.5
RM1	Runnymede	Roadside	455745	107825	NO_2	NO	N/A	49	N	2.7
GR/RL	Corner of Gosport Rd and Redlands Lane	Roadside	457564	105300	NO_2	YES	11	1.5	N	2.1
AQ8A	Rosemary House/Botley Road Suburban	Suburban	451618	109015	NO_2	NO	0	8	N	2.1
BR1	Bridge Road	Roadside	449694	109264	NO_2	NO	2.3	3.3	N	2.4
BR2	Bridge Road	Roadside	449664	109278	NO_2	NO	1	3.2	N	2.5
BR3	Bridge Road	Roadside	449500	109465	NO_2	NO	2.2	1.5	N	2.5
SL1	Swanwick Lane Top	Roadside	449574	109651	NO_2	NO	4.6	2.5	N	2.5
SL2	Swanwick Lane Bottom	Roadside	451272	109530	NO_2	NO	6	1	N	2.4
WW1	Western Way (Fareham town end)	Roadside	457845	106008	NO_2	NO	17	1	N	2.1
WW2	Western Way (Half way up Road)	Roadside	457443	106087	NO_2	NO	27	1	N	2.4
WW3	Corner of Avenue and Gudge HL	Roadside	456837	106220	NO_2	NO	4.2	2	N	2.1
CM1	Cams Hill, Near the Bridge	Roadside	458775	106228	NO_2	NO	20	0.7	N	2.2
CM2	Cams Mill Kerb side	Roadside	458775	106273	NO_2	NO	8.4	0.2	N	2.2

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)
CM3	On Cams Hill, near Delme Arms	Roadside	458828	106243	NO_2	NO	7	1	N	2.3

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.3 – Annual Mean NO_2 Monitoring Results

Data from the automatic monitoring sites is not yet fully ratified, due to delays on the part of the service provider, caused by covid-19. The raw data is presented here as illustrative only.

Site ID	X OS Grid Ref (Easting)	Y OS Grid Ref (Northing)	Site Type	Monitoring Type	Valid Data Capture for Monitoring Period (%) (1)	Valid Data Capture 2019 (%) (2)	NO_2 Annual Mean Concentration ($\mu g/m^3$) (3)				
							2015	2016	2017	2018	2019
Automatic – Gosport Borough Council											
GOS1	458987	102786	Roadside	Automatic	95.4	95.4	26.2	32.8	26.6	31.9	20.4
Automatic – Fareham Borough Council											
FAR1	457594	105280	Roadside	Automatic	99.5	99.5	27.6	25.9	29.0	26.9	28.3
FAR2	457954	106027	Roadside	Automatic	99.2	99.2	37.2	36.6	34.4	31.8	29.6
Non-automatic – Gosport Borough Council											
G	459572	101800	Roadside	Diffusion Tube	91.7	91.7	30.9	33.7	32.8	31.4	30.2
Q/R/I	458985	102785	Roadside	Diffusion Tube	94.4	94.4	21.8	25.9	23.9	25.7	23.9
J	458308	104093	Roadside	Diffusion Tube	83.3	83.3	27.4	31.2	32.6	30.7	30.5
V	458064	104235	Roadside	Diffusion Tube	91.7	91.7	19.1	28.3	24.9	27	24.6
W	457977	104185	Roadside	Diffusion Tube	66.7	66.7	15.5	18.8	16.5	18.1	17.0
U	456564	101572	Roadside	Diffusion Tube	75.0	75.0	14.6	20.7	19.4	16.8	16.1
S	460046	99618	Roadside	Diffusion Tube	100.0	100.0	36.5	36.5	38.1	38.3	32.0

Site ID	X OS Grid Ref (Easting)	Y OS Grid Ref (Northing)	Site Type	Monitoring Type	Valid Data Capture for Monitoring Period (%) (1)	Valid Data Capture 2019 (%) (2)	NO_2 Annual Mean Concentration (µg/m^3) (3)				
							2015	2016	2017	2018	2019
T	460061	99604	Roadside	Diffusion Tube	91.7	91.7	37.7	36.4	33.8	36.1	33.8
P	460631	100435	Roadside	Diffusion Tube	100	100	29.4	33.8	31.6	31.4	30.8
Non-automatic – Fareham Borough Council											
A27	458400	106075	Roadside	Diffusion Tube	100	100	n/a	n/a	n/a	n/a	**44.4**
BL1	458376	106109	Other	Diffusion Tube	83.3	83.3	**40.5**	35.7	31.4	31.3	33.0
G1A	457732	105625	Roadside	Diffusion Tube	83.3	83.3	35.8	30.1	29.4	28.5	27.0
G2A	457627	105138	Other	Diffusion Tube	100	100	33.5	27.9	27.7	25.8	26.0
G3	457726	104869	Roadside	Diffusion Tube	91.7	91.7	31.9	28.9	24.4	23.7	23.1
G4	457598	105213	Roadside	Diffusion Tube	75.0	75.0	31.5	25.5	24.8	25.2	24.0
G6	457599	105410	Roadside	Diffusion Tube	41.7	41.7	36.2	30.2	26.6	31.3	27.3
G7	457583	105354	Roadside	Diffusion Tube	100	100	**45.2**	36.0	34.5	37.4	36.5
G8Z	457656	105049	Roadside	Diffusion Tube	100	100	30.8	27.4	27.2	25.8	25.6
G10	457675	105616	Roadside	Diffusion Tube	100	100	**41.7**	35.5	33.4	33.2	31.6

Site ID	X OS Grid Ref (Easting)	Y OS Grid Ref (Northing)	Site Type	Monitoring Type	Valid Data Capture for Monitoring Period (%) (1)	Valid Data Capture 2019 (%) (2)	NO_2 Annual Mean Concentration ($\mu g/m^3$) (3)				
							2015	2016	2017	2018	2019
G11	457668	105461	Roadside	Diffusion Tube	91.7	91.7	31.3	25.2	23.5	23.1	22.7
G12	457684	105630	Roadside	Diffusion Tube	100	100	38.2	32.8	34.0	30.8	30.5
G14	457631	105494	Other	Diffusion Tube	91.7	91.7	34.8	30.4	26.3	26.4	26.8
HR2	457822	106107	Roadside	Diffusion Tube	91.7	91.7	33.1	27.1	25.0	24.5	23.7
HR3A	457787	106140	Roadside	Diffusion Tube	100	100	29.0	23.6	22.8	23.3	21.1
HR4	457860	106077	Roadside	Diffusion Tube	100	100	33.0	29.5	24.8	25.0	22.4
PS1/1A/1B	457939	106012	Roadside	Diffusion Tube	75.0	75.0	37.2	31.9	30.1	29.6	27.8
PS2	457937	106021	Roadside	Diffusion Tube	83.3	83.3	38.1	35.5	33.3	33.8	28.2
PS3	457935	106033	Roadside	Diffusion Tube	91.7	91.7	**40.6**	33.6	33.9	32.3	33.8
PS4/5/6	457954	106027	Roadside	Diffusion Tube	100	100	**42.9**	36.6	34.4	34.8	33.1
E1/2/3	457590	105281	Roadside	Diffusion Tube	91.7	91.7	39.2	31.2	32.4	29.8	28.2
DC1	457182	106203	Roadside	Diffusion Tube	91.7	91.7	30.2	26.3	22.5	23.9	21.9
RM1	455745	107825	Roadside	Diffusion Tube	50.0	50.0	29.6	25.7	26.3	24.8	24.0

Site ID	X OS Grid Ref (Easting)	Y OS Grid Ref (Northing)	Site Type	Monitoring Type	Valid Data Capture for Monitoring Period (%) (1)	Valid Data Capture 2019 (%) (2)	NO_2 Annual Mean Concentration ($\mu g/m^3$) (3)				
							2015	2016	2017	2018	2019
GR/RL	457564	105300	Roadside	Diffusion Tube	91.7	91.7	26.7	22.5	21.4	23.2	21.2
AQ8A	451618	109015	Suburban	Diffusion Tube	100	100	29.8	24.9	24.3	22.3	20.3
BR1	449694	109264	Roadside	Diffusion Tube	100	100	n/a	n/a	28.2	31.0	29.0
BR2	449664	109278	Roadside	Diffusion Tube	100	100	n/a	n/a	25.0	26.8	25.8
BR3	449500	109465	Roadside	Diffusion Tube	50.0	50.0	n/a	n/a	35.7	31.5	28.6
SL1	449574	109651	Roadside	Diffusion Tube	83.3	83.3	n/a	n/a	28.0	24.4	24.1
SL2	451272	109530	Roadside	Diffusion Tube	83.3	83.3	n/a	n/a	24.3	24.1	22.5
WW1	457845	106008	Roadside	Diffusion Tube	100	100	n/a	n/a	23.9	26.7	24.9
WW2	457443	106087	Roadside	Diffusion Tube	75.0	75.0	n/a	n/a	30.3	28.8	28.3
WW3	456837	106220	Roadside	Diffusion Tube	100	100	n/a	n/a	**40.4**	33.4	36.1
CM1	458775	106228	Roadside	Diffusion Tube	100	100	n/a	n/a	29.8	30.0	27.6
CM2	458775	106273	Roadside	Diffusion Tube	100	100	n/a	n/a	**68.0**	**57.7**	**53.1**
CM3	458828	106243	Roadside	Diffusion Tube	100	100	n/a	n/a	27.4	27.3	24.7

☒ **Diffusion tube data has been bias corrected (confirm by selecting in box)**

☒ **Annualisation has been conducted where data capture is <75% (confirm by selecting in box)**

☒ **Reported concentrations are those at the location of the monitoring site (bias adjusted and annualised, as required), i.e. prior to any fall-off with distance adjustment (confirm by selecting in box)**

Notes:

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

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

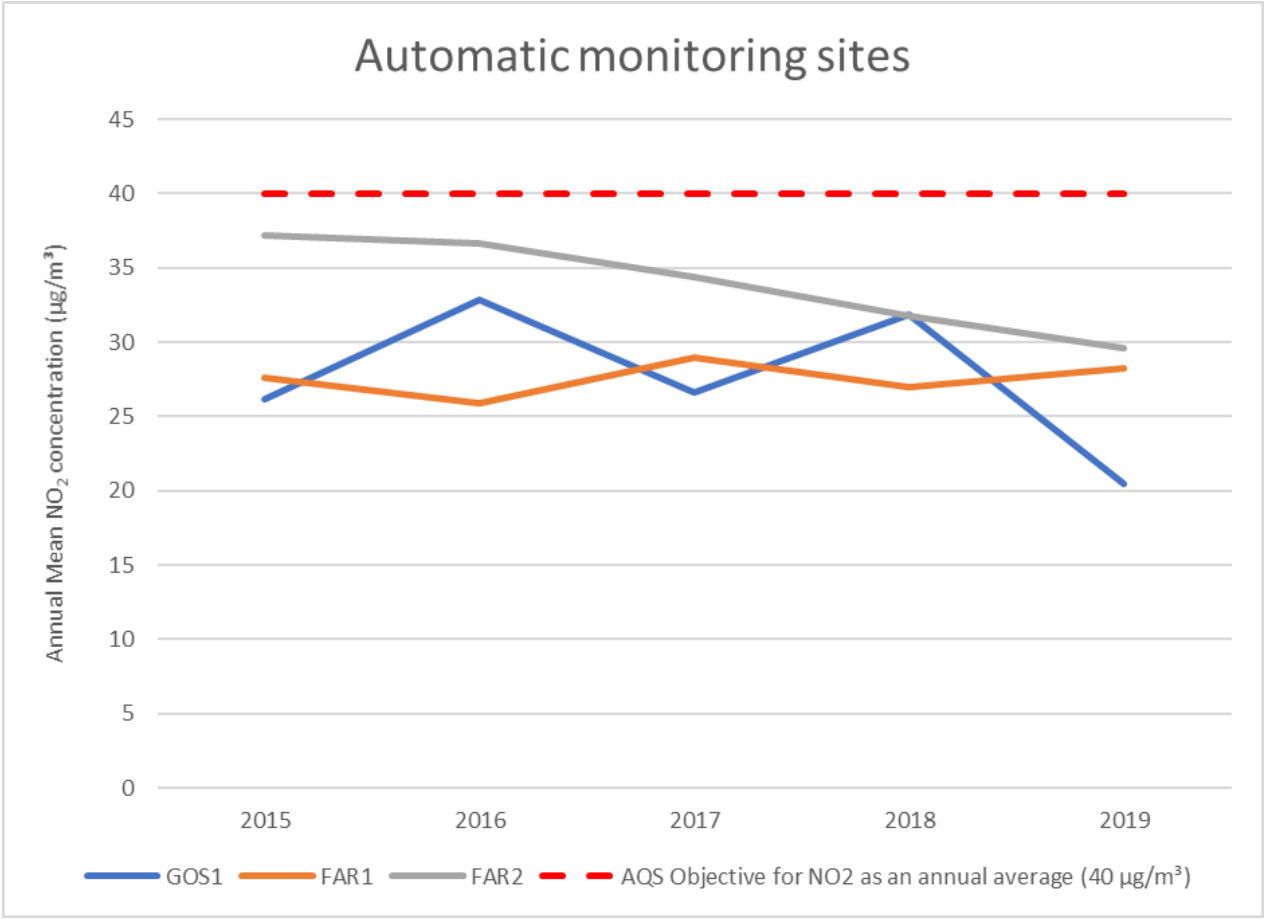
(1) Data capture for the monitoring period, in cases where monitoring was only carried out for part of the year.

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

(3) Means for diffusion tubes have been corrected for bias. All means have been "annualised" as per 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.

(4) Concentrations are those at the location of monitoring and not those following any fall-off with distance adjustment.

Figure A.1 – Trends in Annual Mean NO_2 Concentrations (Automatic Monitoring Sites)



Data from the automatic monitoring sites is not yet fully ratified, due to delays on the part of the service provider, caused by covid-19. The raw data is presented here as illustrative only.

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

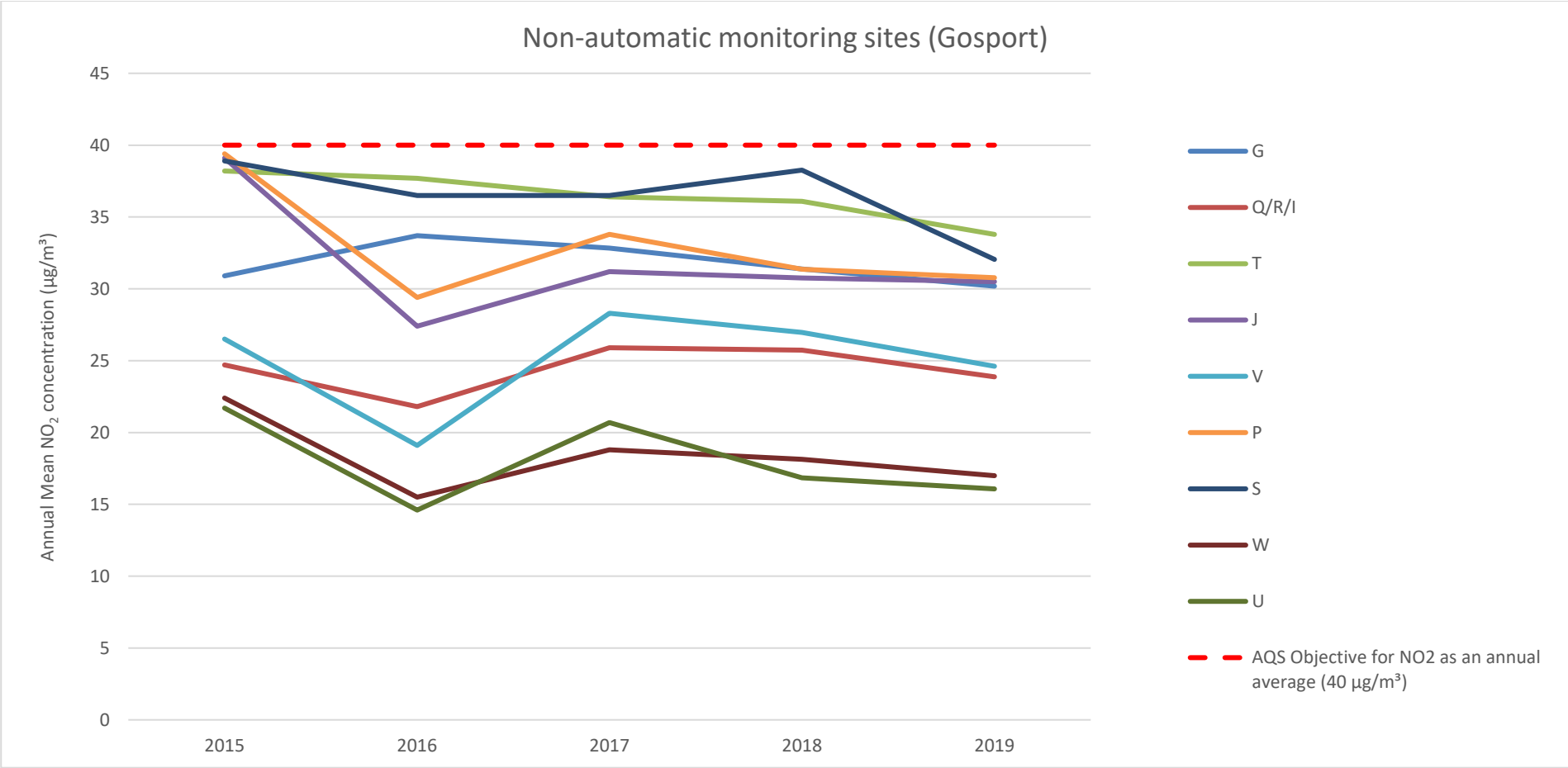


Figure A.3 – Trends in Annual Mean NO_2 Concentrations (Fareham – Non-automatic Monitoring Sites)

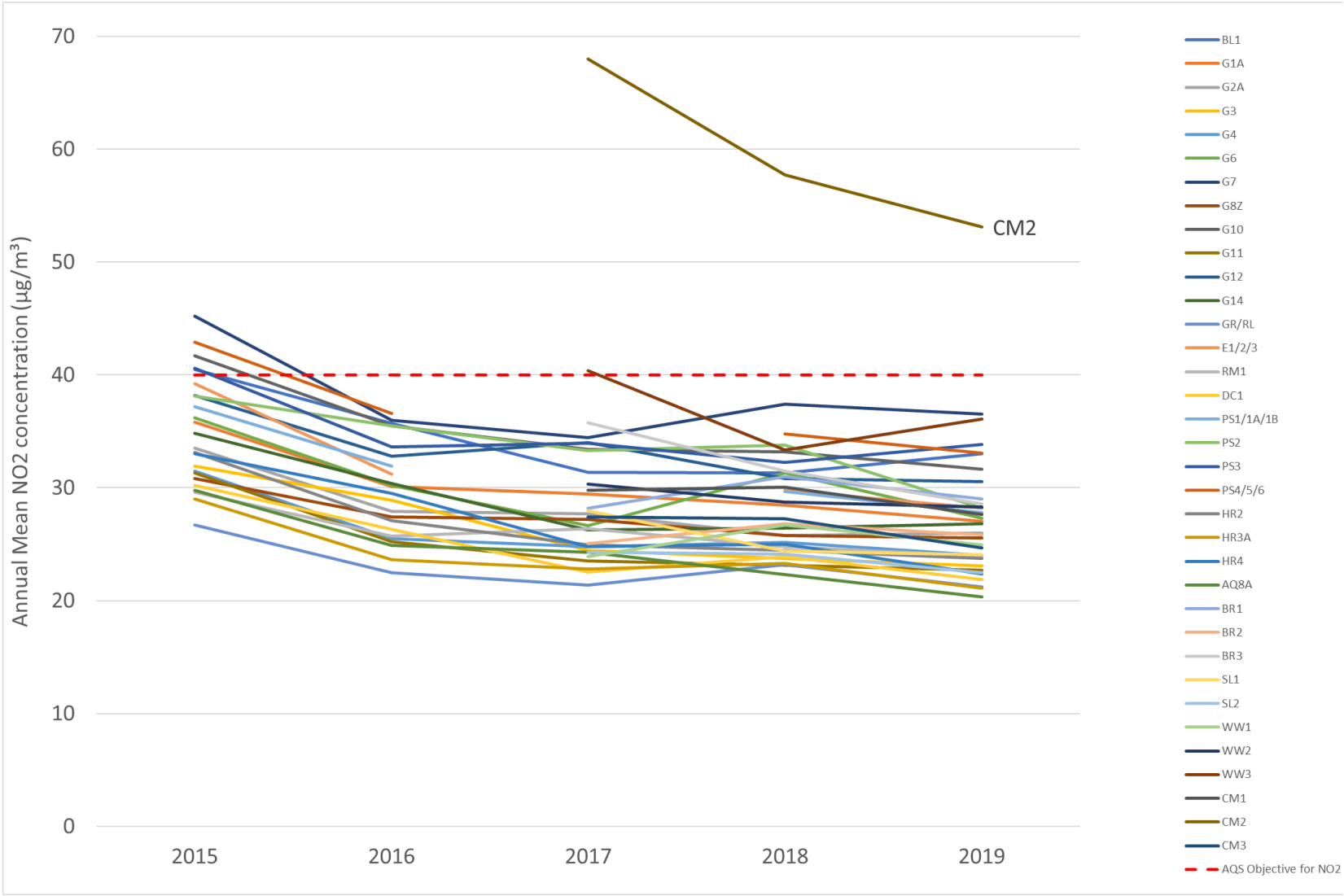


Table A.4 – 1-Hour Mean NO_2 Monitoring Results

Data from the automatic monitoring sites is not yet fully ratified, due to delays on the part of the service provider, caused by covid-19. The raw data is presented here as illustrative only.

Site ID	X OS Grid Ref (Easting)	Y OS Grid Ref (Northing)	Site Type	Monitoring Type	Valid Data Capture for Monitoring Period (%) (1)	Valid Data Capture 2019 (%) (2)	NO_2 1-Hour Means > 200µg/m^3 (3)				
							2015	2016	2017	2018	2019
Gosport Borough Council											
GOS1	458987	102786	Roadside	Automatic	95.4	95.4	0	0	0	0	0
Fareham Borough Council											
FAR1	457594	105280	Roadside	Automatic	99.5	99.5	0	0	0	0	0
FAR2	457954	106027	Roadside	Automatic	99.2	99.2	0	2	5	1	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.4 – Trends in Number of NO_2 1-Hour Means > 200µg/m^3

Data from the automatic monitoring sites is not yet fully ratified, due to delays on the part of the service provider, caused by covid-19. The raw data is presented here as illustrative only.

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

Data from the automatic monitoring sites is not yet fully ratified, due to delays on the part of the service provider, caused by covid-19. The raw data is presented here as illustrative only.

Site ID	X OS Grid Ref (Easting)	Y OS Grid Ref (Northing)	Site Type	Valid Data Capture for Monitoring Period (%) (1)	Valid Data Capture 2019 (%) (2)	PM_{10} Annual Mean Concentration ($\mu g/m^3$) (3)				
						2015	2016	2017	2018	2019
GOS1	458987	102786	Roadside	97.0	97.0	20.8	19.1	17.5	19.1	17.4

☐ **Annualisation has been conducted where data capture is <75%** **(confirm by selecting in box)**

Notes:

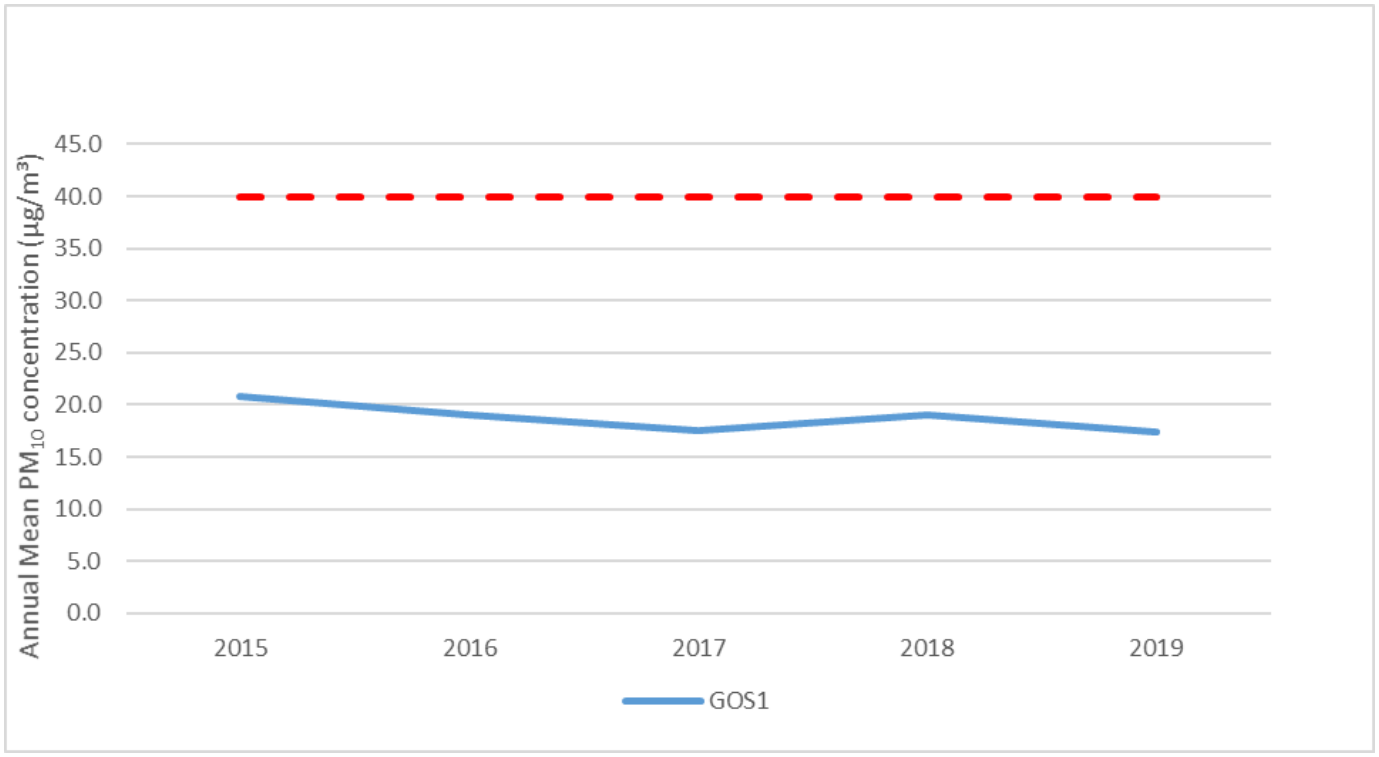
Exceedances of the PM_{10} annual mean objective of 40$\mu g/m^3$ are shown in **bold.**

(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



Data from the automatic monitoring sites is not yet fully ratified, due to delays on the part of the service provider, caused by covid-19. The raw data is presented here as illustrative only.

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

Data from the automatic monitoring sites is not yet fully ratified, due to delays on the part of the service provider, caused by covid-19. The raw data is presented here as illustrative only.

Site ID	X OS Grid Ref (Easting)	Y OS Grid Ref (Northing)	Site Type	Valid Data Capture for Monitoring Period (%) (1)	Valid Data Capture 2019 (%) (2)	PM_{10} 24-Hour Means > 50µg/m^3 (3)				
						2015	2016	2017	2018	2019
GOS1	458987	102786	Roadside	97.3	97.3	3	1	1	0	2

Notes:

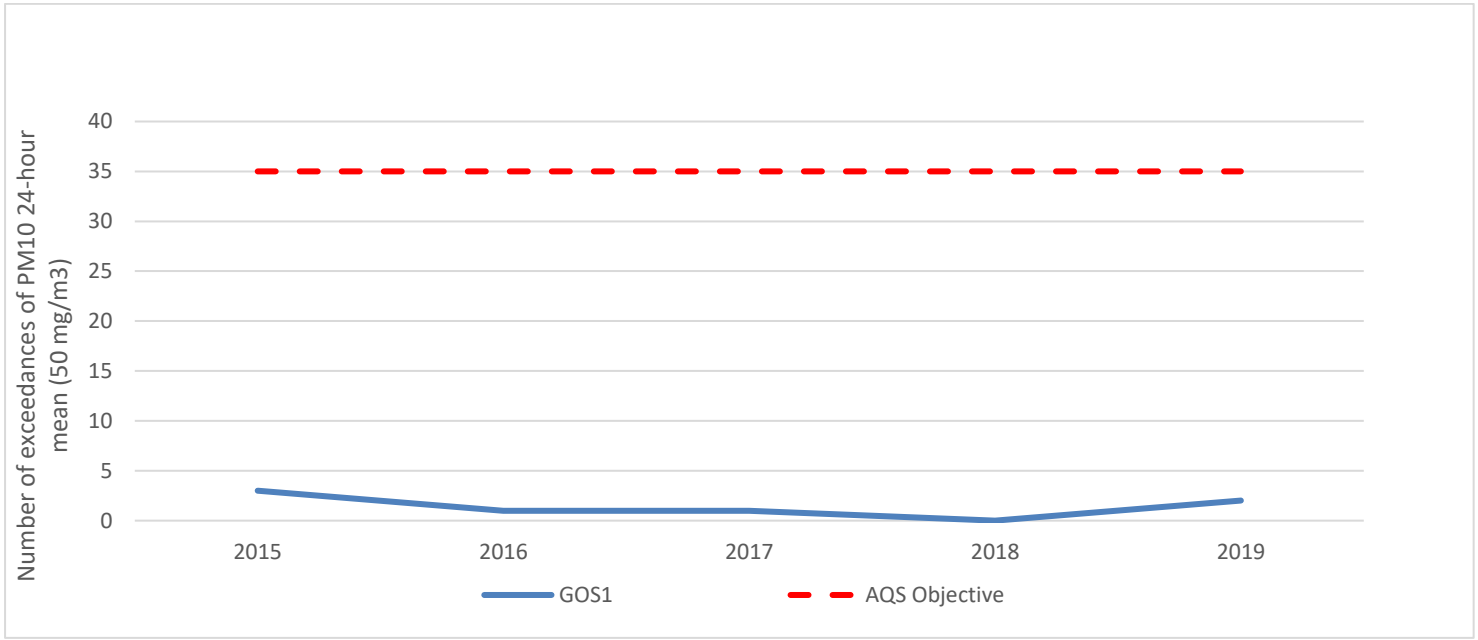
Exceedances of the PM_{10} 24-hour mean objective (50µg/m^3 not to be exceeded more than 35 times/year) are shown in **bold.**

(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/m^3



Data from the automatic monitoring sites is not yet fully ratified, due to delays on the part of the service provider, caused by covid-19. The raw data is presented here as illustrative only.

Appendix B: Full Monthly Diffusion Tube Results for 2019

Table B.1 - NO_2 Monthly Diffusion Tube Results – 2019

Site ID	X OS Grid Ref (Easting)	Y OS Grid Ref (Northing)	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 (0.93) and Annualised (1)	Distance Corrected to Nearest Exposure (2)
Gosport Borough Council																	
G	459572	101800	36.5	**42.1**	-	28.8	28.8	27.1	34.6	32.7	29.8	30.0	38.2	28.4	32.5	30.2	N/A
Q/R/I	458985	102785	33.3	30.6	25.9	31.6	23.1	22.6	22.6	18.2	21.7	24.9	33.5	19.1	25.7	23.9	N/A
J	458308	104093	**45.1**	39.9	35.8	29.5	26.0	-	-	29.5	23.2	26.3	38.9	33.8	32.8	30.5	N/A
V	458064	104235	33.2	34.3	28.6	25.8	21.4	21.6	23.2	19.4	24.0	26.8	32.8	-	26.5	24.6	N/A
W	457977	104185	-	-	17.2	19.3	13.0	13.7	12.7	-	15.1	-	26.2	15.9	16.6	17.0	N/A
U	456564	101572	21.2	23.2	17.2	17.3	15.8	-	-	12.9	14.6	16.2	-	17.1	17.3	16.1	N/A
S	460046	99618	**41.7**	**42.0**	**40.1**	36.6	34.1	33.4	12.8	33.7	34.3	26.9	**45.4**	32.7	34.5	32.0	N/A
T	460061	99604	**74.4**	34.4	39.7	30.3	28.8	-	28.9	27.5	33.2	34.1	35.8	32.5	36.3	33.8	N/A
P	460631	100435	**43.5**	37.8	33.8	36.4	29.2	29.5	27.8	25.2	28.0	30.8	**44.9**	30.5	33.1	30.8	N/A
Fareham Borough Council																	
A27	458400	106075	**58.6**	**48.8**	**54.9**	34.2	**44.9**	**51.0**	**42.0**	**47.1**	**44.6**	**50.8**	**47.8**	**48.1**	**47.7**	**44.4**	25.9
BL1	458376	106109	39.5	**46.5**	-	**66.9**	25.4	29.9	25.8	23.4	-	25.9	37.0	34.6	35.5	33.0	N/A

Site ID	X OS Grid Ref (Easting)	Y OS Grid Ref (Northing)	NO_2 Mean Concentrations ($\mu g/m^3$)														
			Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual Mean		
															Raw Data	Bias Adjusted (0.93) and Annualised (1)	Distance Corrected to Nearest Exposure (2)
G1A	457732	105625	**44.2**	36.0	31.6	-	-	23.6	25.7	22.9	20.8	24.7	35.0	26.3	29.1	27.0	N/A
G2A	457627	105138	38.1	33.5	33.0	25.2	22.4	21.7	19.6	24.2	22.7	27.6	35.5	31.9	27.9	26.0	N/A
G3	457726	104869	35.1	30.3	28.4	22.4	19.8	18.8	18.6	20.2	20.5	-	33.8	25.1	24.8	23.1	N/A
G4	457598	105213	34.1	31.5	-	21.4	-	-	19.7	20.5	20.8	23.9	32.6	27.5	25.8	24.0	N/A
G6	457599	105410	-	-	-	-	-	-	-	23.1	24.5	27.6	33.8	29.1	27.6	27.3	N/A
G7	457583	105354	**46.3**	**48.1**	**43.0**	33.5	35.2	37.9	36.1	32.6	37.3	38.8	**47.2**	35.2	39.3	36.5	36.5
G8Z	457656	105049	37.9	33.0	27.8	24.1	24.5	22.9	23.4	25.3	23.4	28.7	32.1	27.0	27.5	25.6	N/A
G10	457675	105616	**43.1**	**43.3**	34.2	33.0	29.0	31.8	26.9	27.4	29.2	35.6	**43.2**	31.4	34.0	31.6	N/A
G11	457668	105461	34.7	-	29.8	19.8	21.7	19.9	20.0	19.7	22.1	24.5	31.8	24.7	24.4	22.7	N/A
G12	457684	105630	**42.5**	**44.3**	36.5	32.0	26.4	28.2	26.7	28.3	28.3	33.2	36.6	31.4	32.8	30.5	N/A
G14	457631	105494	34.4	34.1	28.6	35.0	-	26.0	23.3	18.5	24.0	27.3	38.8	26.9	28.8	26.8	N/A
HR2	457822	106107	32.6	32.4	27.1	25.1	20.1	-	21.1	20.7	19.9	25.3	29.8	26.4	25.5	23.7	N/A
HR3A	457787	106140	27.9	34.9	21.1	25.4	17.7	18.1	16.6	16.0	19.2	24.1	30.9	20.7	22.7	21.1	N/A
HR4	457860	106077	33.1	31.0	23.8	25.0	19.3	21.8	17.6	15.0	18.5	22.5	34.9	26.0	24.0	22.4	N/A
PS1/1A/1B	457939	106012	37.1	38.5	-	-	26.2	28.0	25.3	24.9	26.5	32.0	-	30.5	29.9	27.8	N/A
PS2	457937	106021	38.2	38.1	30.1	29.3	26.7	26.4	27.2	-	-	25.4	30.3	31.4	30.3	28.2	N/A

Site ID	X OS Grid Ref (Easting)	Y OS Grid Ref (Northing)	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 (0.93) and Annualised (1)	Distance Corrected to Nearest Exposure (2)
PS3	457935	106033	**41.0**	38.6	30.6	34.2	30.8	30.0	29.8	-	**57.6**	32.6	37.8	37.1	36.4	33.8	N/A
PS4/5/6	457954	106027	**41.3**	**47.7**	35.7	37.9	29.8	31.8	28.5	27.9	31.0	33.0	**42.9**	39.4	35.6	33.1	N/A
E1/2/3	457590	105281	**41.5**	33.6	32.2	-	24.7	25.6	25.5	24.9	27.6	30.0	39.0	28.7	30.3	28.2	N/A
DC1	457182	106203	31.4	28.6	27.7	-	32.9	19.5	18.4	18.7	4.6	22.4	32.8	21.6	23.5	21.9	N/A
RM1	455745	107825	35.0	26.4	-	**43.3**	-	20.2	-	16.1	18.4	-	-	-	26.5	24.0	N/A
GRRL	457564	105300	31.2	27.4	26.0	-	18.6	18.2	17.0	14.6	18.7	22.7	32.6	23.8	22.8	21.2	N/A
AQ8A	451618	109015	31.8	31.6	24.0	17.4	18.2	17.4	19.0	18.7	18.3	20.9	25.8	19.6	21.9	20.3	N/A
BR1	449694	109264	**42.2**	36.7	33.2	27.2	25.2	30.2	22.7	26.5	29.8	33.3	35.2	32.0	31.2	29.0	N/A
BR2	449664	109278	34.8	33.4	27.6	28.5	22.8	25.4	22.9	23.5	25.3	28.2	34.9	26.2	27.8	25.8	N/A
BR3	449500	109465	**40.8**	-	-	-	27.9	-	25.5	-	27.2	-	35.1	23.0	29.9	28.6	N/A
SL1	449574	109651	30.5	33.2	27.2	20.9	-	22.0	19.0	23.5	23.2	28.3	31.2	-	25.9	24.1	N/A
SL2	451272	109530	30.9	31.4	-	37.4	-	24.0	5.8	20.0	20.7	23.0	25.1	23.4	24.2	22.5	N/A
WW1	457845	106008	37.9	39.4	28.3	25.7	20.5	22.6	20.9	22.0	23.1	28.1	28.3	24.7	26.8	24.9	N/A
WW2	457443	106087	-	34.2	36.3	28.6	26.6	26.1	-	23.8	29.2	34.9	34.2	-	30.4	28.3	N/A
WW3	456837	106220	**52.1**	**42.3**	**41.5**	37.9	30.7	36.7	28.6	31.8	35.6	38.9	55.3	34.5	38.8	36.1	32.1
CM1	458775	106228	40.7	36.1	32.8	30.7	23.1	26.5	20.2	18.8	26.6	31.6	40.6	28.7	29.7	27.6	N/A

Site ID	X OS Grid Ref (Easting)	Y OS Grid Ref (Northing)	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 (0.93) and Annualised (1)	Distance Corrected to Nearest Exposure (2)
CM2	458775	106273	**72.5**	**59.5**	**66.7**	**57.0**	**49.3**	**58.3**	**49.4**	**43.2**	**50.9**	**60.5**	**59.4**	**58.7**	**57.1**	**53.1**	34.6
CM3	458828	106243	37.6	26.7	32.2	25.8	24.3	20.9	21.8	23.1	23.5	24.8	30.0	27.8	26.5	24.7	N/A

☐ **Local bias adjustment factor used (confirm by selecting in box)**

☒ **National bias adjustment factor used (confirm by selecting in box)**

☒ **Annualisation has been conducted where data capture is <75% [Note, several of the AURN sites used for annualisation were not ratified for a small number of days in January 2020, required for December 2019 values.] (confirm by selecting in box)**

☒ **Where applicable, data has been distance corrected for relevant exposure in the final column (confirm by selecting in box)**

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).

Additional Evidence

No additional evidence is gathered in support of measures for Action Plans. However, evidence will be available in future as part of the monitoring and evaluation of the Local NO_2 Plan. An automatic number plate recognition (ANPR) survey was completed early in 2020, although processing of the results by the DVLA has been delayed as a result of covid-19. As such the report to the Joint Air Quality Unit is currently on hold.

Short-term to Long-term Data Adjustment

For the 2019 diffusion tube data, annualisation was required at one site in Gosport and three sites in Fareham, due to data capture below 75%. Annualisation has been completed following Defra Technical Guidance LAQM.TG(16) Box 7.10. Details of the annualisation are provided in Table C.1.

Note, at the time of writing, AURN data for Southampton Centre, Brighton Preston Park and Bournemouth was unratified for January 2020. This affects a small number of days in January 2020 for the December 2019 results.

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)
Gosport Borough Council							
W	16.63	1.09	1.07	1.11	1.12	1.10	16.98
Fareham Borough Council							
G6	27.61	1.04	0.98	1.11	1.12	1.06	27.31
RM1	26.54	0.99	0.98	0.95	0.97	0.97	23.98
BR3	29.91	1.01	1.03	1.04	1.03	1.03	28.58

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. *Note, data from the automatic monitoring sites is not yet fully ratified, due to delays on the part of the service provider, caused by covid-19. As such, local bias adjustment factors should be treated with caution.*

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)	Bias Factor B
Tichborne Way (GOS1), Q/I/R	94%	95%	25	20	24% (4% - 43%)
Gosport Road (FAR1), E1/2/3	92%	100%	30	28	7% (0% - 13%)
Portland Street (FAR2), PS4/5/6	100%	99%	36	30	20% (12% - 28%)

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

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	10/01/2019	08/02/2019	27.6	41.1	31.2	33	7.0	21	17.4	25.1	96.8	Poor Precision	Good
2	08/02/2019	06/03/2019	32.6	27.0	32.1	31	3.1	10	7.7	28.4	92.1	Good	Good
3	06/03/2019	03/04/2019		27.0	24.8	26	1.5	6	13.9	18.4	89.1	Good	Good
4	03/04/2019	01/05/2019	32.3	32.7	29.8	32	1.6	5	4.0	29.8	89.7	Good	Good
5	01/05/2019	07/06/2019	24.0	22.5	22.9	23	0.7	3	1.9	18.2	98.5	Good	Good
6	07/06/2019	03/07/2019	22.5		22.8	23	0.2	1	1.5	15.4	94.7	Good	Good
7	03/07/2019	07/08/2019	23.6	21.7	22.6	23	0.9	4	2.3	14.5	96.5	Good	Good
8	07/08/2019	04/09/2019	18.5	18.5	17.7	18	0.5	3	1.1	12.1	99.7	Good	Good
9	04/09/2019	02/10/2019	21.9	21.0	22.2	22	0.6	3	1.6	11.4	99.7	Good	Good
10	02/10/2019	06/11/2019	25.3	24.3	25.1	25	0.5	2	1.3	20.8	99.4	Good	Good
11	06/11/2019	05/12/2019	35.4	31.1	33.9	33	2.2	6	5.4	32.0	84.3	Good	Good
12	05/12/2019	09/01/2020	17.1	20.3	19.8	19	1.7	9	4.2	20.6	100.0	Good	Good
13													
										Overall survey -->		Good precision	Good Overall DC

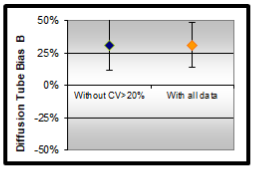
It is necessary to have results for at least two tubes in order to calculate the precision of the measurements

(Check average CV & DC from Accuracy calculations)

Site Name/ ID: Tichborne Way (GOS1)

Precision: 11 out of 12 periods have a CV smaller than 20%

Accuracy (with 95% confidence interval)	without periods with CV larger than 20%	WITH ALL DATA
Bias calculated using	11 periods of data	12 periods of data
Bias factor A	0.81 (0.7 - 0.96)	0.8 (0.7 - 0.94)
Bias B	24% (4% - 43%)	24% (7% - 42%)
Diffusion Tubes Mean:	25 µgm⁻³	26 µgm⁻³
Mean CV (Precision):	5	6
Automatic Mean:	20 µgm⁻³	21 µgm⁻³
Data Capture for periods used:	95%	95%
Adjusted Tubes Mean:	20 (17 - 24) µgm⁻³	20 (18 - 24) µgm⁻³



Jaume Targa, for AEA
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										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	09/01/2019	08/02/2019	41.7	41.3	41.5	42	0.2	1	0.5	35.9	99.6	Good	Good
2	08/02/2019	07/03/2019	34.4	30.1	36.3	34	3.2	10	7.9	32.2	99.4	Good	Good
3	07/03/2019	03/04/2019	31.0	30.6	35.0	32	2.4	8	6.1	28.5	100.0	Good	Good
4													
5	01/05/2019	07/06/2019	25.7	23.9	24.5	25	0.9	4	2.3	21.8	98.5	Good	Good
6	07/06/2019	03/07/2019	24.8	27.1	24.8	26	1.3	5	3.3	21.4	98.9	Good	Good
7	03/07/2019	07/08/2019	24.4	26.0	26.0	25	0.9	4	2.3	22.4	99.6	Good	Good
8	07/08/2019	04/09/2019	24.1	26.2	24.6	25	1.1	4	2.7	24.2	100.0	Good	Good
9	04/09/2019	03/10/2019	26.6	29.6	26.6	28	1.7	6	4.3	24.7	100.0	Good	Good
10	03/10/2019	06/11/2019	31.3	28.1	30.6	30	1.7	6	4.2	28.8	99.4	Good	Good
11	06/11/2019	05/12/2019	41.7	38.1	37.1	39	2.4	6	5.9	40.6	100.0	Good	Good
12	05/12/2019	09/01/2020	29.7	30.6	25.8	29	2.5	9	6.3	32.0	100.0	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

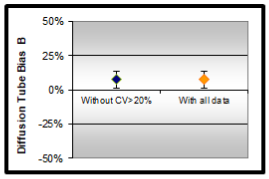
Site Name/ ID: Gosport Road (FAR1)

Precision: 11 out of 11 periods have a CV smaller than 20%

(Check average CV & DC from Accuracy calculations)

Accuracy (with 95% confidence interval) without periods with CV larger than 20%	
Bias calculated using 11 periods of data	
Bias factor A	0.94 (0.89 - 1)
Bias B	7% (0% - 13%)
Diffusion Tubes Mean:	30 µgm^{-3}
Mean CV (Precision):	6
Automatic Mean:	28 µgm^{-3}
Data Capture for periods used:	100%
Adjusted Tubes Mean:	28 (27 - 30) µgm^{-3}

Accuracy (with 95% confidence interval) WITH ALL DATA	
Bias calculated using 11 periods of data	
Bias factor A	0.94 (0.89 - 1)
Bias B	7% (0% - 13%)
Diffusion Tubes Mean:	30 µgm^{-3}
Mean CV (Precision):	6
Automatic Mean:	28 µgm^{-3}
Data Capture for periods used:	100%
Adjusted Tubes Mean:	28 (27 - 30) µgm^{-3}



Jaume Targa, for AEA
Version 04 - February 2011

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										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	09/01/2019	08/02/2019	43.0	41.1	39.9	41	1.5	4	3.8	35.6	99.7	Good	Good
2	08/02/2019	07/03/2019	46.0	53.6	43.3	48	5.3	11	13.3	38.5	99.7	Good	Good
3	07/03/2019	03/04/2019	32.3	36.5	38.3	36	3.1	9	7.6	27.4	95.7	Good	Good
4	03/04/2019	01/05/2019	37.0	36.8	40.0	38	1.8	5	4.6	36.2	99.7	Good	Good
5	01/05/2019	07/06/2019	29.2	29.6	30.6	30	0.7	2	1.8	24.3	99.2	Good	Good
6	07/06/2019	03/07/2019	33.2	30.7	31.4	32	1.3	4	3.1	24.0	99.8	Good	Good
7	03/07/2019	07/08/2019	29.2	26.0	30.3	29	2.2	8	5.5	22.8	98.1	Good	Good
8	07/08/2019	04/09/2019	25.3	27.7	30.5	28	2.6	9	6.4	22.2	100.0	Good	Good
9	04/09/2019	03/10/2019	28.1	33.8	31.3	31	2.9	9	7.1	21.6	100.0	Good	Good
10	02/10/2019	06/11/2019	32.4	35.4	31.1	33	2.2	7	5.4	26.3	99.6	Good	Good
11	06/11/2019	05/12/2019	44.0	41.6	43.0	43	1.2	3	3.1	43.4	100.0	Good	Good
12	05/12/2019	09/01/2020	36.6	41.9	39.7	39	2.6	7	6.6	34.0	100.0	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

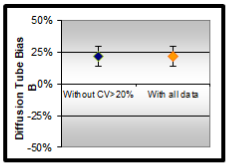
Site Name/ ID: Portland St (FAR2)

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

(Check average CV & DC from Accuracy calculations)

Accuracy (with 95% confidence interval) without periods with CV larger than 20%	
Bias calculated using 12 periods of data	
Bias factor A	0.84 (0.78 - 0.89)
Bias B	20% (12% - 28%)
Diffusion Tubes Mean:	36 µgm^{-3}
Mean CV (Precision):	6
Automatic Mean:	30 µgm^{-3}
Data Capture for periods used:	99%
Adjusted Tubes Mean:	30 (28 - 32) µgm^{-3}

Accuracy (with 95% confidence interval) WITH ALL DATA	
Bias calculated using 12 periods of data	
Bias factor A	0.84 (0.78 - 0.89)
Bias B	20% (12% - 28%)
Diffusion Tubes Mean:	36 µgm^{-3}
Mean CV (Precision):	6
Automatic Mean:	30 µgm^{-3}
Data Capture for periods used:	99%
Adjusted Tubes Mean:	30 (28 - 32) µgm^{-3}



Jaume Targa, for AEA
Version 04 - February 2011

Diffusion Tube National Bias Adjustment Factors

Diffusion tubes for 2019 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 in water is 0.93 (based on 27 studies, spreadsheet version number 03/20) 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 2020 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 (and these data have been used to inform Fareham's Local NO_2 Plan).
- The average local bias adjustment factor for the two CMS sites in Fareham was 0.89. Using a national factor of 0.93 therefore provides a more conservative estimate of annual mean NO_2 concentrations.

Distance Correction

In accordance with paragraphs 7.77-7.79 of Technical Guidance LAQM.TG16, distance correction has been applied to four diffusion tubes, as their bias adjusted, annualised concentrations were over 36 µg/m³. Calculations from the NO_2 fall-off with distance calculator are presented below.

Figure C.4 – NO_2 fall-off with distance calculations

Site Name/ID	Distance (m)		NO_2 Annual Mean Concentration (µg/m^3)			Comment
	Monitoring Site to Kerb	Receptor to Kerb	Background	Monitored at Site	Predicted at Receptor	
G7	6.5	6.5	16.8	36.5	*36.5*	Predicted concentration at Receptor within 10% the AQS objective.
WW3	3.2	7.1	16.8	36.1	32.1	
A27	0.1	29.0	20.6	44.4	25.9	Warning: your receptor is more than 20m further from the kerb than your monitor - treat result with caution.
CM2	0.2	8.4	20.6	53.1	34.6	

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 the data must be adjusted. The Tichborne Way PM_{10} data has been corrected using the Volatile Correction Model (VCM) methodology. For January to June 2019, the VCM correction was applied to the data provided to Gosport Borough Council by Ricardo Environment and Energy who were the service agents for the automatic monitors until 30 June 2019. From 1 July 2019, new service provider, We Care 4 Air applied the VCM correction.

QA/QC of Automatic Monitoring

Formal Quality Assurance/Quality Control (QA/QC) was provided by Ricardo Environment and Energy up to 30 June 2019, and by NPL from 1 July 2019 onwards. This ensures reliability and accuracy of the measurements. In addition, as part of the LSO, the monitoring sites were visited and checked every two weeks up to 30 June 2019, and on a monthly basis from 1 July 2019 onwards. *Data from the automatic monitoring sites is not yet fully ratified, due to delays caused by covid-19. The raw data presented in this ASR is illustrative only.*

QA/QC of Diffusion Tube Monitoring

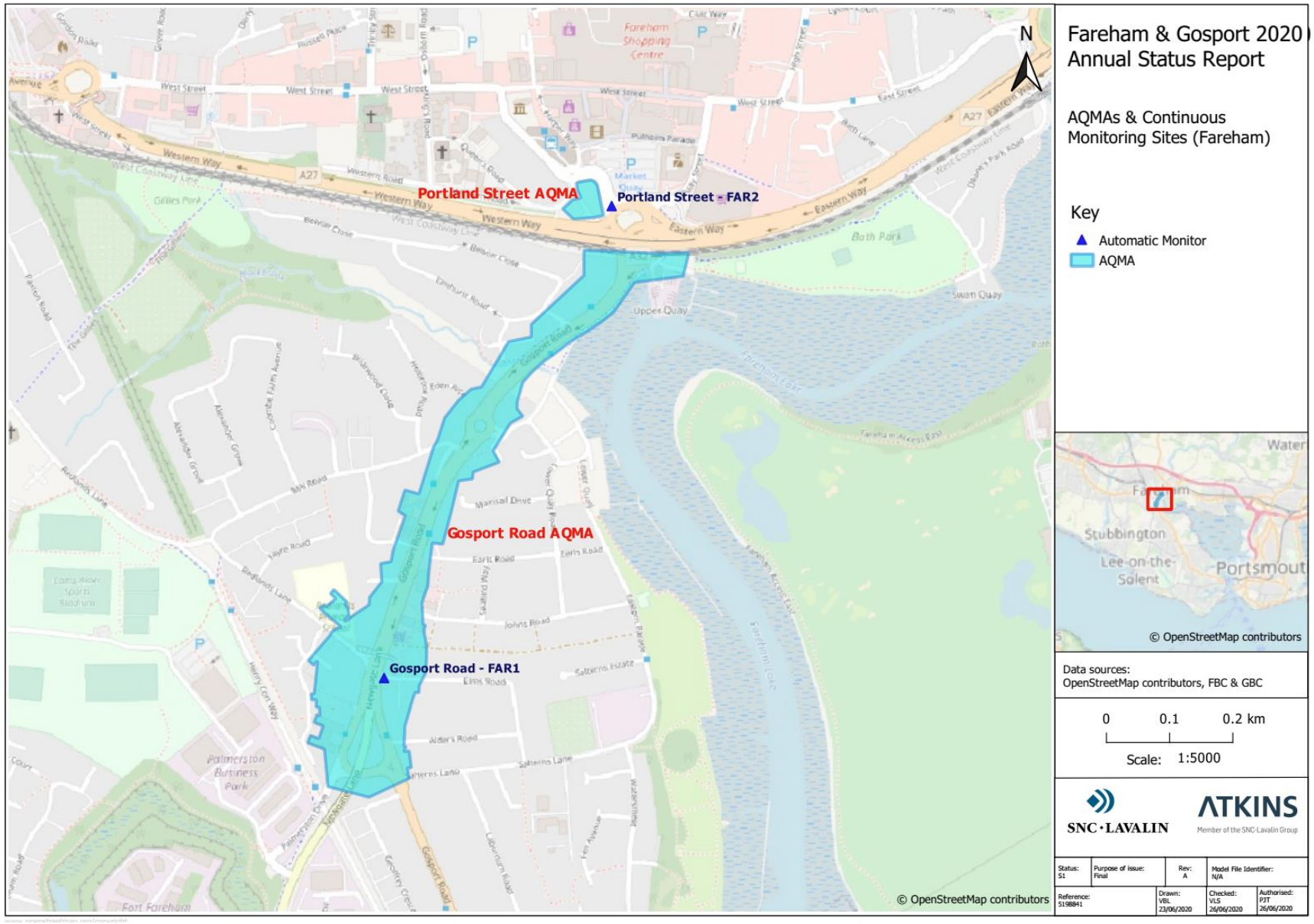
Gradko International Ltd is a UKAS accredited laboratory and participates in laboratory performance and proficiency testing schemes. These provide strict performance criteria for participating laboratories to meet, thereby ensuring NO_2 concentrations reported are of a high calibre. The lab follows the 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

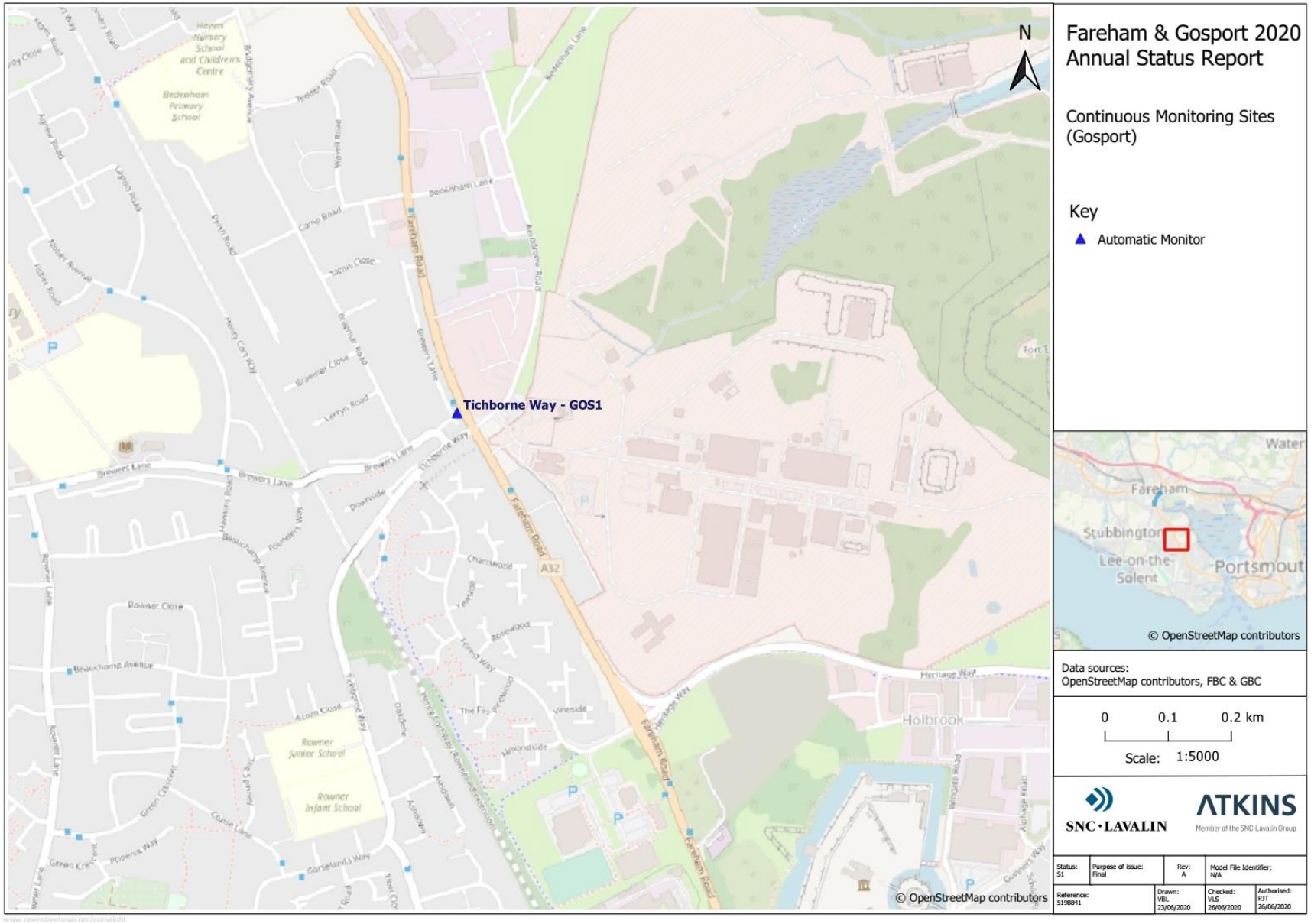
PT10, was introduced. This is an independent analytical proficiency-testing (PT) scheme, operated by LGC Standards and supported by the Health and Safety Laboratory (HSL). AIR PT combines two long running PT schemes: LGC Standards STACKS PT scheme and HSL WASP PT scheme.

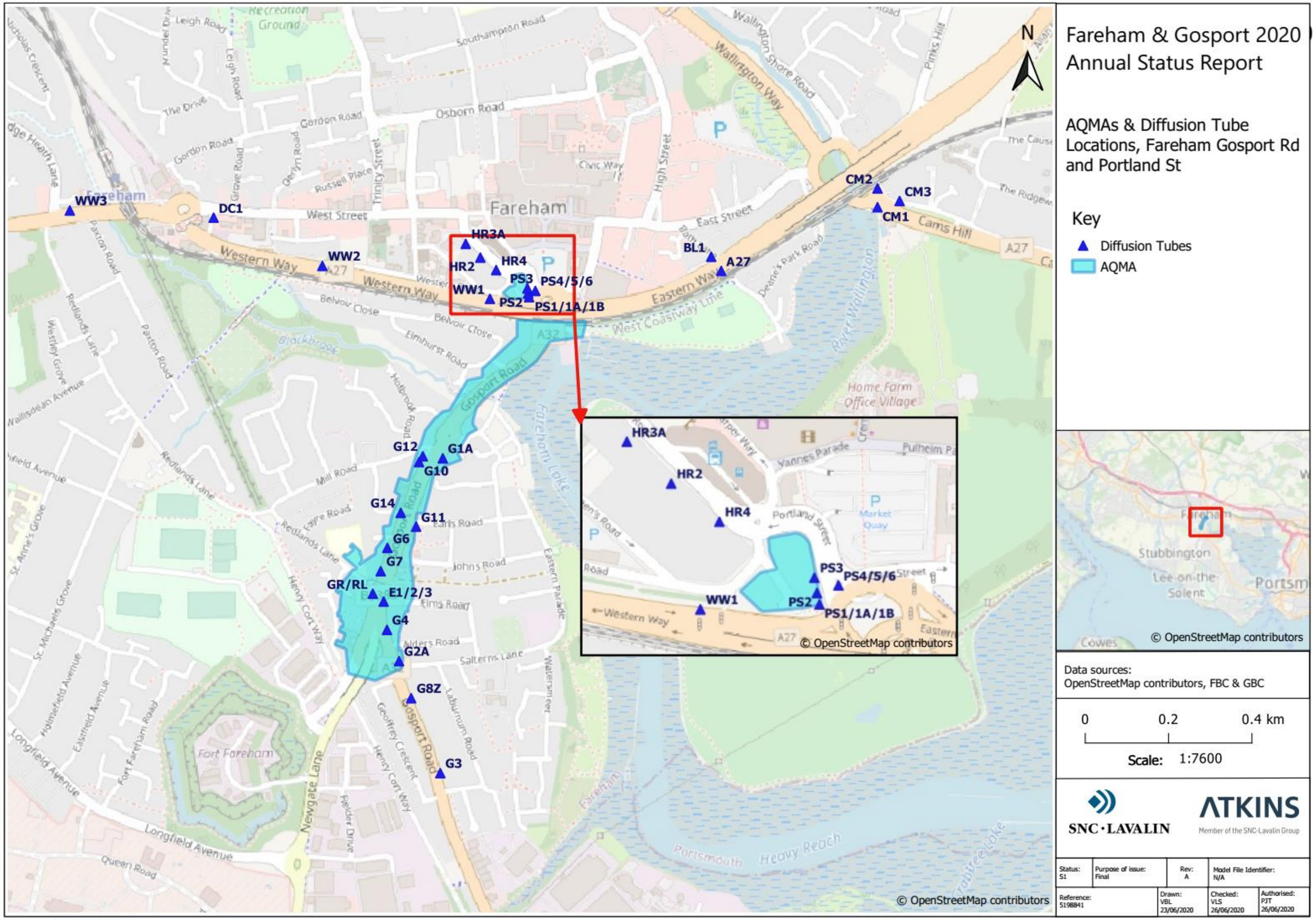
Defra and the Devolved Administrations advise that diffusion tubes used for Local Air Quality Management should be obtained from laboratories that have demonstrated satisfactory performance in the AIR PT scheme. Laboratory performance in AIR PT is also assessed, by the National Physical Laboratory (NPL), 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.

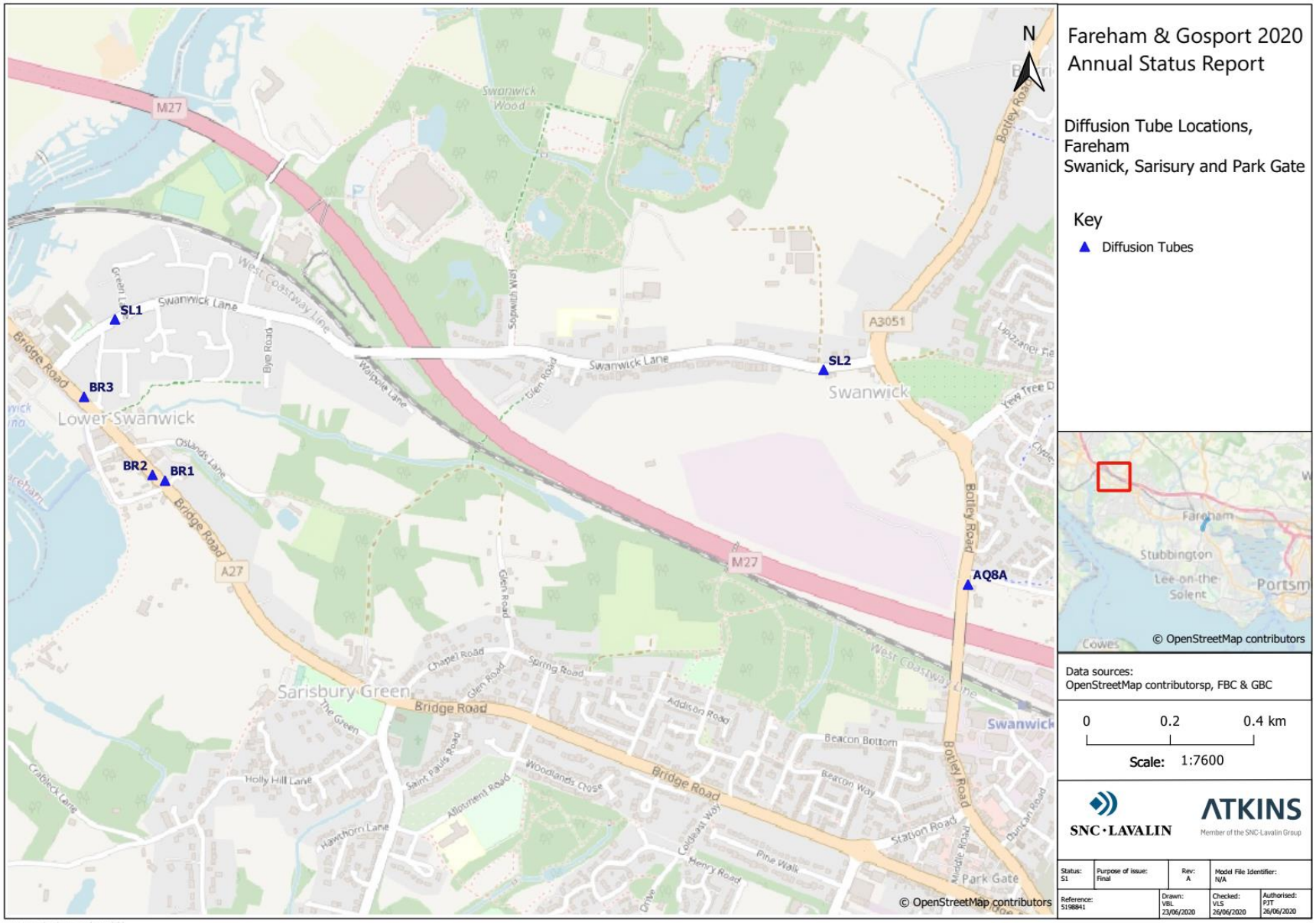
In 2019, the tube precision in the NO_2 Annual Field Inter-Comparison for Gradko International using the 20% TEA in water method was 'good' for the results of 25 participating local authority sites, with a further two recording 'poor' precision.

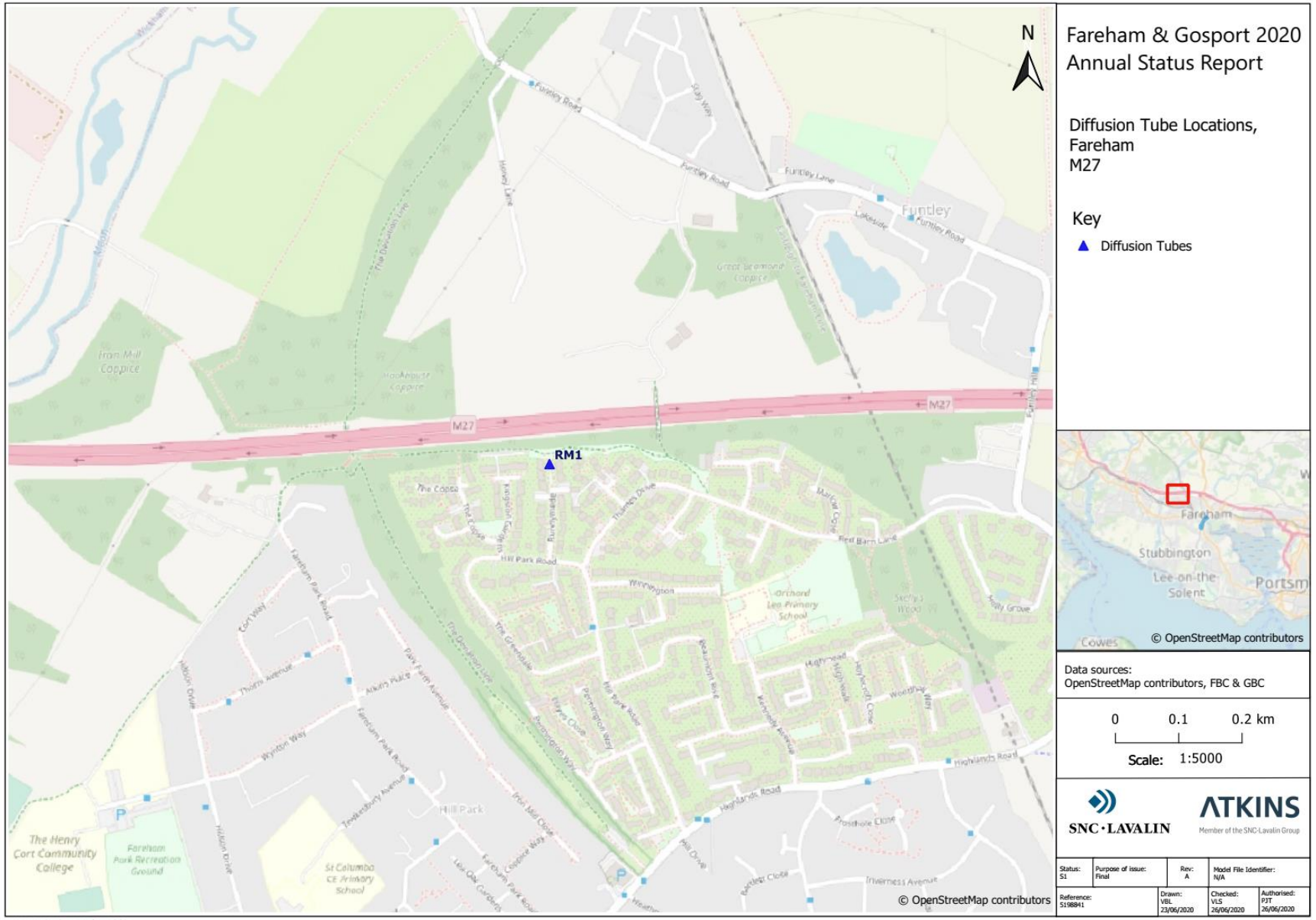
Appendix D: Map(s) of Monitoring Locations and AQMAs

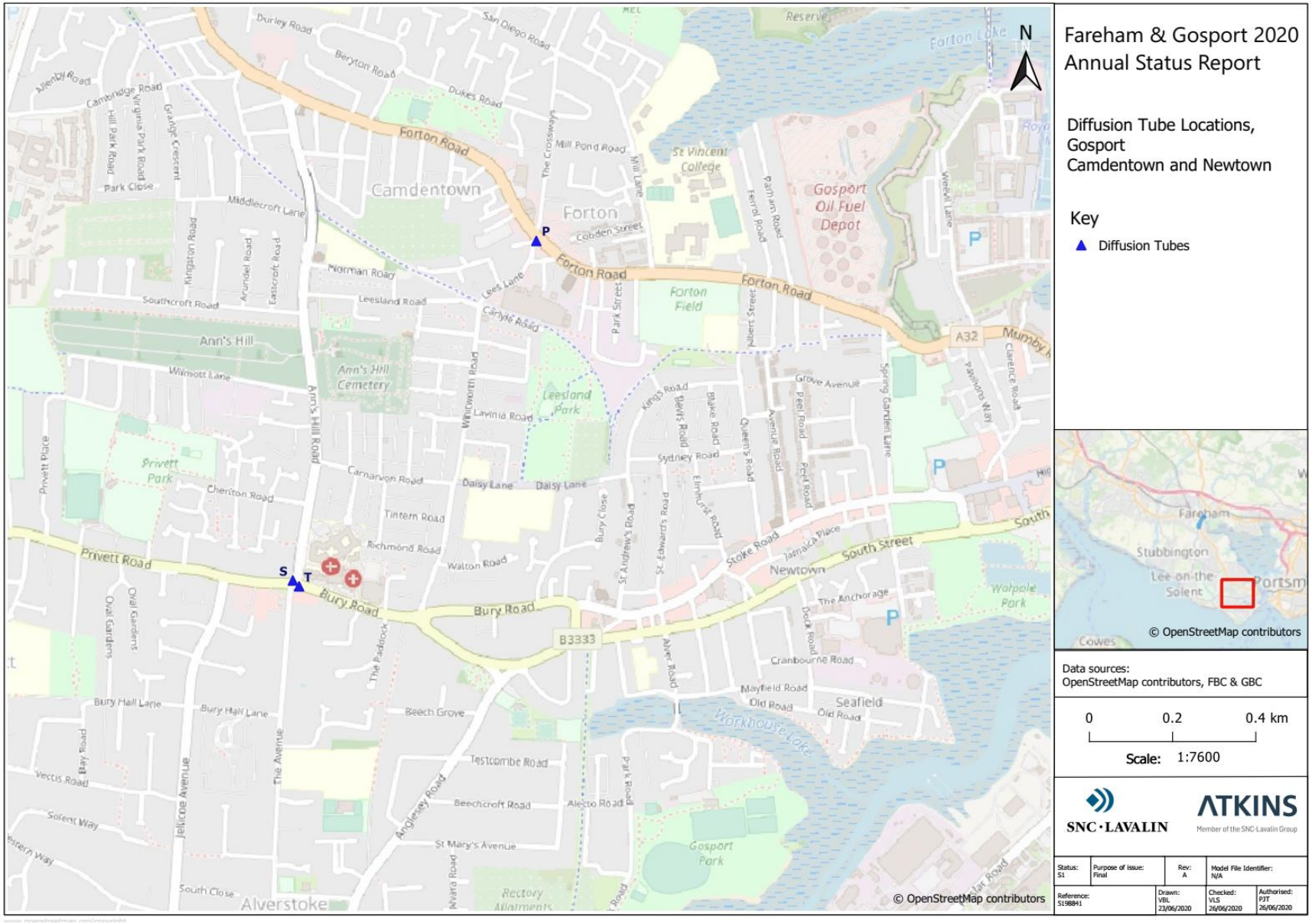

Fareham & Gosport 2020
Annual Status Report
AQMAs & Continuous
Monitoring Sites (Fareham)
Key
Automatic Monitor
AQMA
N
Portland Street AQMA
Portland Street - FAR2
Gosport Road AQMA
Gosport Road - FAR1
© OpenStreetMap contributors
Data sources:
OpenStreetMap contributors, FBC & GBC
0
0.1
0.2 km
Scale: 1:5000
SNC·LAVALIN
ATKINS
Member of the SNC-Lavalin Group

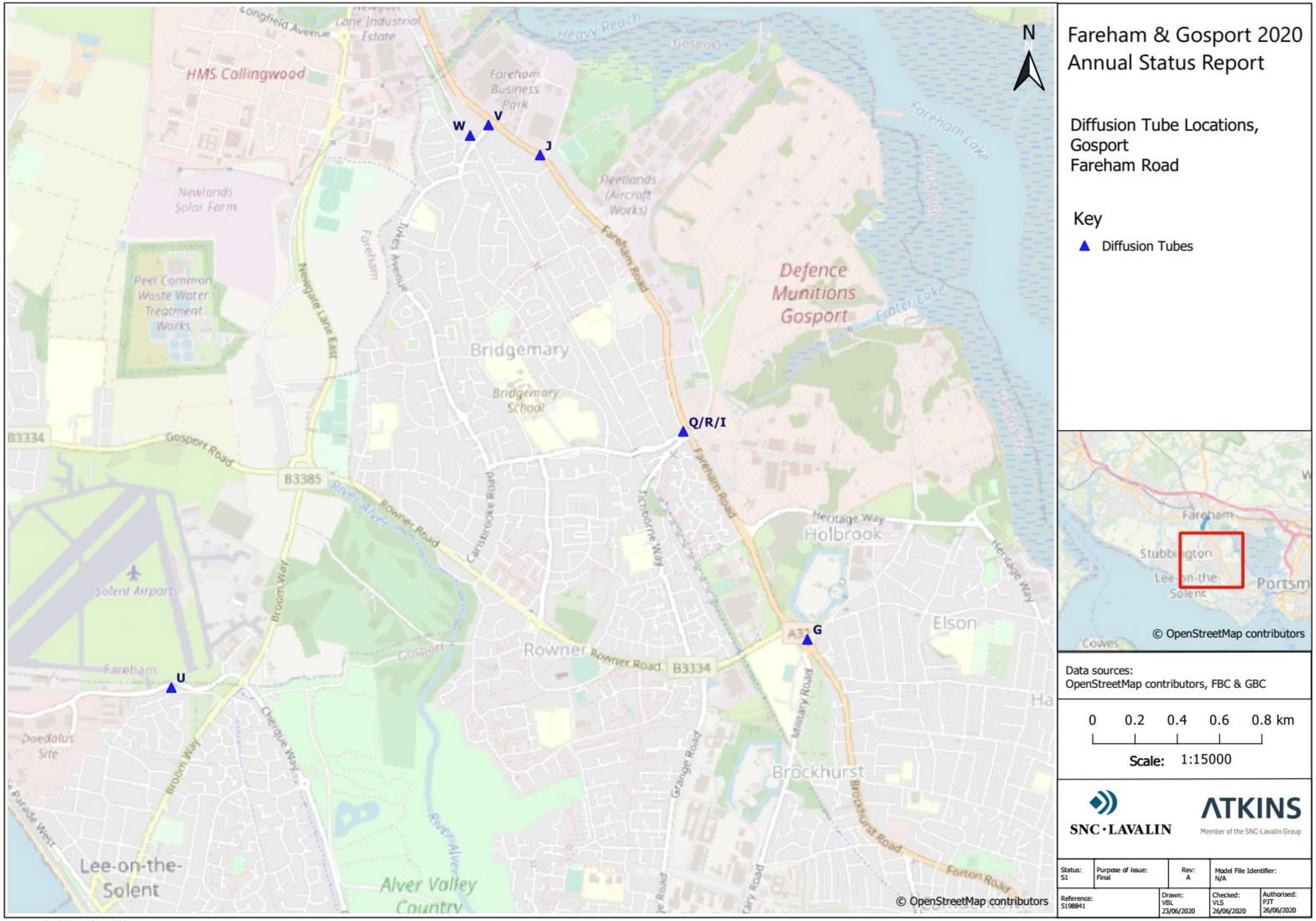

N
Fareham & Gosport 2020
Annual Status Report
Continuous Monitoring Sites
(Gosport)
Key
Automatic Monitor
Tichborne Way - GOS1
Fareham Road
A32
Brewers Lane
Tichborne Way
Holbrook
Rowner Junior School
Rowner Infant School
Beckenham Primary School
Haven Nursery School and Children's Centre
Fareham
Stubbington
Lee-on-the-Solent
Portsmouth
© OpenStreetMap contributors
Data sources:
OpenStreetMap contributors, FBC & GBC
0 0.1 0.2 km
Scale: 1:5000
SNC·LAVALIN
ATKINS
Member of the SNC-Lavalin Group
Status: S1
Purpose of issue: Final
Rev: A
Model File Identifier: N/A
Reference: 5198841
Drawn: VBL 23/06/2020
Checked: VLS 26/06/2020
Authorised: PJT 26/06/2020


Fareham & Gosport 2020 Annual Status Report
AQMAs & Diffusion Tube Locations, Fareham Gosport Rd and Portland St
Key
Diffusion Tubes
AQMA
WW3
DC1
WW2
HR3A
HR2
HR4
PS3
PS4/5/6
WW1
PS2
PS1/1A/1B
BL1
A27
CM2
CM3
CM1
G12
G1A
G10
G14
G11
G6
G7
GR/RL
E1/2/3
G4
G2A
G8Z
G3
© OpenStreetMap contributors
Data sources:
OpenStreetMap contributors, FBC & GBC
0
0.2
0.4 km
Scale: 1:7600
SNC·LAVALIN
ATKINS
Member of the SNC-Lavalin Group
Status: S1
Purpose of issue: Final
Rev: A
Model File Identifier: N/A
Reference: 5198841
Drawn: VBL 23/06/2020
Checked: VLS 26/06/2020
Authorised: PJT 26/06/2020


Fareham & Gosport 2020
Annual Status Report
Diffusion Tube Locations,
Fareham
Swanick, Sarisury and Park Gate
Key
Diffusion Tubes
N
SL1
SL2
BR1
BR2
BR3
AQ8A
M27
A27
A3051
Swanwick Lane
Bridge Road
Botley Road
Lower Swanwick
Swanwick
Sarisbury Green
Park Gate
Fareham
Stubbington
Lee-on-the-Solent
Portsm
Cowes
© OpenStreetMap contributors
Data sources:
OpenStreetMap contributorsp, FBC & GBC
0
0.2
0.4 km
Scale: 1:7600
SNC·LAVALIN
ATKINS
Member of the SNC-Lavalin Group
Status: S1
Purpose of issue: Final
Rev: A
Model File Identifier: N/A
Reference: 5198841
Drawn: VBL 23/06/2020
Checked: VLS 26/06/2020
Authorised: PJT 26/06/2020


N
Fareham & Gosport 2020
Annual Status Report
Diffusion Tube Locations,
Fareham
M27
Key
Diffusion Tubes
RM1
M27
Funtley
Fareham
Stubbington
Lee-on-the
Solent
© OpenStreetMap contributors
Data sources:
OpenStreetMap contributors, FBC & GBC
0
0.1
0.2 km
Scale: 1:5000
SNC·LAVALIN
ATKINS
Member of the SNC-Lavalin Group
Status: S1
Purpose of issue: Final
Rev: A
Model File Identifier: N/A
Reference: 5198841
Drawn: VBL 23/06/2020
Checked: VLS 26/06/2020
Authorised: PJT 26/06/2020


Fareham & Gosport 2020
Annual Status Report
Diffusion Tube Locations,
Gosport
Camdentown and Newtown
Key
Diffusion Tubes
N
P
S
T
Forton Road
Camdentown
Forton
Gosport Oil Fuel Depot
St Vincent College
Forton Field
Ann's Hill
Ann's Hill Cemetery
Leesland Park
Privett Park
Privett Road
Bury Road
B3333
Newtown
South Street
Stoke Road
Walpole Park
Seafield
Workhouse Lake
Gosport Park
Alverstoke
Rectory Allotments
A32
Fareham
Stubbington
Lee-on-the-Solent
Portsm
Cowes
© OpenStreetMap contributors
Data sources:
OpenStreetMap contributors, FBC & GBC
0 0.2 0.4 km
Scale: 1:7600
SNC·LAVALIN
ATKINS
Member of the SNC-Lavalin Group
Status: S1
Purpose of issue: Final
Rev: A
Model File Identifier: N/A
Reference: 5198841
Drawn: VBL 23/06/2020
Checked: VLS 26/06/2020
Authorised: PJT 26/06/2020


Fareham & Gosport 2020
Annual Status Report
Diffusion Tube Locations,
Gosport
Fareham Road
Key
Diffusion Tubes
N
W
V
J
Q/R/I
G
U
HMS Collingwood
Fareham Business Park
Newlands Solar Farm
Peel Common Waste Water Treatment Works
Fleetlands (Aircraft Works)
Defence Munitions Gosport
Bridgemary
Bridgemary School
Fareham Road
Gosport Road
B3334
B3385
Rowner Road
Holbrook
Heritage Way
Elson
Brockhurst
Brockhurst Road
Solent Airport
Daedalus Site
Lee-on-the-Solent
Alver Valley Country
Broom Way
Newgate Lane East
Fareham Lake
Forton Road
© OpenStreetMap contributors
Fareham
Stubbington
Lee-on-the-Solent
Portsm
Cowes
© OpenStreetMap contributors
Data sources:
OpenStreetMap contributors, FBC & GBC
0 0.2 0.4 0.6 0.8 km
Scale: 1:15000
SNC·LAVALIN
ATKINS
Member of the SNC-Lavalin Group
Status: S1
Purpose of issue: Final
Rev: A
Model File Identifier: N/A
Reference: 5198841
Drawn: VBL 23/06/2020
Checked: VLS 26/06/2020
Authorised: PJT 26/06/2020

Appendix E: Summary of Air Quality Objectives in England

Table E.1 – Air Quality Objectives in England

Pollutant	Air Quality Objective[21]	
	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

[21] 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	Annual Status Report
BRT	Bus Rapid Transit
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
FBC	Fareham Borough Council
FDMS	Filter Dynamics Measurement System
GBC	Gosport Borough Council
HCC	Hampshire County Council
LAQM	Local Air Quality Management
LTP	Local Transport Plan
NO_2	Nitrogen Dioxide
NO_x	Nitrogen Oxides
PM_{10}	Airborne particulate matter with an aerodynamic diameter of 10µm (micrometres or microns) or less

$PM_{2.5}$	Airborne particulate matter with an aerodynamic diameter of 2.5µm or less
QA/QC	Quality Assurance and Quality Control
RTI	Real Time Information
SO_2	Sulphur Dioxide
STAG	Strategic Access to Gosport (2010-2026)
TfSH	Transport for South Hampshire

References

- Air quality and social deprivation in the UK: an environmental inequalities analysis, 2006
- Defra, 2019. Clean Air Strategy 2019.
- Defra, 2019. National Diffusion Tube Bias Adjustment Factor Spreadsheet, v03/19 published in March 2019.
- Defra, 2017. UK Plan for Tackling Roadside NO_2 Concentrations. July 2017
- Defra, 2016. Local Air Quality Management Policy Guidance LAQM.PG(16). May 2016. Published by Defra in partnership with the Scottish Government, Welsh Assembly Government and Department of the Environment Northern Ireland.
- Defra, 2016. Local Air Quality Management Technical Guidance LAQM.TG(16). May 2016. Published by Defra in partnership with the Scottish Government, Welsh Assembly Government and Department of the Environment Northern Ireland.
- Defra, 2013. Abatement cost guidance for valuing changes in air quality, May 2013
- Environmental equity, air quality, socioeconomic status and respiratory health, 2010
- Fareham Borough Council, 2017. Draft Fareham Local Plan 2036. October 2017
- Fareham Borough Council, 2008. Air Quality Action Plan, Gosport Road and Portland Street Fareham.
- Fareham and Gosport, 2019. Annual Air Quality Status Report 2018. August 2019.
- Fareham and Gosport, 2018. Annual Air Quality Status Report 2017. August 2018.
- Public Health England (2014) Estimating Local Mortality Burdens Associated with Particulate Air Pollution.