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Annual Status Report 2021

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FAREHAM
BOROUGH COUNCIL



GOSPORT
Borough Council

Working in partnership

2021 Air Quality Annual Status Report (ASR)

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

Date: August, 2021

Fareham and Gosport Environmental Health Partnership

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Executive Summary: Air Quality in Our Area

Air Quality in Fareham and Gosport Borough Councils

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, the elderly, and those with existing heart and lung conditions. There is also often a strong correlation with equalities issues because areas with poor air quality are also often less affluent areas^{1,2}.

The mortality burden of air pollution within the UK is equivalent to 28,000 to 36,000 deaths at typical ages³, with a total estimated healthcare cost to the NHS and social care of £157 million in 2017⁴.

During 2020, there was only one monitored exceedance of the annual mean NO₂ AQS objective (40µg/m³). This was at the diffusion tube monitoring location CM2, whereby an annual mean concentration of 47.6µg/m³ was reported. One additional site reported an annual mean concentration within 10% of the AQS objective – diffusion tube site A27 (38.3µg/m³). Both of these are located outside existing declared Air Quality Management Area (AQMA) boundaries, however neither are located at a site of relevant exposure. There is no relevant exposure near to A27, however for CM2 once fall-off with distance calculations were carried out, it is predicted that there is an annual mean concentration of 30.7µg/m³ at the nearest relevant receptor.

Where monitoring data is available for more than one-year, annual mean NO₂ concentrations have largely shown a decrease compared to what was reported in previous years. In particular, the decrease seen in annual mean NO₂ concentrations in 2020 can be

¹ Public Health England. Air Quality: A Briefing for Directors of Public Health, 2017

² Defra. Air quality and social deprivation in the UK: an environmental inequalities analysis, 2006

³ Defra. Air quality appraisal: damage cost guidance, July 2020

⁴ Public Health England. Estimation of costs to the NHS and social care due to the health impacts of air pollution: summary report, May 2018

largely attributed to the impacts of the COVID-19 pandemic. However, even without the inclusion of the 2020 data, monitoring across the boroughs suggests that annual mean NO₂ concentrations have been gradually decreasing, or largely remaining stable. Although COVID-19 has led to a reduction of annual mean NO₂ concentrations across much of the boroughs, previous years had a lesser decreasing trend. Despite this, monitoring locations within the existing declared AQMAs have shown annual mean NO₂ concentrations to be below the AQS objective for more than three years, regardless of the 2020 data. The Council will therefore continue to consider revoking these AQMAs but intend to keep these in place until the long-term impacts of the COVID-19 pandemic can be better understood.

No sites reported a concentration in excess of 60µg/m³, and it is therefore believed that there was no risk of breaching the 1-hour NO₂ AQS objective in 2020. Additionally, automatic monitoring locations indicate that there have been less than 18 1-hour concentrations in excess of 200µg/m³.

Monitored PM₁₀ concentrations for 2020 have shown that the annual mean concentration remains well below the AQS objective of 40µg/m³, and that there have been significantly less than 35 24-hour concentrations greater than 50µg/m³.

Actions to Improve Air Quality

Whilst air quality has improved significantly in recent decades and will continue to improve due to national policy decisions, there are some areas where local action is needed to improve air quality further.

The 2019 Clean Air Strategy⁵ sets out the case for action, with goals even more ambitious than EU requirements to reduce exposure to harmful pollutants. The Road to Zero⁶ sets out the approach to reduce exhaust emissions from road transport through a number of mechanisms; this is extremely important given that the majority of AQMAs are designated due to elevated concentrations heavily influenced by transport emissions.

⁵ Defra. Clean Air Strategy, 2019

⁶ DfT. The Road to Zero: Next steps towards cleaner road transport and delivering our Industrial Strategy, July 2018

Fareham and Gosport Environmental Health Partnership

During 2020, Fareham and Gosport Borough Councils have progressed the following measures:

- Completion of the taxi replacement incentive scheme, whereby a total of 68 vehicles have been replaced;
- Completion of the provision of Real Time Passenger Information (RTPI) at bus stops, whereby these have been implemented at 55 bus shelters across Fareham and Gosport;
- Improvement of the operation of traffic signals on Markey Quay, improving the flow of traffic along the Eastern Way; and
- Both Council websites have been updated to include subsections on air quality topics, with the aim to act as an air quality hub with various links for more specific information.

These, alongside previously completed measures, continue to help improve air quality conditions throughout the boroughs, and to maintain low concentrations in the long-term.

Conclusions and Priorities

The priorities for Fareham and Gosport Borough Councils in addressing and managing air quality within their local areas in the coming year includes:

- Continued progression of schemes to encourage users of local bus services and increase numbers of people using them.
- Continued progression on the development of the Climate Change policy and associated works.
- Continued review of the monitoring network and deployment of additional monitoring locations where concentrations are believed to be elevated.
- Understanding the long-term impacts of the COVID-19 pandemic on air quality within the boroughs to aid the revocation of both of the declared AQMAs.

Local Engagement and How to get Involved

More information about air quality in Fareham and Gosport can be obtained from the following websites:

- [Fareham Borough Council](#)
- [Gosport Borough Council](#)

- [Air Quality England](#)
- [WeCare4Air](#)

A [leaflet is available](#) which has been produced in conjunction with the National Health Service that provides information for different air pollutants including the specific health effects relating to air pollution and what can be done to combat poor air quality.

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. Information on cycle routes in [Fareham](#) and [Gosport](#) is available online from both council websites.
- **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.
- **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 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.
- **Home heating:**
 - If considering the use of open fires or wood burning stoves, ensure to also consider what 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.
 - Consider buying a boiler with low/reduced NO_x emissions.

Daily national air quality updates, pollution forecasts and advice about how to protect yourself from the impacts of poor air quality can be found on [UK-AIR](#).

Table of Contents

2021 Air Quality Annual Status Report (ASR).....	2
Executive Summary: Air Quality in Our Area	i
Air Quality in Fareham and Gosport Borough Councils.....	i
Actions to Improve Air Quality	ii
Conclusions and Priorities	iii
Local Engagement and How to get Involved.....	iii
1 Local Air Quality Management.....	1
2 Actions to Improve Air Quality.....	2
2.1 Air Quality Management Areas	2
2.2 Progress and Impact of Measures to address Air Quality in Fareham and Gosport	4
2.3 PM _{2.5} – Local Authority Approach to Reducing Emissions and/or Concentrations	15
3 Air Quality Monitoring Data and Comparison with Air Quality Objectives and National Compliance	17
3.1 Summary of Monitoring Undertaken.....	17
3.1.1 Automatic Monitoring Sites	17
3.1.2 Non-Automatic Monitoring Sites	17
3.2 Individual Pollutants.....	18
3.2.1 Nitrogen Dioxide (NO ₂)	18
3.2.2 Particulate Matter (PM ₁₀)	19
Appendix A: Monitoring Results	20
Appendix B: Full Monthly Diffusion Tube Results for 2020	38
Appendix C: Supporting Technical Information / Air Quality Monitoring Data QA/QC	42
New or Changed Sources Identified Within Fareham and Gosport During 2020.....	42
Additional Air Quality Works Undertaken by Fareham and Gosport During 2020.....	42
QA/QC of Diffusion Tube Monitoring	48
Diffusion Tube Annualisation.....	48
Diffusion Tube Bias Adjustment Factors	49
NO ₂ Fall-off with Distance from the Road.....	50
QA/QC of Automatic Monitoring	50
PM ₁₀ and PM _{2.5} Monitoring Adjustment	51
Automatic Monitoring Annualisation	51
NO ₂ Fall-off with Distance from the Road.....	51
Appendix D: Maps of Monitoring Locations and AQMAs.....	56
Appendix E: Summary of Air Quality Objectives in England.....	69
Appendix F: Impact of COVID-19 upon LAQM	70
Impacts of COVID-19 on Air Quality within Fareham and Gosport Borough Councils.....	71

Fareham and Gosport Environmental Health Partnership

Opportunities Presented by COVID-19 upon LAQM within Fareham and Gosport Borough Councils	72
Challenges and Constraints Imposed by COVID-19 upon LAQM within Fareham and Gosport Borough Councils	73
Glossary of Terms	75
References	76

Figures

Figure A.1 – Trends in Annual Mean NO ₂ Concentrations in the Gosport Road AQMA	30
Figure A.2 – Trends in Annual Mean NO ₂ Concentrations in the Portland Street AQMA...	31
Figure A.3 – Trends in Annual Mean NO ₂ Concentrations In Fareham Outside AQMAs...	32
Figure A.4 – Trends in Annual Mean NO ₂ Concentrations In Gosport Outside AQMAs	33
Figure A.5 – Trends in Annual Mean PM ₁₀ Concentrations	36
Figure C.1 – National Diffusion Tube Bias Adjustment Factor Spreadsheet 06/21	54
Figure D.1 – Map of Monitoring Sites in Fareham and Gosport.....	56
Figure D.2 – Map of Automatic Monitoring Sites in Fareham.....	57
Figure D.3 – Map of Automatic Monitoring Sites in Gosport	58
Figure D.4 – Map of Diffusion Tube Monitoring Locations Around the Gosport Road AQMA	59
Figure D.5 – Map of Diffusion Tube Monitoring Locations Around the Portland Street AQMA	60
Figure D.6 – Map of Diffusion Tube Monitoring Locations in Fareham	61
Figure D.7 – Map of Diffusion Tube Monitoring Locations in Fareham	62
Figure D.8 – Map of Diffusion Tube Monitoring Locations in Fareham	63
Figure D.9 – Map of Diffusion Tube Monitoring Locations in Fareham	64
Figure D.10 – Map of Diffusion Tube Monitoring Locations in Gosport.....	65
Figure D.11 – Map of Diffusion Tube Monitoring Locations in Gosport.....	66
Figure D.12 – Map of Diffusion Tube Monitoring Locations in Gosport.....	67
Figure D.13 – Map of Diffusion Tube Monitoring Locations in Gosport.....	68

Tables

Table 2.1 – Declared Air Quality Management Areas	3
Table 2.2 – Progress on Measures to Improve Air Quality.....	6
Table A.1 – Details of Automatic Monitoring Sites	20
Table A.2 – Details of Non-Automatic Monitoring Sites	21
Table A.3 – Annual Mean NO ₂ Monitoring Results: Automatic Monitoring (µg/m ³)	25
Table A.4 – Annual Mean NO ₂ Monitoring Results: Non-Automatic Monitoring (µg/m ³)	26
Table A.5 – 1-Hour Mean NO ₂ Monitoring Results, Number of 1-Hour Means > 200µg/m ³	34
Table A.6 – Annual Mean PM ₁₀ Monitoring Results (µg/m ³)	35
Table A.7 – 24-Hour Mean PM ₁₀ Monitoring Results, Number of PM ₁₀ 24-Hour Means > 50µg/m ³	37

Table B.1 – NO ₂ 2020 Diffusion Tube Results (µg/m ³)	38
Table C.1 – Total Number of Cremations at Portchester Crematorium	42
Table C.2 – Details of Short Study Non-Automatic Monitoring Sites	44
Table C.3 – Short-term Study NO ₂ 2020 Diffusion Tube Results (µg/m ³)	46
Table C.4 – Bias Adjustment Factor	50
Table C.5 – Annualisation Summary (concentrations presented in µg/m ³)	52
Table C.6 – Local Bias Adjustment Calculation	53
Table C.7 – NO ₂ Fall off With Distance Calculations (concentrations presented in µg/m ³)	55
Table E.1 – Air Quality Objectives in England	69
Table F 1 – Impact Matrix	74

1 Local Air Quality Management

This report provides an overview of air quality in both Fareham and Gosport Borough Councils (“Fareham and Gosport”) during 2020. 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 are presented in Table E.1.

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 should prepare an Air Quality Action Plan (AQAP) within 12 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. The table presents a description of the 2 AQMAs that are currently designated within Fareham Borough Council. Appendix D: Maps of Monitoring Locations and AQMAs provides maps of the AQMAs and also the air quality monitoring locations in relation to the AQMAs. The air quality objectives pertinent to the current AQMA designations are as follows:

- NO₂ annual mean.

We propose to revoke both the Gosport Road and the Portland Street AQMAs once the long-term impacts of COVID-19 are better understood (see monitoring/additional section).

Gosport Borough Council currently does not have any declared AQMAs.

Table 2.1 – Declared Air Quality Management Areas

AQMA Name	Date of Declaration	Pollutants and Air Quality Objectives	One Line Description	Is air quality in the AQMA influenced by roads controlled by Highways England?	Level of Exceedance: Declaration	Level of Exceedance: Current Year	Name and Date of AQAP Publication	Web Link to AQAP
Portland Street AQMA	Declared 01/12/2007, Amended 01/11/2017	NO ₂ Annual Mean	An area encompassing residential properties and the Sacred Heart Catholic Church on Portland Street and the southern end of Hartland Road Fareham.	NO	45.3µg/m ³	27.8µg/m ³	AQAP, Gosport Road & Portland Street. Published 2008	Visit the AQAP for the Portland Street AQMA
Gosport Road AQMA	Declared 01/04/2006, Amended 01/11/2017	NO ₂ Annual Mean	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	47.3µg/m ³	30.4µg/m ³	AQAP, Gosport Road & Portland Street. Published 2008	Visit the AQAP for the Gosport Road AQMA

Fareham and Gosport confirm the information on UK-Air regarding their AQMA(s) is up to date.

Fareham and Gosport confirm that all current AQAPs have been submitted to Defra.

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

Defra's appraisal of last year's ASR concluded that *"the report is well structured, detailed, and provides the information specified in the Guidance"*. Additional comments made are as follows:

1. *"It is noted that the Council's continuous data is yet to be ratified. It is suggested that the Council aim to have this completed as soon as possible."*
2. *The Air Quality Action Plan was last published in 2008, not only does this make the AQAP extremely out of date but it also means that it does not include the new amendment made to the AQMAs in 2017. It is noted that the Council regularly review the AQAP measures and introduce additional measures accordingly and this should be continued in light of the current circumstances regarding Covid-19 which are impeding the development of a new AQAP."*
3. *Last year's appraisal suggested that the Council may wish to consider a review of the core strategy and/or planning guidance to ensure air quality is adequately addressed with respects to the cumulative emission impacts of planned developments. The Council have introduced new policies relating to air quality in their Draft Local Plan. However, the need for a separate supplementary planning guidance will be kept under review."*
4. *The Council wish to maintain the status of their AQMAs at this time until the impacts of Covid-19 are fully understood. They anticipate that revocation of the AQMAs may be considered after 2021 should current downward trends in NO₂ continue."*

With consideration of the impacts of the COVID-19 pandemic, the status of the AQMAs will continue to be kept under review and await further data from future years to understand whether compliance observed is to be long term. Progress of the AQAP is continued to be delayed further as well due to the pandemic, and until its impacts can be better understood.

Fareham and Gosport have taken forward a number of direct measures during the current reporting year of 2020 in pursuit of improving local air quality. Details of all measures completed, in progress or planned are set out in Table 2.2. 20 measures are included

Fareham and Gosport Environmental Health Partnership

within Table 2.2, with the type of measure and the progress Fareham and Gosport Borough Councils have made during the reporting year of 2021 presented. Where there have been, or continue to be, barriers restricting the implementation of the measure, these are also presented within Table 2.2.

More detail on these measures can be found in their respective Action Plans, the Gosport Road & Portland Street AQAP. Key completed measures are:

- Completion of the taxi replacement incentive scheme, whereby a total of 68 vehicles have been replaced;
- Completion of the provision of Real Time Passenger Information (RTPI) at bus stops, whereby these have been implemented at 55 bus shelters across Fareham and Gosport;
- Improvement of the operation of traffic signals on Markey Quay, improving the flow of traffic along the Eastern Way; and
- Both Council websites have been updated to include subsections on air quality topics, with the aim to act as an air quality hub with various links for more specific information.

Fareham and Gosport Borough Councils expect the following measures to be progressed over the course of the next reporting year:

- Continued progression of schemes to encourage users of local bus services and increase numbers of people using them; and
- Continued progression on the development of the Climate Change policy and associated works.

The principal challenges and barriers to implementation that the Councils anticipate facing are understanding the long-term impacts of the COVID-19 pandemic. This impacts the progression and development of an updated AQAP and associated measures.

The Councils anticipate that the measures stated above and in Table 2.2 will ensure that the annual mean NO₂ air quality objective is achieved in both the Portland Street and Gosport Road AQMAs and that it may be possible to revoke both AQMAs once the long-term impacts of COVID-19 are fully understood.

Table 2.2 – Progress on Measures to Improve Air Quality

Measure No.	Measure	Category	Classification	Year Measure Introduced	Estimated / Actual Completion Year	Organisations Involved	Funding Source	Defra AQ Grant Funding	Funding Status	Estimated Cost of Measure	Measure Status	Reduction in Pollutant / Emission from Measure	Key Performance Indicator	Progress to Date	Comments / Barriers to Implementation
1	Development of Fareham Borough Council's Local Air Plan to comply with the EU Limit Value for NO ₂ in the shortest possible time	Policy Guidance and Development Control	Regional Groups Co-ordinating programmes to develop Area wide Strategies to reduce emissions and improve air quality	2019	Complete	FBC and HCC; Funded by Defra/DfT	Defra/DfT (Joint Air Quality Unit)	NO	Not Funded	£10k - £50k	Completed	Reduction of NO _x (and PM) emissions	Submission of Outline Business Case to Defra/DfT and subsequent funding of measures	Outline Business Case submitted in Dec-18 and confirmation that four measures would be funded received in Mar19.	Measures were selected that can be implemented in 2019, to reduce NO ₂ concentrations as quickly as possible. The approach aims to achieve compliance in 2020.
2	To implement a taxi replacement incentive scheme as part of Local NO ₂ Plan	Promoting Low Emission Transport	Taxi emission incentives	2018	2018-2021	FBC	Defra/DfT (Joint Air Quality Unit)	NO	Fully Funded	£100k - £500k	Completed	Reduction of NO _x emissions from taxis	Decrease in proportion of pre-Euro 6 diesel taxis in local taxi fleet compared with lower emission alternatives	<p>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 the scheme. This has since further reduced to 103. A</p> <p>licensing</p>	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 NO ₂ 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

Measure No.	Measure	Category	Classification	Year Measure Introduced	Estimated / Actual Completion Year	Organisations Involved	Funding Source	Defra AQ Grant Funding	Funding Status	Estimated Cost of Measure	Measure Status	Reduction in Pollutant / Emission from Measure	Key Performance Indicator	Progress to Date	Comments / Barriers to Implementation
														145 at the end of scheme. This has reduced further to 103. The scheme has now ended with a total of 68 vehicles replaced.	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.
3	To improve infrastructure for walking and cycling as part of Local NO ₂ Plan	Transport Planning and Infrastructure	Cycle network	2019	Complete	HCC	Defra/DfT (Joint Air Quality Unit)	NO	Fully Funded	£1 million - £10 million	Completed	Reduction of NO _x (and PM) emissions	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	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.	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.
4	To provide Real Time Passenger Information (RTPI) at bus stops as part of Local NO ₂ Plan	Transport Planning and Infrastructure	Public transport improvements interchanges stations and services	2019	Complete	HCC	Defra/DfT (Joint Air Quality Unit)	NO	Fully Funded	£500k - £1 million	Completed	Reduction of NO _x (and PM) emissions	Installation of RTPI at additional bus stops Growth in public transport mode share. Annual number of 5passenger 6trips.	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 acknowledge as an enabler of increasing public transport uptake. These schemes were delivered by January 2020. The scheme was completed early 2020 55	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	Category	Classification	Year Measure Introduced	Estimated / Actual Completion Year	Organisations Involved	Funding Source	Defra AQ Grant Funding	Funding Status	Estimated Cost of Measure	Measure Status	Reduction in Pollutant / Emission from Measure	Key Performance Indicator	Progress to Date	Comments / Barriers to Implementation
														bus shelters across Fareham and Gosport	
5	To improve operation of traffic signals on Market Quay and improve traffic flow along Eastern Way as part of Local NO ₂ Plan	Traffic Management	UTC, Congestion management, traffic reduction	2019	Complete	HCC	Defra/DfT (Joint Air Quality Unit)	NO	Fully Funded	£10k - £50k	Completed	Reduction of NO _x (and PM) emissions	Install SCOOT signal optimisation Increase traffic speeds at Quay Street roundabout approaches	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. The scheme has been effective on parts of the throughabout where the priority route is to the M27, where exceedances have been predicted, as well as being the subject of the Ministerial Direction.	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 be highly localised.
6	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	Ongoing	FBC	Local Authority	NO	Fully Funded	<£10k	Implementation	Reduction of vehicle emissions	Taxi standards for new licenses set at a minimum of Euro 6 for diesel vehicles	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.	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

Measure No.	Measure	Category	Classification	Year Measure Introduced	Estimated / Actual Completion Year	Organisations Involved	Funding Source	Defra AQ Grant Funding	Funding Status	Estimated Cost of Measure	Measure Status	Reduction in Pollutant / Emission from Measure	Key Performance Indicator	Progress to Date	Comments / Barriers to Implementation
															factors from Defra.
7	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 Reprioritising road space away from cars, including Access management, Selective vehicle priority, bus priority, high vehicle occupancy lane	Ongoing	Ongoing	HCC	County	-	-	-	Implementation	Reduction of NO _x and PM emissions	Annual progress towards the programmed 19 schemes listed in the study.	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.	The STAG transport study informed the Local Transport Plan (LTP3, 2011) and the subsequent Fareham and Gosport Transport Statements (2013)9.
8	To provide a suitable alternative to the light rapid transit system linking Fareham, Gosport and Portsmouth	Promoting Travel Alternatives	Other	Ongoing	Ongoing	HCC/TfSH	County	NO	Fully Funded	>£10 million	Implementation	Reduction of NO _x emissions	Annual progress against the key measures and timeframes set out for the BRT phases	The Eclipse Busway extension is currently under construction and will extend the existing BRT 1 km further into	The enhanced scheme will retain Rowner Road bridge and the existing shared-use route for pedestrians and cyclists under

Measure No.	Measure	Category	Classification	Year Measure Introduced	Estimated / Actual Completion Year	Organisations Involved	Funding Source	Defra AQ Grant Funding	Funding Status	Estimated Cost of Measure	Measure Status	Reduction in Pollutant / Emission from Measure	Key Performance Indicator	Progress to Date	Comments / Barriers to Implementation		
																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. The scheme was delayed due to the pandemic but is still in progress.	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.
9	Increase numbers of people using local bus services	Transport Planning and Infrastructure	Other	Ongoing	Ongoing	HCC/First	County	NO	Not Funded	£10k - £50k	Implementation	Reduction of NO _x and PM emissions	Annual number of passenger trips using BRT services	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 RTPPI at bus stops. The scheme was delayed due to the pandemic but is still in progress.	N/A		
10	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	Ongoing	HCC	County	NO	Not Funded	£10k - £50k	Implementation	Reduction of NO _x emissions	All schools in Fareham close to the AQMAs have implemented School Travel Plans	Continued liaison with HCC School Travel Planning group. Diffusion tubes have been sited at several locations adjacent to local schools.	Diffusion tube data has been collected at schools for two month periods during 2017, 2018, 2019 and 2020. All raw monthly results recorded were below the level of the annual mean air quality objective for		

Measure No.	Measure	Category	Classification	Year Measure Introduced	Estimated / Actual Completion Year	Organisations Involved	Funding Source	Defra AQ Grant Funding	Funding Status	Estimated Cost of Measure	Measure Status	Reduction in Pollutant / Emission from Measure	Key Performance Indicator	Progress to Date	Comments / Barriers to Implementation
															NO ₂ . The results were not included in the ASR, as they do not meet data capture requirements for annualisation
11	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	HCC/FBC	Local Authority, County	NO	Not Funded	£10k - £50k	Implementation	Reduction of NO _x emissions	Implementation of proposals	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 reemphasised through the Green Infrastructure Strategy and the Active Travel Strategy.	The Town Access Plan informed the Fareham Transport Statement (2013) 10.
12	To continue to inspect premises and take appropriate enforcement action in To continue to inspect premises and take appropriate enforcement action in.	Environmental Permits	Other	Ongoing	Ongoing	FBC	Local Authority	NO	Not Funded	£10k - £50k	Implementation	Reduction of emissions from permitted activities	Submission of Defra return	All due inspections undertaken in 2018/19. Return submitted to Defra on time	Continuing programme for inspections.
13	Promote the use of planning policies, alongside other planning and transport measures, to promote sustainable transport choices and reduce	Policy Guidance and Development Control	Air Quality Planning and Policy Guidance	Ongoing	Ongoing	FBC/GBC	Local Authority	NO	Not Funded	£10k - £50k	Implementation	Reduction of NO _x and PM emissions	Examples of where FBC requires higher provision of cycle facilities or lower car parking facilities than the HCC standards for new developments.	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	Planning processes ongoing

Measure No.	Measure	Category	Classification	Year Measure Introduced	Estimated / Actual Completion Year	Organisations Involved	Funding Source	Defra AQ Grant Funding	Funding Status	Estimated Cost of Measure	Measure Status	Reduction in Pollutant / Emission from Measure	Key Performance Indicator	Progress to Date	Comments / Barriers to Implementation
	reliance on the car													flexibility in travel modes, minimise emissions and contribute to reduction of transport impacts on local air quality, and provide electric vehicle charging infrastructure.	
14	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	Ongoing	FBC	Local Authority	NO	Not Funded	£10k - £50k	Implementation	N/A	a) To ensure compliance with the Defra timetable. (b) To maintain air quality reports on the FBC website	FBC submitted a Local NO ₂ Plan to Defra/DfT (Dec-18) to achieve compliance with the annual mean EU Limit Value for NO ₂ in the shortest possible time. Confirmation of funding was received Mar-18.	New measures included, barriers for implementation are listed above, particularly relevant is the short time frame for implementation.
15	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	Ongoing	FBC	Local Authority	NO	Not Funded	£10k - £50k	Implementation	Reduction of NO _x and PM emissions	Minutes of meetings	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.	Meetings are ongoing
16	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	Annual progress reports to Defra	FBC	Local Authority	NO	Not Funded	£10k - £50k	Implementation	Reduction of NO _x emissions	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	Progress is reported in ASRs, available on Fareham Borough Council's website.	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.

Measure No.	Measure	Category	Classification	Year Measure Introduced	Estimated / Actual Completion Year	Organisations Involved	Funding Source	Defra AQ Grant Funding	Funding Status	Estimated Cost of Measure	Measure Status	Reduction in Pollutant / Emission from Measure	Key Performance Indicator	Progress to Date	Comments / Barriers to Implementation
													required changes to the existing measures and the need for further actions		
17	To continue to place air quality reports on the FBC website	Public Information	Via the Internet	Ongoing	Ongoing	FBC	Local Authority	NO	Not Funded	£10k - £50k	Implementation	N/A	Annually (or as required) e-mail stakeholder bodies send a message each time there is a website report update	The 2020 ASR is listed on FBC website.	N/A
18	To investigate the most effective method of disseminating air quality information to the public and assess the feasibility of employing this method for FBC	Public Information	Other	Ongoing	Ongoing	FBC	Local Authority	NO	Not Funded	£10k - £50k	Implementation	N/A	Annual review of information dissemination options in line with UK best practice and discussions with neighbouring authorities	Seeking to raise awareness of local and national air quality matters: (i) Link to all three monitoring stations on FBC website. (ii) Advice to the public on reducing emissions and avoiding exposure on 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.	N/A

Measure No.	Measure	Category	Classification	Year Measure Introduced	Estimated / Actual Completion Year	Organisations Involved	Funding Source	Defra AQ Grant Funding	Funding Status	Estimated Cost of Measure	Measure Status	Reduction in Pollutant / Emission from Measure	Key Performance Indicator	Progress to Date	Comments / Barriers to Implementation
19	To promote awareness via the FBC website of other air quality information web site	Public Information	Via the Internet	Ongoing	Ongoing	FBC	Local Authority	NO	Not Funded	£10k - £50k	Implementation	N/A	Annual review of the Council website content in line with accepted UK best practice	Ongoing process of updating FBC website with the aim of providing an up to date, useful and informative public resource for air quality and to raise awareness of local and national air quality matters. FBC & GBC websites were updated to include several subsections on air quality topics, the aim being to act as an air quality hub with various links for more specific information.	N/A
20	Development of a Climate Change policy via a new Climate Change Officer Post and Accompanying Steering Group.	Policy Guidance and Development Control	Other policy	2019	Ongoing	FBC	FBC	NO	Not Funded	£10k - £50k	Implementation	Reduction of NO _x (and PM) emissions	Review of Climate Change Plan	Implementation on-going - The climate briefing has been produced and is going to be sent to committee. In order to provide a baseline upon which to measure improvements, the Council must first establish its current carbon footprint. This work will then inform the Carbon Reduction Action Plan	Lengthy Timescale - work in very earlier stages.

Notes:

The efficacy of the measures is indicated by the colour in the “Measure No.” column, whereby: green = most effective, blue = moderately effective, red = least effective.

Funding information is provided where available and accessible.

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.

Fareham and Gosport currently monitor PM₁₀ concentrations at the Tichborne Way automatic monitoring station, but PM_{2.5} concentrations are not currently monitored. Therefore, concentrations of PM_{2.5} have been estimated from PM₁₀ measurements in line with guidance specified in [LAQM.TG\(16\)](#). There are no nearby roadside monitoring stations part of the Automatic Rural and Urban Network (AURN) whereby both PM₁₀ and PM_{2.5} concentrations are measured. Therefore, in accordance with [LAQM.TG\(16\)](#) paragraphs 7.107 – 7.111, the annual mean PM₁₀ concentration measured at Tichborne Way has been multiplied by the nationally derived correction factor of 0.7 to estimate an annual average PM_{2.5} concentration of 9.6µg/m³ at this site. This estimated annual mean concentration is below to the recommended 2020 annual mean objective for PM_{2.5} (25µg/m³).

The current [Defra background maps](#) for both Fareham and Gosport Borough Councils (2018 reference year) show that all 2020 background concentrations of PM_{2.5} are far below the recommended 2020 annual mean AQS objective for PM_{2.5} of 25µg/m³. The highest concentration is predicted to be 11.6µg/m³ within the 1km x 1km grid square with the centroid grid reference of 460500, 101500. This is an area in Gosport Borough Council, to the north of Gosport and includes a section of the A32. It is important to note that these estimations do not take into consideration any impacts as a result of the COVID-19 pandemic.

The [Public Health Outcomes Framework](#) data tool compiled by Public Health England quantifies the mortality burden of PM_{2.5} within England on a county and local authority scale. The 2019 fraction of mortality attributable to PM_{2.5} pollution (indicator D01) across England is 5.1%. In contrast the fraction within both Fareham and Gosport is below the national average at 4.8%. The regional average for the South East of England is 5.2%.

Fareham and Gosport Environmental Health Partnership

The 2019 fraction of mortality has been used as opposed to the 2020 fraction as the data has not been made available at the time of writing.

Defra estimates in the [Clean Air Strategy 2019](#) 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.

Measures to improve air quality often have shared wins with other public health indicators, a good example being the encouragement of active travel and commuting leading to increased physical activity and increased wellbeing. Both 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 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.

[LAQM.TG\(16\)](#) Table A.1 Action toolbox presents a list of measures that can be implemented to help reduce concentrations of PM_{2.5}. Some of the actions carried out by Fareham and Gosport Borough Councils, shown in Table 2.2, included in both Fareham's AQAP and the Local NO₂ Plan, focus on promoting sustainable transport, whilst also reducing traffic volumes, improving traffic flow, switching to alternative modes of transport, and promoting the uptake of alternative fuels. Although not designed specifically for the reduction of PM_{2.5}, improvements in NO₂ concentrations will lead to a net reduction of PM_{2.5} concentrations from combustion-based sources where both pollutants arise, and therefore have a direct and proportional impact on PM_{2.5}.

Whilst neither Councils have designated any Smoke Control Areas, Council guidance with regards to domestic wood burning is available. Information on this can be found on both [Fareham](#) and [Gosport](#) Council websites. Both [Fareham](#) and [Gosport](#) Councils also provide guidance with regards to bonfires.

3 Air Quality Monitoring Data and Comparison with Air Quality Objectives and National Compliance

This section sets out the monitoring undertaken within 2020 by Fareham and Gosport Borough Councils and how it compares with the relevant air quality objectives. In addition, monitoring results are presented for a five-year period between 2016 and 2020 to allow monitoring trends to be identified and discussed.

3.1 Summary of Monitoring Undertaken

3.1.1 Automatic Monitoring Sites

Fareham and Gosport Borough Councils undertook automatic (continuous) monitoring at three sites during 2020. Table A.1 in Appendix A shows the details of the automatic monitoring sites. Table A.3 presents automatic monitoring results for the Councils, with automatic monitoring results also available through the [WeCare4Air](#) website.

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 (i.e. passive) monitoring of NO₂ at 46 sites during 2020, inclusive of four triplicate sites. Table A.2 in Appendix A presents the details of the non-automatic sites. One new monitoring location, WPS, was deployed in 2020.

Additional short-term monitoring was carried out in 2020 at 18 sites. Details of these are presented separately from the LAQM data in Appendix C and have not been used for LAQM reporting purposes due to only being in operation for a maximum of three months.

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

3.2 Individual Pollutants

The air quality monitoring results presented in this section are, where relevant, adjusted for bias, annualisation (where the annual mean data capture is below 75% and greater than 25%), and distance correction. Further details on adjustments are provided in Appendix C.

3.2.1 Nitrogen Dioxide (NO₂)

Table A.3 and Table A.4 in Appendix A compare the ratified and adjusted monitored NO₂ annual mean concentrations for the past five years with the air quality objective of 40µg/m³. Note that the concentration data presented 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 2020 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.

Table A.5 in Appendix A compares the ratified continuous monitored NO₂ hourly mean concentrations for the past five years with the air quality objective of 200µg/m³, not to be exceeded more than 18 times per year.

During 2020, only one monitoring location reported an annual mean NO₂ concentration exceeding the AQS objective of 40µg/m³. Monitoring location CM2 is located on the kerbside of Cams Hill, adjacent to the Delme Roundabout, and reported an annual mean concentration of 47.6µg/m³ in 2020. This monitoring location is not located at a site of relevant exposure. Following fall-off with distance correction calculations, there is a predicted annual mean NO₂ concentration of 30.7µg/m³ at the nearest relevant receptor. The next highest reported concentration is 38.3µg/m³ at monitoring location A27, a kerbside site by the Bath Lane Underpass. There are no relevant receptors located near to this site.

Across all the monitoring locations in both Fareham and Gosport, there is either a general decrease in the annual mean NO₂ concentration reported over the past five years, or it remains relatively stable and below the AQS objective. There is however a larger decrease observed from 2019 to 2020, whereby the average decrease 4.2µg/m³, approximately two-fold of the average decrease from 2018 to 2019 (2.0µg/m³). Although

this is partly attributable to the measures being implemented to improve air quality by both Fareham and Gosport Borough Councils, this is also likely a result of the impacts of the COVID-19 pandemic. The UK Government issued guidelines for people to stay local, work from home where possible, and enforced multiple lockdowns. As a result, traffic levels have been observed to have decreased across the UK. It has been estimated that NO₂ concentrations decreased by up to 30% in urbanised areas during the first lockdown. Further information on the impacts of COVID-19 can be found in Appendix F.

There have been five years running whereby annual mean NO₂ concentrations in both AQMAs have been reported to be below the AQS objective. Fareham Borough Council may therefore consider revoking these AQMAs following maintained compliance, regardless of 2020's monitoring data.

In regard to the 1-hour NO₂ AQS objective all three automatic monitoring locations have reported less than 18 hourly concentrations greater than 200µg/m³. Additionally, as diffusion tube location reported an annual mean concentration in excess of 60µg/m³, it is unlikely that there has been an exceedances of the 1-hour NO₂ AQS.

3.2.2 Particulate Matter (PM₁₀)

Table A.6 in Appendix A: Monitoring Results compares the ratified and adjusted monitored PM₁₀ annual mean concentrations for the past five years with the air quality objective of 40µg/m³.

Table A.7 in Appendix A compares the ratified continuous monitored PM₁₀ daily mean concentrations for the past five years with the air quality objective of 50µg/m³, not to be exceeded more than 35 times per year.

Only one automatic monitoring location monitors concentrations of PM₁₀ – Tichborne Way in Fareham. The annual mean PM₁₀ concentration reported in 2020 is 18.1µg/m³, well below the AQS objective of 40µg/m³. In addition to this, there have been no reported 24-hourly concentrations where a concentration of 50µg/m³ was observed.

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? Which 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	NO ₂ /PM ₁₀	NO	Chemiluminescence and TEOM	15	5	3
FAR1	Gosport Road	Roadside	457594	105280	NO ₂	YES	Chemiluminescence	3.5	1.5	2
FAR2	Portland Street	Roadside	457954	106027	NO ₂	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

Diffusion Tube ID	Site Name	Site Type	X OS Grid Ref (Easting)	Y OS Grid Ref (Northing)	Pollutants Monitored	In AQMA? Which AQMA?	Distance to Relevant Exposure (m) ⁽¹⁾	Distance to kerb of nearest road (m) ⁽²⁾	Tube Co-located with a Continuous Analyser?	Tube Height (m)
BL1	11 Bath Lane	Other	458376	106109	NO ₂	No	N/A	16.0	No	2.9
G1A	30 Old Gosport Road	Roadside	457732	105625	NO ₂	Y - Gosport Road AQMA	0.0	10.0	No	2.3
G2A	138 Gosport Road	Other	457627	105138	NO ₂	Y - Gosport Road AQMA	0.0	9.5	No	1.8
G3	202 Gosport Road	Roadside	457726	104869	NO ₂	No	0.0	9.0	No	2.0
G4	122 Gosport Road	Roadside	457598	105213	NO ₂	Y - Gosport Road AQMA	0.0	6.0	No	2.5
G6	171 Gosport Road	Roadside	457599	105410	NO ₂	Y - Gosport Road AQMA	0.0	6.0	No	2.3
G7	193 Gosport Road	Roadside	457583	105354	NO ₂	Y - Gosport Road AQMA	0.0	6.5	No	3.0
G8Z	156 Gosport Road	Roadside	457656	105049	NO ₂	No	0.0	4.0	No	1.9
G10	107 Gosport Road	Roadside	457675	105616	NO ₂	Y - Gosport Road AQMA	0.0	14.0	No	2.6
G11	2 Earls Road	Roadside	457668	105461	NO ₂	Y - Gosport Road AQMA	0.0	5.0	No	2.1
G12	Two Saints, 101 Gosport Road	Roadside	457684	105630	NO ₂	Y - Gosport Road AQMA	0.0	15.0	No	2.6
G14	Bottom of Beaconsfield Road	Other	457631	105494	NO ₂	Y - Gosport Road AQMA	5.0	6.9	No	2.5

Fareham and Gosport Environmental Health Partnership

Diffusion Tube ID	Site Name	Site Type	X OS Grid Ref (Easting)	Y OS Grid Ref (Northing)	Pollutants Monitored	In AQMA? Which AQMA?	Distance to Relevant Exposure (m) ⁽¹⁾	Distance to kerb of nearest road (m) ⁽²⁾	Tube Co-located with a Continuous Analyser?	Tube Height (m)
GR/RL	Corner of Gosport Rd and Redlands Lane	Roadside	457564	105300	NO ₂	Y - Gosport Road AQMA	11.0	1.5	No	2.1
E1, E2, E3	Co-located with Gosport Road Monitor	Roadside	457590	105281	NO ₂	Y - Gosport Road AQMA	3.5	1.5	Yes	1.9
RM1	Runnymede	Roadside	455745	107825	NO ₂	No	N/A	49.0	No	2.7
DC1	Maytree Drive Opposite Delme Court	Roadside	457182	106203	NO ₂	No	N/A	0.5	No	2.5
PS1, PS1A, PS1B	1 Sentinel Cottages	Roadside	457939	106012	NO ₂	Y - Portland Street AQMA	0.0	6.5	No	2.5
PS2	2 Sentinel Cottages	Roadside	457937	106021	NO ₂	Y - Portland Street AQMA	0.0	6.5	No	2.7
PS3	38 Portland Street	Roadside	457935	106033	NO ₂	Y - Portland Street AQMA	0.0	3.5	No	2.3
PS4, PS5, PS6	Co-located with Portland St Monitor	Roadside	457954	106027	NO ₂	No	5.0	1.8	Yes	1.2
HR2	17 Hartlands Road	Roadside	457822	106107	NO ₂	No	N/A	11.0	No	1.9
HR3A	7 Hartlands Road	Roadside	457787	106140	NO ₂	No	0.0	7.0	No	2.5
HR4	25 Hartlands Road	Roadside	457860	106077	NO ₂	No	0.0	6.5	No	1.9
AQ8A	Rosemary House/Botley Road Suburban	Suburban	451618	109015	NO ₂	No	0.0	8.0	No	2.1

Fareham and Gosport Environmental Health Partnership

Diffusion Tube ID	Site Name	Site Type	X OS Grid Ref (Easting)	Y OS Grid Ref (Northing)	Pollutants Monitored	In AQMA? Which AQMA?	Distance to Relevant Exposure (m) ⁽¹⁾	Distance to kerb of nearest road (m) ⁽²⁾	Tube Co-located with a Continuous Analyser?	Tube Height (m)
BR1	Bridge Road	Roadside	449694	109264	NO ₂	No	2.3	3.3	No	2.4
BR2	Bridge Road	Roadside	449664	109278	NO ₂	No	1.0	3.2	No	2.5
BR3	Bridge Road	Roadside	449500	109465	NO ₂	No	2.2	1.5	No	2.5
SL1	Swanwick Lane Top	Roadside	449574	109651	NO ₂	No	4.6	2.5	No	2.5
SL2	Swanwick Lane Bottom	Roadside	451272	109530	NO ₂	No	6.0	1.0	No	2.4
WW1	Western Way (Fareham town end)	Roadside	457845	106008	NO ₂	No	17.0	1.0	No	2.1
WW2	Western Way (Half way up Road)	Roadside	457443	106087	NO ₂	No	27.0	1.0	No	2.4
WW3	Corner of Avenue and Gudge HL	Roadside	456837	106220	NO ₂	No	4.2	2.0	No	2.1
CM1	Cams Hill, Near the Bridge	Roadside	458775	106228	NO ₂	No	20.0	0.7	No	2.2
CM2	Cams Mill Kerb side	Roadside	458775	106273	NO ₂	No	8.4	0.2	No	2.2
CM3	On Cams Hill, near Delme Arms	Roadside	458828	106243	NO ₂	No	7.0	1.0	No	2.3
A27	On sign post on the A27 by the Bath Lane Underpass	Roadside	458400	106075	NO ₂	No	N/A	0.1	No	1.4
WPS	Whitley Primary School	Kerbside	452360	109357	NO ₂	No	0.0	1.0	No	2.2

Fareham and Gosport Environmental Health Partnership

Diffusion Tube ID	Site Name	Site Type	X OS Grid Ref (Easting)	Y OS Grid Ref (Northing)	Pollutants Monitored	In AQMA? Which AQMA?	Distance to Relevant Exposure (m) ⁽¹⁾	Distance to kerb of nearest road (m) ⁽²⁾	Tube Co-located with a Continuous Analyser?	Tube Height (m)
G	Military Road/Brockhurst Road	Roadside	459572	101800	NO ₂	No	41.0	3.5	No	2.7
Q, I, R	Fareham Way/Tichborne Way	Roadside	458985	102785	NO ₂	No	16.0	6.0	Yes	2.7
J	Fareham Road/Lederle Lane	Roadside	458282	104110	NO ₂	No	46.0	3.0	No	2.7
V	Wych Lane/Fareham Road	Roadside	458064	104235	NO ₂	No	12.0	5.0	No	2.8
W	Bus Stop Wych Lane	Roadside	457977	104185	NO ₂	No	84.0	4.5	No	2.7
U	Daedalus	Roadside	456564	101572	NO ₂	No	15.0	3.0	No	2.8
S	Bury Cross 1	Roadside	460046	99618	NO ₂	No	2.3	3.3	No	2.5
T	Bury Cross 2	Roadside	460061	99604	NO ₂	No	2.3	3.3	No	2.5
P	Lees Lane/Forton Road Junction	Roadside	460631	100435	NO ₂	No	11.0	3.0	No	2.7

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 NO₂ Monitoring Results: Automatic Monitoring (µg/m³)

Site ID	X OS Grid Ref (Easting)	Y OS Grid Ref (Northing)	Site Type	Valid Data Capture for Monitoring Period (%) ⁽¹⁾	Valid Data Capture 2020 (%) ⁽²⁾	2016	2017	2018	2019	2020
GOS1	458987	102786	Roadside	89	89	32.8	26.6	31.9	20.4	18.1
FAR1	457594	105280	Roadside	99	99	25.9	29.0	26.9	28.3	25.6
FAR2	457954	106027	Roadside	98	98	36.6	34.4	31.8	29.6	27.8

Annualisation has been conducted where data capture is <75% and >25% in line with LAQM.TG16.

Reported concentrations are those at the location of the monitoring site (annualised, as required), i.e. prior to any fall-off with distance correction.

Notes:

The annual mean concentrations are presented as µg/m³.

Exceedances of the NO₂ annual mean objective of 40µg/m³ are shown in **bold**.

All means have been “annualised” as per LAQM.TG16 if valid data capture for the full calendar year is less than 75%. See Appendix C for details.

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

(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%).

Table A.4 – Annual Mean NO₂ Monitoring Results: Non-Automatic Monitoring (µg/m³)

Diffusion Tube ID	X OS Grid Ref (Easting)	Y OS Grid Ref (Northing)	Site Type	Valid Data Capture for Monitoring Period (%) ⁽¹⁾	Valid Data Capture 2020 (%) ⁽²⁾	2016	2017	2018	2019	2020
BL1	458376	106109	Other	100.0	100.0	35.7	31.4	31.3	33.0	27.6
G1A	457732	105625	Roadside	73.4	73.4	30.1	29.4	28.5	27.0	21.7
G2A	457627	105138	Other	100.0	100.0	27.9	27.7	25.8	26.0	22.3
G3	457726	104869	Roadside	92.0	92.0	28.9	24.4	23.7	23.1	18.7
G4	457598	105213	Roadside	92.0	92.0	25.5	24.8	25.2	24.0	19.9
G6	457599	105410	Roadside	82.4	82.4	30.2	26.6	31.3	27.3	21.4
G7	457583	105354	Roadside	82.4	82.4	36.0	34.5	37.4	36.5	30.4
G8Z	457656	105049	Roadside	100.0	100.0	27.4	27.2	25.8	25.6	21.8
G10	457675	105616	Roadside	100.0	100.0	35.5	33.4	33.2	31.6	26.3
G11	457668	105461	Roadside	100.0	100.0	25.2	23.5	23.1	22.7	20.2
G12	457684	105630	Roadside	92.6	92.6	32.8	34.0	30.8	30.5	27.0
G14	457631	105494	Other	92.6	92.6	30.4	26.3	26.4	26.8	23.1
GR/RL	457564	105300	Roadside	64.8	64.8	22.5	21.4	23.2	21.2	18.4

Fareham and Gosport Environmental Health Partnership

Diffusion Tube ID	X OS Grid Ref (Easting)	Y OS Grid Ref (Northing)	Site Type	Valid Data Capture for Monitoring Period (%) ⁽¹⁾	Valid Data Capture 2020 (%) ⁽²⁾	2016	2017	2018	2019	2020
E1, E2, E3	457590	105281	Roadside	82.4	82.4	31.2	32.4	29.8	28.2	22.8
RM1	455745	107825	Roadside	84.3	84.3	25.7	26.3	24.8	24.0	16.2
DC1	457182	106203	Roadside	100.0	100.0	26.3	22.5	23.9	21.9	20.1
PS1, PS1A, PS1B	457939	106012	Roadside	100.0	100.0	31.9	30.1	29.6	27.8	23.5
PS2	457937	106021	Roadside	92.3	92.3	35.5	33.3	33.8	28.2	21.9
PS3	457935	106033	Roadside	90.9	90.9	33.6	33.9	32.3	33.8	27.7
PS4, PS5, PS6	457954	106027	Roadside	100.0	100.0	36.6	34.4	34.8	33.1	27.2
HR2	457822	106107	Roadside	92.6	92.6	27.1	25.0	24.5	23.7	19.9
HR3A	457787	106140	Roadside	92.3	92.3	23.6	22.8	23.3	21.1	18.1
HR4	457860	106077	Roadside	83.0	83.0	29.5	24.8	25.0	22.4	19.6
AQ8A	451618	109015	Suburban	100.0	100.0	24.9	24.3	22.3	20.3	15.7
BR1	449694	109264	Roadside	100.0	100.0	-	28.2	31.0	29.0	25.1
BR2	449664	109278	Roadside	100.0	100.0	-	25.0	26.8	25.8	21.9
BR3	449500	109465	Roadside	58.0	58.0	-	35.7	31.5	28.6	22.6

Fareham and Gosport Environmental Health Partnership

Diffusion Tube ID	X OS Grid Ref (Easting)	Y OS Grid Ref (Northing)	Site Type	Valid Data Capture for Monitoring Period (%) ⁽¹⁾	Valid Data Capture 2020 (%) ⁽²⁾	2016	2017	2018	2019	2020
SL1	449574	109651	Roadside	100.0	100.0	-	28.0	24.4	24.1	19.1
SL2	451272	109530	Roadside	100.0	100.0	-	24.3	24.1	22.5	16.5
WW1	457845	106008	Roadside	100.0	100.0	-	23.9	26.7	24.9	21.2
WW2	457443	106087	Roadside	92.3	92.3	-	30.3	28.8	28.3	28.2
WW3	456837	106220	Roadside	100.0	100.0	-	40.4	33.4	36.1	31.0
CM1	458775	106228	Roadside	84.9	84.9	-	29.8	30.0	27.6	22.6
CM2	458775	106273	Roadside	100.0	100.0	-	68.0	57.7	53.1	47.6
CM3	458828	106243	Roadside	84.9	84.9	-	27.4	27.3	24.7	22.3
A27	458400	106075	Roadside	100.0	100.0	-	-	-	44.4	38.3
WPS	452360	109357	Kerbside	82.4	82.4	-	-	-	-	16.7
G	459572	101800	Roadside	100.0	100.0	33.7	32.8	31.4	30.2	28.1
Q, I, R	458985	102785	Roadside	100.0	100.0	25.9	23.9	25.7	23.9	19.5
J	458282	104110	Roadside	92.0	92.0	31.2	32.6	30.7	30.5	24.4
V	458064	104235	Roadside	92.6	92.6	28.3	24.9	27.0	24.6	19.9

Diffusion Tube ID	X OS Grid Ref (Easting)	Y OS Grid Ref (Northing)	Site Type	Valid Data Capture for Monitoring Period (%) ⁽¹⁾	Valid Data Capture 2020 (%) ⁽²⁾	2016	2017	2018	2019	2020
W	457977	104185	Roadside	74.7	74.7	18.8	16.5	18.1	17.0	18.1
U	456564	101572	Roadside	100.0	100.0	20.7	19.4	16.8	16.1	13.2
S	460046	99618	Roadside	100.0	100.0	36.5	38.1	38.3	32.0	28.7
T	460061	99604	Roadside	100.0	100.0	36.4	33.8	36.1	33.8	28.5
P	460631	100435	Roadside	92.0	92.0	33.8	31.6	31.4	30.8	28.0

Annualisation has been conducted where data capture is <75% and >25% in line with LAQM.TG16.

Diffusion tube data has been bias adjusted.

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 correction.

Notes:

The annual mean concentrations are presented as µg/m³.

Exceedances of the NO₂ annual mean objective of 40µg/m³ are shown in **bold**.

NO₂ annual means exceeding 60µg/m³, indicating a potential exceedance of the NO₂ 1-hour mean objective are shown in **bold and underlined**.

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

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

(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%).

Figure A.1 – Trends in Annual Mean NO₂ Concentrations in the Gosport Road AQMA

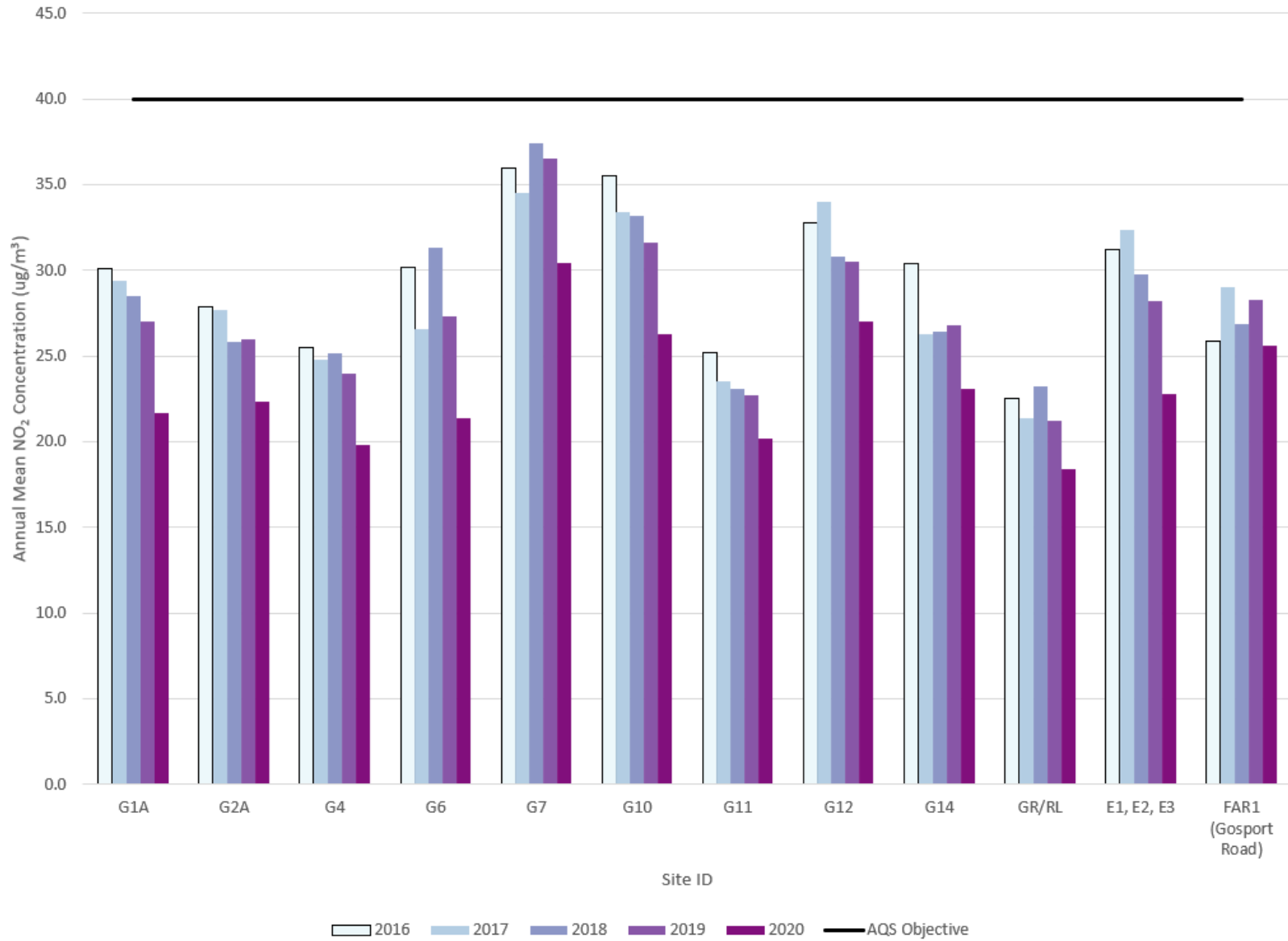


Figure A.2 – Trends in Annual Mean NO₂ Concentrations in the Portland Street AQMA

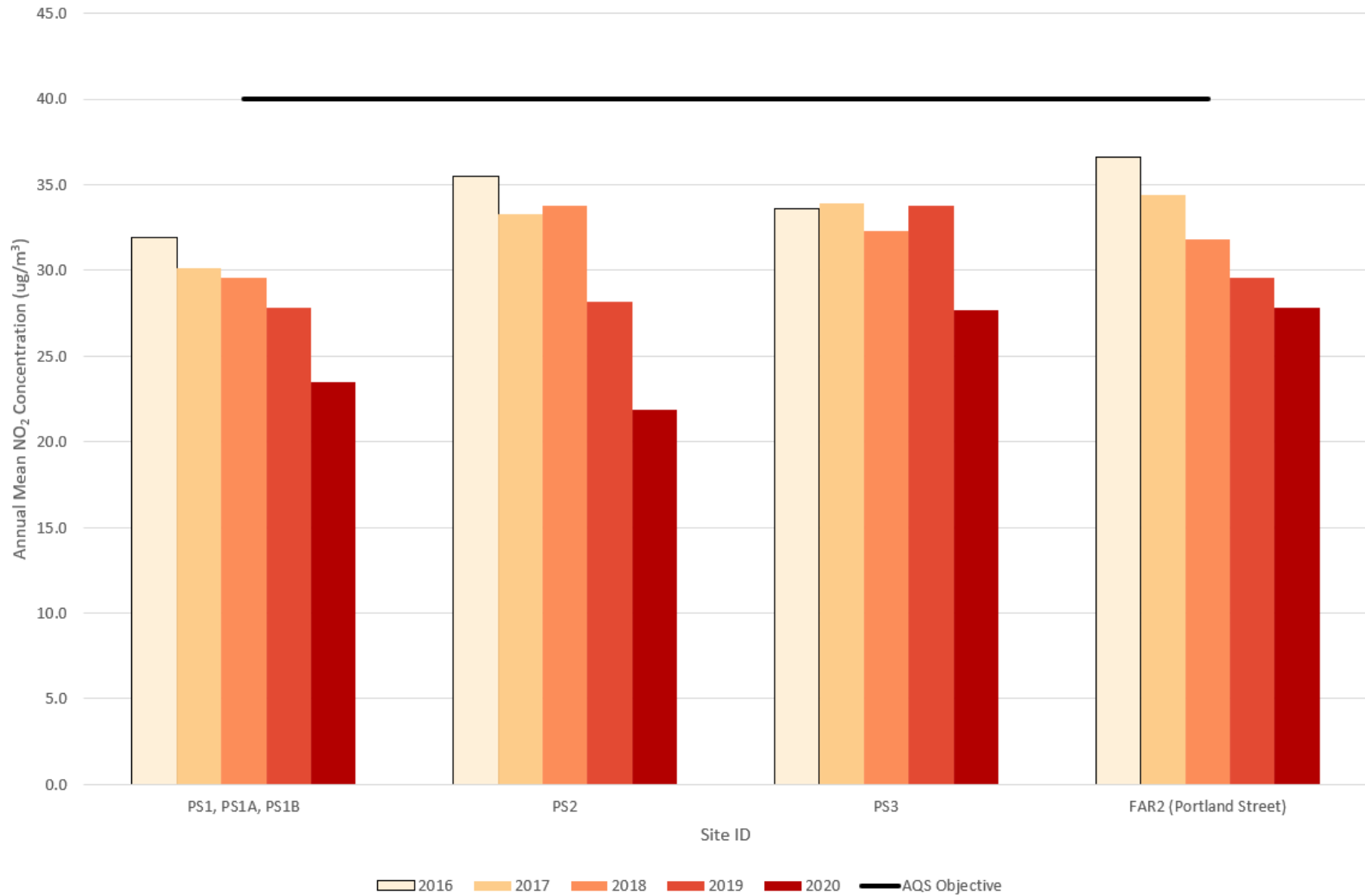


Figure A.3 – Trends in Annual Mean NO₂ Concentrations In Fareham Outside AQMAs

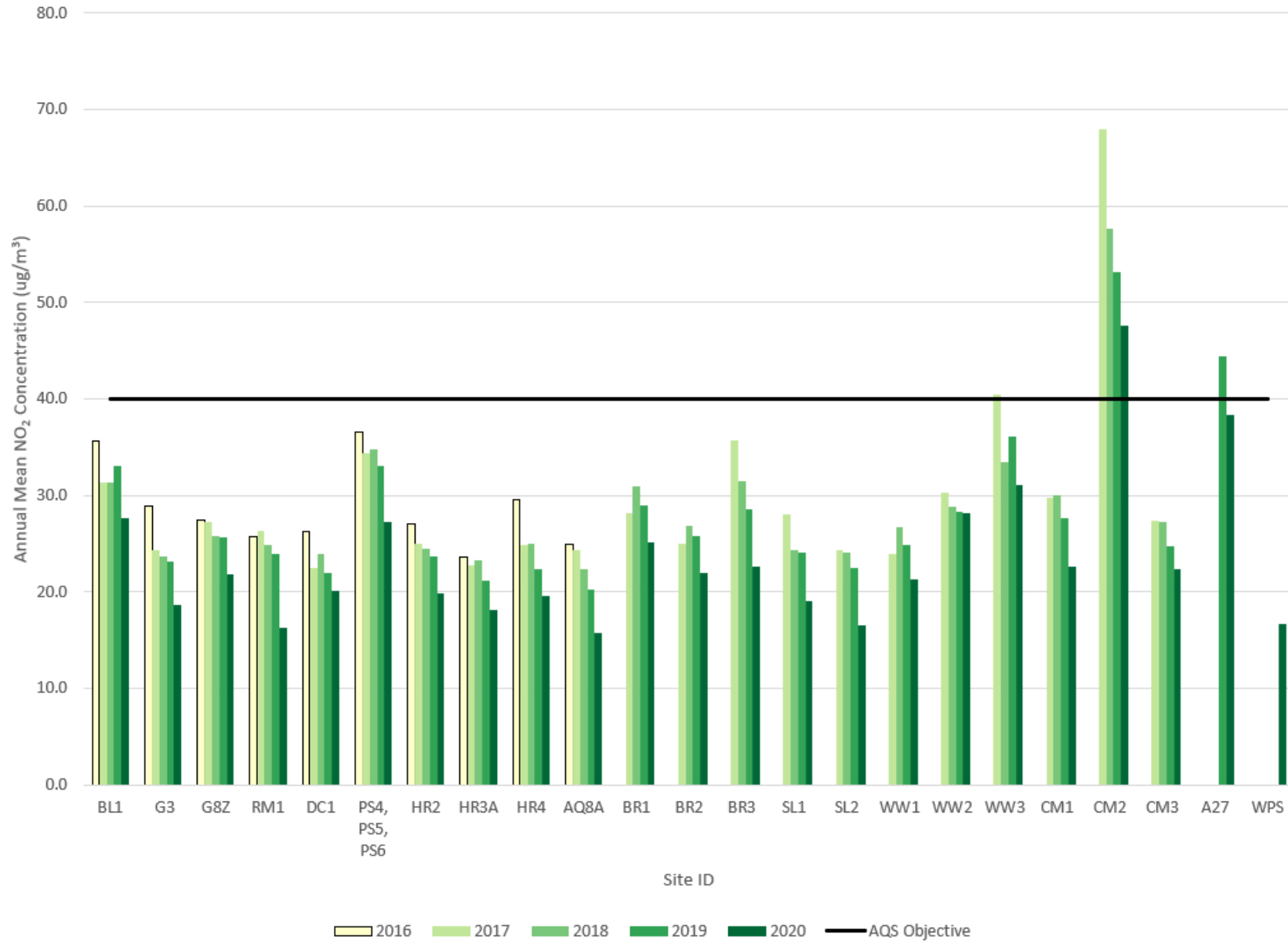


Figure A.4 – Trends in Annual Mean NO₂ Concentrations In Gosport Outside AQMAs

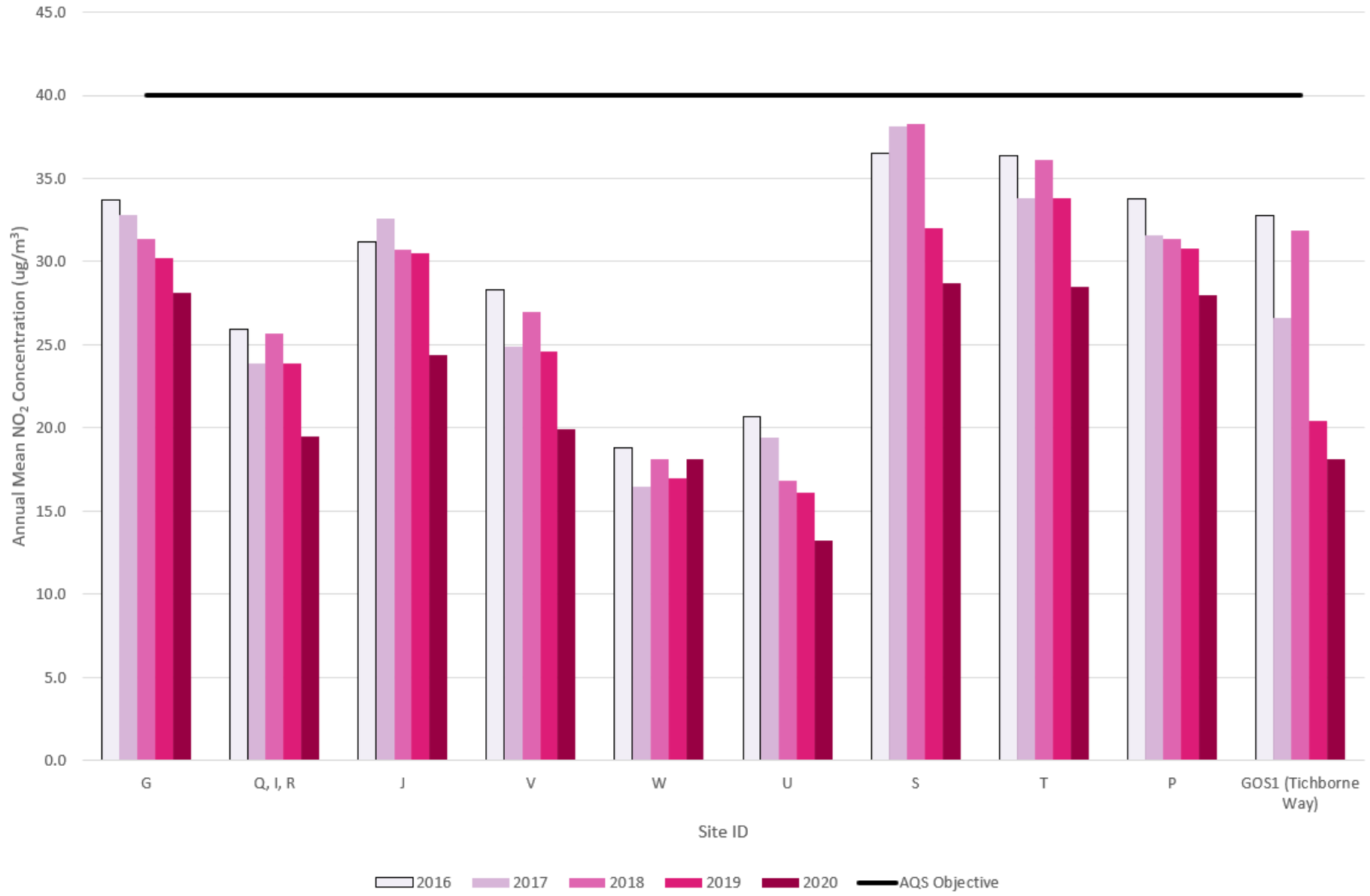


Table A.5 – 1-Hour Mean NO₂ Monitoring Results, Number of 1-Hour Means > 200µg/m³

Site ID	X OS Grid Ref (Easting)	Y OS Grid Ref (Northing)	Site Type	Valid Data Capture for Monitoring Period (%) ⁽¹⁾	Valid Data Capture 2020 (%) ⁽²⁾	2016	2017	2018	2019	2020
GOS1	458987	102786	Roadside	89	89	0	0	0	0	0
FAR1	457594	105280	Roadside	99	99	0	0	0	0	0
FAR2	457954	106027	Roadside	98	98	2	5	1	0	2

Notes:

Results are presented as the number of 1-hour periods where concentrations greater than 200µg/m³ have been recorded.

Exceedances of the NO₂ 1-hour mean objective (200µg/m³ not to be exceeded more than 18 times/year) are shown in **bold**.

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

(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%).

Table A.6 – Annual Mean PM₁₀ Monitoring Results (µg/m³)

Site ID	X OS Grid Ref (Easting)	Y OS Grid Ref (Northing)	Site Type	Valid Data Capture for Monitoring Period (%) ⁽¹⁾	Valid Data Capture 2020 (%) ⁽²⁾	2016	2017	2018	2019	2020
GOS1	458987	102786	Roadside	86	86	19.1	17.5	19.1	17.4	13.8

Annualisation has been conducted where data capture is <75% and >25% in line with LAQM.TG16.

Notes:

The annual mean concentrations are presented as µg/m³.

Exceedances of the PM₁₀ annual mean objective of 40µg/m³ are shown in **bold**.

All means have been “annualised” as per LAQM.TG16 if valid data capture for the full calendar year is less than 75%. See Appendix C for details.

(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%).

Figure A.5 – Trends in Annual Mean PM₁₀ Concentrations

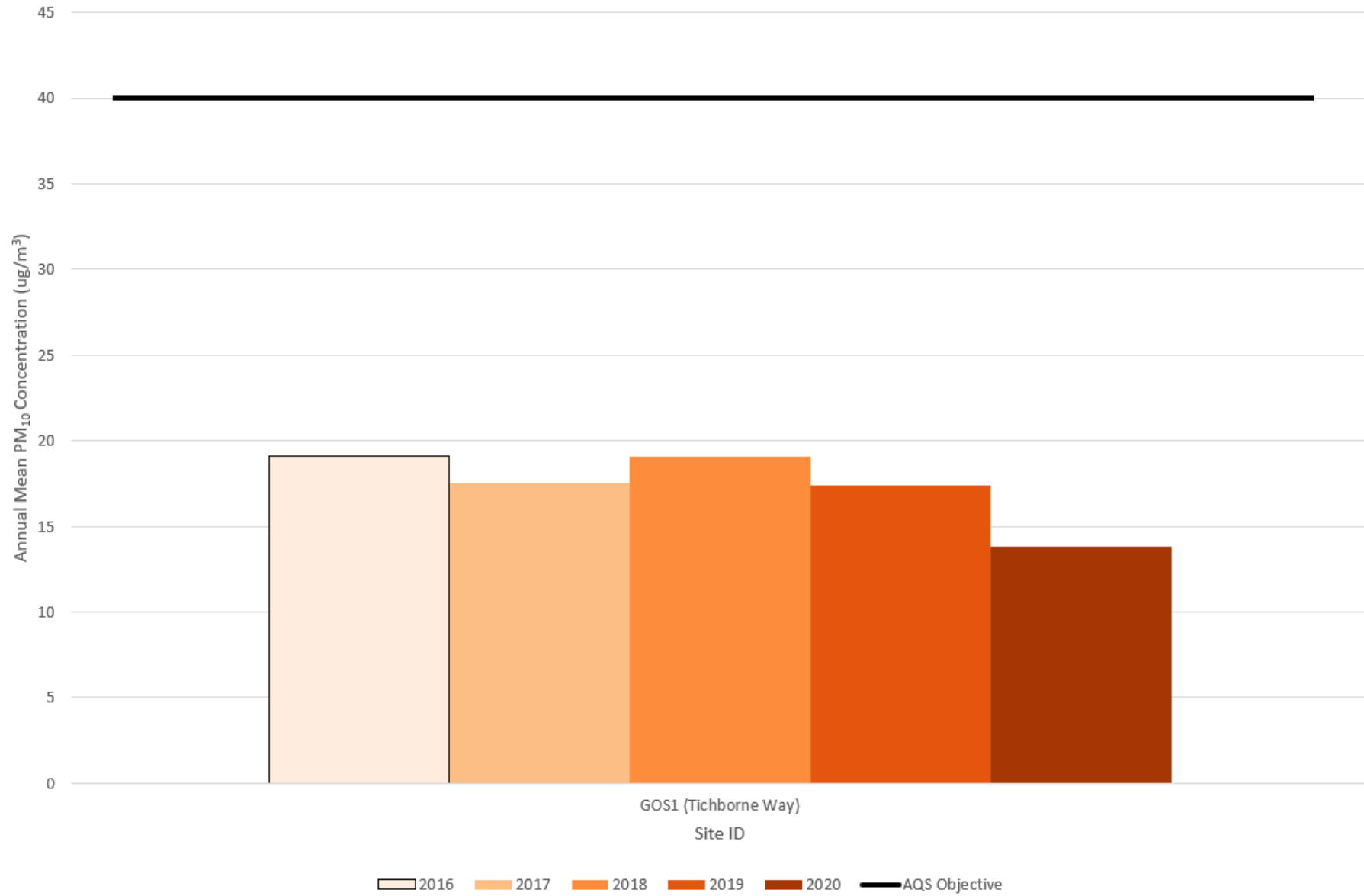


Table A.7 – 24-Hour Mean PM₁₀ Monitoring Results, Number of PM₁₀ 24-Hour Means > 50µg/m³

Site ID	X OS Grid Ref (Easting)	Y OS Grid Ref (Northing)	Site Type	Valid Data Capture for Monitoring Period (%) ⁽¹⁾	Valid Data Capture 2020 (%) ⁽²⁾	2016	2017	2018	2019	2020
GOS1	458987	102786	Roadside	86	86	1	1	0	2	0

Notes:

Results are presented as the number of 24-hour periods where daily mean concentrations greater than 50µg/m³ have been recorded.

Exceedances of the PM₁₀ 24-hour mean objective (50µg/m³ not to be exceeded more than 35 times/year) are shown in **bold**.

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

(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%).

Appendix B: Full Monthly Diffusion Tube Results for 2020

Table B.1 – NO₂ 2020 Diffusion Tube Results (µg/m³)

DT ID	X OS Grid Ref (Easting)	Y OS Grid Ref (Easting)	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual Mean: Raw Data	Annual Mean: Annualised and Bias Adjusted (0.91)	Annual Mean: Distance Corrected to Nearest Exposure	Comment
BL1	458376	106109	42.9	40.7	33.2	27.3	25.2	23.9	16.0	27.6	27.5	31.6	39.5	28.3	30.3	27.6	-	
G1A	457732	105625	33.0	24.0	25.4	20.6	21.8	19.1	19.0	24.5	26.6				23.8	21.7	-	
G2A	457627	105138	33.4	27.9	23.6	20.2	19.5	17.6	18.1	21.4	26.6	27.0	31.4	27.2	24.5	22.3	-	
G3	457726	104869	30.4	20.5	20.2	16.6	17.2	14.4	15.4	18.0	22.2	22.7		27.6	20.5	18.7	-	
G4	457598	105213	30.0	22.5	21.0	16.7		15.4	16.2	18.6	22.3	22.3	29.2	25.2	21.8	19.9	-	
G6	457599	105410	32.6	22.5	24.8	20.9	22.1	22.4	16.4			24.2	24.4	24.3	23.5	21.4	-	
G7	457583	105354	43.6	34.7	31.9	26.9	28.0	27.5	28.5			36.2	41.4	35.2	33.4	30.4	-	
G8Z	457656	105049	31.9	24.0	20.5	17.9	18.3	17.0	19.6	22.3	28.2	26.2	33.1	27.7	23.9	21.8	-	
G10	457675	105616	39.7	31.7	28.8	12.5	26.0	24.0	21.7	30.7	35.1	31.2	38.5	25.9	28.8	26.3	-	
G11	457668	105461	29.3	24.4	22.3	17.9	18.4	15.9	17.8	19.3	23.4	24.6	28.1	24.6	22.2	20.2	-	
G12	457684	105630	37.7	26.3	27.7	22.1	23.0	22.8	20.4	28.6		52.5	36.9	28.3	29.7	27.0	-	
G14	457631	105494	29.5	18.8	24.1	26.0	23.0	20.2		25.9	23.8	27.2	32.6	27.5	25.3	23.1	-	
GR/R L	457564	105300	26.2	18.5	19.7			14.7	12.4			19.3	27.9	22.2	20.1	18.4	-	
E1	457590	105281	38.0	23.6	25.3	19.8	22.0	19.5	23.6	25.5	29.1				-	-	-	Triplicate Site with E1, E2 and E3 - Annual data provided for E3 only
E2	457590	105281	34.7	23.1	23.4	19.1	21.2	18.8	21.7	24.9	29.7			29.7	-	-	-	Triplicate Site with E1, E2 and E3 - Annual data provided for E3 only
E3	457590	105281	33.8	24.4	23.9	17.5	20.5	19.3	21.3	27.1	29.1				25.0	22.8	-	Triplicate Site with E1, E2 and E3 - Annual data provided for E3 only
RM1	455745	107825	25.3		16.9	16.8		11.9	12.6	16.8	19.0	18.9	24.9	15.0	17.8	16.2	-	
DC1	457182	106203	32.3	25.0	19.2	17.6	16.7	15.2	16.2	20.6	24.3	24.2	29.1	24.8	22.1	20.1	-	

DT ID	X OS Grid Ref (Easting)	Y OS Grid Ref (Easting)	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual Mean: Raw Data	Annual Mean: Annualised and Bias Adjusted (0.91)	Annual Mean: Distance Corrected to Nearest Exposure	Comment
PS1	457939	106012	33.2	23.2	24.1	24.8	22.5	21.2	17.2	29.6	25.9	26.4	34.6	25.7	-	-	-	Triplicate Site with PS1, PS1A and PS1B - Annual data provided for PS1B only
PS1A	457939	106012	34.9	25.5	23.2	25.6	22.4	21.8	16.4	27.0	27.2	26.9	32.9	27.1	-	-	-	Triplicate Site with PS1, PS1A and PS1B - Annual data provided for PS1B only
PS1B	457939	106012	32.0	24.7	23.7	23.1	24.1	21.4	17.5	27.6	27.8	27.1	32.6		25.8	23.5	-	Triplicate Site with PS1, PS1A and PS1B - Annual data provided for PS1B only
PS2	457937	106021		17.8	23.8	22.9	21.8	20.4	17.4	26.3	26.3	27.3	32.9	27.1	24.0	21.9	-	
PS3	457935	106033	37.0	51.9	27.2	23.7	23.0	24.0	21.0	29.7	28.8	30.6	37.0		30.3	27.7	-	
PS4	457954	106027	40.8	30.7	28.1	25.5	25.4	24.5	18.4	31.0	30.2	33.3	38.4	32.3	-	-	-	Triplicate Site with PS4, PS5 and PS6 - Annual data provided for PS6 only
PS5	457954	106027	40.5	30.9	28.9	28.0	25.2	25.4	17.3	32.6	30.5	29.1	40.6	25.6	-	-	-	Triplicate Site with PS4, PS5 and PS6 - Annual data provided for PS6 only
PS6	457954	106027	40.7	28.6	27.1	27.4	24.7	25.5	18.8	32.6	31.4	31.1	39.5	34.0	29.8	27.2	-	Triplicate Site with PS4, PS5 and PS6 - Annual data provided for PS6 only
HR2	457822	106107	27.3	22.7	21.1	17.7	17.0	16.0	13.2	20.6		31.5	29.0	23.7	21.8	19.9	-	
HR3A	457787	106140	25.2	18.0	20.0	19.4	15.4		13.7	18.5	19.0	18.0	28.5	22.8	19.9	18.1	-	
HR4	457860	106077	29.6	23.1	22.5		17.2	16.2		18.0	19.2	20.0	25.5	24.2	21.5	19.6	-	
AQ8A	451618	109015	25.3	19.3	15.9	12.7	12.8	13.3	13.5	16.8	16.8	19.2	23.7	17.9	17.3	15.7	-	
BR1	449694	109264	33.9	26.4	24.5	21.0	23.1	22.8	23.9	32.0	30.9	28.3	33.9	29.6	27.5	25.1	-	
BR2	449664	109278	29.5	19.1	21.5	18.2	20.2	20.7	20.0	27.5	26.9	25.7	31.1	28.0	24.0	21.9	-	
BR3	449500	109465			22.5	20.6	26.6	20.7			30.2	26.8	31.3		25.5	22.6	-	
SL1	449574	109651	28.1	21.8	20.2	15.3	16.7	16.0	16.9	21.1	23.5	20.1	28.0	23.4	20.9	19.1	-	
SL2	451272	109530	21.0	18.0	18.7	15.6	15.6	15.1	14.4	17.9	18.7	20.0	23.4	18.9	18.1	16.5	-	
WW1	457845	106008	34.7	25.7	23.9	19.2	17.7	18.0	16.0	22.1	23.5	24.1	28.9	25.9	23.3	21.2	-	
WW2	457443	106087	75.4		23.1	21.1	24.1	21.1	21.7	25.8	32.3	31.8	36.9	26.6	30.9	28.2	-	
WW3	456837	106220	43.9	32.8	31.6	23.7	28.8	25.7	25.9	35.5	41.9	35.2	37.7	45.7	34.0	31.0	-	
CM1	458775	106228	33.3	26.2	19.3	20.6	22.6		17.3	24.4		25.5	31.4	27.8	24.8	22.6	-	

DT ID	X OS Grid Ref (Easting)	Y OS Grid Ref (Easting)	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual Mean: Raw Data	Annual Mean: Annualised and Bias Adjusted (0.91)	Annual Mean: Distance Corrected to Nearest Exposure	Comment
CM2	458775	106273	66.4	55.1	49.5	37.0	44.4	42.2	46.9	56.6	69.1	51.6	57.2	49.9	52.2	47.6	30.7	
CM3	458828	106243	32.2	30.4	22.5	20.1	21.1		17.3	23.2		27.6	26.4	24.0	24.5	22.3	-	
A27	458400	106075	52.6	44.7	36.5	28.4	36.9	30.2	38.6	46.4	58.8	46.3	45.9	39.1	42.0	38.3	-	
WPS	452360	109357	27.0	19.4	18.0	13.9	14.2	12.5	11.6			19.1	24.5	22.6	18.3	16.7	-	
G	459572	101800	43.8	29.0	26.0	23.8	28.0	24.5	25.8	31.7	34.5	34.1	39.2	29.6	30.8	28.1	-	
Q	458985	102785	30.1	12.8	19.4	23.9	22.3	17.9	13.3	25.3	22.2	20.7	28.8	22.4	-	-	-	Triplicate Site with Q, I and R - Annual data provided for R only
I	458985	102785	30.8	13.1	19.5	22.1	23.7	19.9	12.5	24.4	22.0	20.9	27.7	22.4	-	-	-	Triplicate Site with Q, I and R - Annual data provided for R only
R	458985	102785	30.4	12.8	16.3	23.4	23.5	20.3	13.1	24.2	20.5	21.0	23.1	22.8	21.4	19.5	-	Triplicate Site with Q, I and R - Annual data provided for R only
J	458282	104110	37.6	29.4	25.8	20.2	24.1	22.8	21.3	28.7	29.8	27.5		26.6	26.7	24.4	-	
V	458064	104235	29.3	20.1	21.1	20.1	21.3	18.4	15.6	13.3		23.9	31.6	25.4	21.8	19.9	-	
W	457977	104185	38.0	13.6	19.8	18.8			9.6	23.4	15.4		23.1	17.1	19.8	18.1	-	
U	456564	101572	18.8	13.1	14.0	0.5	30.1	11.8	9.1	12.3	15.6	12.9	21.7	14.1	14.5	13.2	-	
S	460046	99618	36.8	31.7	30.9	28.4	28.7	26.5	24.3	31.8	34.6	32.9	40.5	30.7	31.5	28.7	-	
T	460061	99604	39.3	30.1	29.2	26.0	28.1	25.6	26.0	33.0	36.4	32.5	38.1	30.3	31.2	28.5	-	
P	460631	100435	38.0	24.7	25.8	29.5	28.8	23.8	18.6	31.3	31.4	27.3		58.9	30.7	28.0	-	

All erroneous data has been removed from the NO₂ diffusion tube dataset presented in Table B.1.

Annualisation has been conducted where data capture is <75% and >25% in line with LAQM.TG16.

Local bias adjustment factor used.

National bias adjustment factor used.

Where applicable, data has been distance corrected for relevant exposure in the final column.

Fareham and Gosport Borough Councils confirm that all 2020 diffusion tube data has been uploaded to the Diffusion Tube Data Entry System.

Notes:

Exceedances of the NO₂ annual mean objective of 40µg/m³ are shown in **bold**.

NO₂ annual means exceeding 60µg/m³, indicating a potential exceedance of the NO₂ 1-hour mean objective are shown in **bold and underlined**.

Fareham and Gosport Environmental Health Partnership

See Appendix C for details on bias adjustment and annualisation.

See Appendix C for details on the short-term monitoring studies.

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

New or Changed Sources Identified Within Fareham and Gosport During 2020

Fareham and Gosport Borough Councils have not identified any new significant sources relating to air quality within the reporting year of 2020. It should however be noted that as a result of the COVID-19 Pandemic, there has been a slight increase in the number of cremations at Portchester Crematorium, however this is only slightly higher than the approximate number in 2018. Table C.1 below details the total number of cremations of the past three years. This is expected to be temporary until the excess deaths as a result of the pandemic come under control.

Table C.1 – Total Number of Cremations at Portchester Crematorium

Year	Total Number of Cremations
2020	3478
2019	3179
2018	~3300

When comparing month to month levels, there has however been a more notable increase. In April 2019, where was a total of 275 cremations, this increased to 460 cremations in April 2020 during the first wave of the pandemic.

Additional Air Quality Works Undertaken by Fareham and Gosport During 2020

Multiple short-term studies have been undertaken by Fareham and Gosport during 2020. These are largely projects that focus on monitoring at schools in conjunction with Hampshire County Council, but also some localised monitoring studies to understand air quality conditions in specific areas. These are all in operation for a maximum of three months. Some monitoring information is not available due to the diffusion tubes being

lost/contaminated, or due to interruptions in the monitoring as a result of COVID-19. The sites conducted as part of the school projects are as follows:

- FC1, FC2, FC3 – Fareham College
- SJ1, SJ2, SJ3 – Saint John the Baptist Church of England Primary School
- HWW1, HWW2, HWW3 – Hook with Warsash School
- RJS1, RJS2, RJS3 – Rowner Junior School
- BPS1, BPS2, BPS3 – Brune Park School

Details of these, including the monitoring results, are presented in Table C.2 and Table C.3. Annual mean concentrations are not presented for sites where annualisation has not been able to be carried out (i.e. less than 25% data capture), in line with LAQM.TG(16).

Table C.2 – Details of Short Study Non-Automatic Monitoring Sites

Diffusion Tube ID	Site Name	Site Type	X OS Grid Ref (Easting)	Y OS Grid Ref (Northing)	Pollutants Monitored	In AQMA? Which AQMA?	Distance to Relevant Exposure (m) ⁽¹⁾	Distance to kerb of nearest road (m) ⁽²⁾	Tube Co-located with a Continuous Analyser?	Tube Height (m)
FC1	Lamppost by smoking area	Urban Background	456542	106013	NO2	No	0.0	136.0	No	2.9
FC2	On tree behind tennis court	Urban Background	456587	106021	NO2	No	0.0	130.0	No	2.3
FC3	On Fence by Road, traffic lights	Roadside	456378	106117	NO2	No	0.0	2.3	No	1.8
SJ1	On Lamppost on roundabout corner	Roadside	452300	106815	NO2	No	0.0	2.5	No	2.0
SJ2	On fence, in other corner on play ground, by road	Roadside	452284	106852	NO2	No	0.0	1.9	No	2.5
SJ3	On tree at bottom of field	Urban Background	452165	106805	NO2	No	0.0	26.0	No	2.3
HWW1	On sign post on school road, near lollipop lady	Kerbside	449764	105897	NO2	No	0.0	0.0	No	3.0
HWW2	On tree in pond area	Roadside	449645	105876	NO2	No	0.0	53.0	No	1.9
HWW3	On tree near playground in "friendship area"	Roadside	449702	105836	NO2	No	0.0	70.0	No	2.6
TK	The Keep - Portchester	Urban Background	462050	105409	NO2	No	0.0	7.0	No	2.1
HP	40 Hill Park Road Fareham PO15 6HT	Roadside	455835	107536	NO2	No	1.0	3.0	No	2.6

Fareham and Gosport Environmental Health Partnership

Diffusion Tube ID	Site Name	Site Type	X OS Grid Ref (Easting)	Y OS Grid Ref (Northing)	Pollutants Monitored	In AQMA? Which AQMA?	Distance to Relevant Exposure (m) ⁽¹⁾	Distance to kerb of nearest road (m) ⁽²⁾	Tube Co-located with a Continuous Analyser?	Tube Height (m)
HP1	On tree in garden of no Heron Park mobile home site	Roadside	458723	99024	NO2	No	0.0	1.0	No	2.5
RJS1	On tree in bush, in centre of school	Urban Background	458753	102224	NO2	No	0.0	94.0	No	2.1
RJS2	On Lamppost on street by front of school	Roadside	458846	102256	NO2	No	0.0	4.0	No	1.9
RJS3	On tree to rear of playground	Urban Background	458690	102249	NO2	No	0.0	22.0	No	2.7
BPS1	On tree, at edge of School Field near Brockhurts round about	Urban Background	459538	101751	NO2	No	0.0	11	No	1.7
BPS2	On fence in wooded area, near side entrance by eclipse route	Urban Background	459388	101512	NO2	No	0.0	5.0	No	2.0
BPS3	On front fence by main road, and path	Roadside	459506	101357	NO2	No	0.0	1.3	No	1.4

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 C.3 – Short-term Study NO₂ 2020 Diffusion Tube Results (µg/m³)

DT ID	X OS Grid Ref (Easting)	Y OS Grid Ref (Easting)	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual Mean: Raw Data	Annual Mean: Annualised and Bias Adjusted (0.91)	Annual Mean: Distance Corrected to Nearest Exposure	Comment
FC1	456542	106013		23.1	9.4										-	-	-	
FC2	456587	106021		13.0	8.1										-	-	-	
FC3	456378	106117		11.0	15.2										-	-	-	
SJ1	452300	106815			9.6										-	-	-	
SJ2	452284	106852													-	-	-	
SJ3	452165	106805			6.2										-	-	-	
HWW 1	449764	105897													-	-	-	
HWW 2	449645	105876													-	-	-	
HWW 3	449702	105836													-	-	-	
TK	462050	105409	15.6	11.5											-	-	-	
HP	455835	107536											20.6	16.0	-	-	-	
HP1	458723	99024	21.4	8.5								13.9		14.6	14.0	-	-	
RJS1	458753	102224	15.1	9.6											-	-	-	
RJS2	458846	102256	14.9	10.7											-	-	-	
RJS3	458690	102249	16.1	10.9											-	-	-	
BPS1	459538	101751	29.1												-	-	-	
BPS2	459388	101512	19.8												-	-	-	
BPS3	459506	101357													-	-	-	

Annualisation has been conducted where data capture is <75% and >25% in line with LAQM.TG16.

Local bias adjustment factor used.

National bias adjustment factor used.

Where applicable, data has been distance corrected for relevant exposure in the final column.

Notes:

Exceedances of the NO₂ annual mean objective of 40µg/m³ are shown in **bold**.

NO₂ annual means exceeding 60µg/m³, indicating a potential exceedance of the NO₂ 1-hour mean objective are shown in **bold and underlined**.

See Appendix C for details on bias adjustment and annualisation.

QA/QC of Diffusion Tube Monitoring

Fareham and Gosport Borough Councils' diffusion tubes in 2020 were supplied and analysed by Gradko International Ltd., using the 20% Triethanolamine (TEA) in water preparation method. Gradko's laboratory is UKAS accredited, participating in the [AIR-PT Scheme](#) for NO₂ tube analysis and the Annual Field Inter-Comparison Exercise. These provide strict performance criteria for participating laboratories to meet, thereby ensuring NO₂ concentrations reported are of a high caliber. The lab follows the procedures set out in the Harmonisation Practical Guidance. In the latest available AIR-PT results, AIR PT AR036 (January – February 2020) and AIR PT AR040 (September – October 2020), Gradko scored 75%. No results are available between May and August 2020 as testing rounds were cancelled due to the COVID-19 pandemic. The percentage score reflects the results deemed to be satisfactory based upon the z-score of $< \pm 2$.

All local authority co-location studies which use tubes supplied by Gradko with the 20% TEA in water preparation method in 2020 were rated as 'good', as shown by the [precision summary results](#). This precision reflects the laboratory's performance and consistency in preparing and analysing the tubes, as well as the subsequent handling of the tubes in the field. Tubes are considered to have a "good" precision where the coefficient of variation of duplicate or triplicate diffusion tubes for eight or more monitoring periods during a year is less than 20%.

Monitoring in 2020 had been completed largely in adherence with the [2020 Diffusion Tube Monitoring Calendar](#), whereby most changeovers were completed within ± 2 days of the specified date. The only exception to this is the April monitoring period, whereby the tubes were changed seven days later than they should have been (06/05 as opposed to 29/04). This was due to interruptions resulting from the COVID-19 pandemic.

Diffusion Tube Annualisation

Annualisation was required at three non-automatic monitoring sites as data capture was between 25% and 75%. This included one of the short-term studies. These sites are as follows: GR/RL, BR3, and HP1. Annualisation has been completed using version 1.1 of the LAQM Diffusion Tube Data Processing Tool, which uses the most up-to-date processes and methodology as detailed in LAQM.TG(16). Urban Background AURN monitoring locations were used to annualise the data, and the three nearest sites with greater than

85% data capture were selected. Details and a summary of the annualisation carried out can be found in Table C.5.

Diffusion Tube Bias Adjustment Factors

The diffusion tube data presented within the 2021 ASR have been corrected for bias using an adjustment factor. Bias represents the overall tendency of the diffusion tubes to under or over-read relative to the reference chemiluminescence analyser. LAQM.TG16 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/NO₂ continuous analysers. Alternatively, the national database of diffusion tube co-location surveys provides bias factors for the relevant laboratory and preparation method.

Fareham and Gosport Borough Councils have applied a local bias adjustment factor of 0.91 to the 2020 monitoring data. A summary of bias adjustment factors used by Fareham and Gosport Borough Councils over the past five years is presented in Table C.4.

Three co-location studies are carried out by Fareham and Gosport Borough Councils at the three automatic monitoring locations (GOS1, FAR1, FAR2). Local bias adjustment calculations were completed using version 1.1 of the LAQM Diffusion Tube Data Processing Tool, which uses the most up-to-date processes and methodology as provided in LAQM.TG(16). A combined bias adjustment factor has been calculated from these 3 co-locations studies and is summarised in Table C.6. All co-location sites had good overall precision and data capture, with the exception of the co-location carried out at Tichborne Way, which had a poor overall data capture (90.1%).

The national bias adjustment factor for Gradko International Ltd. diffusion tubes using the 20% TEA preparation method is 0.81 based on 27 studies, as presented in Figure C.1. This is taken from National Diffusion Tube Bias Adjustment Spreadsheet, version 06/21.

It was decided that the combined local factor should be applied to the 2020 monitoring data. Although one of the co-location sites had poor data capture, there was overall good data capture at the other two co-locations sites and good precision throughout.

Additionally, these co-location sites have been in places for a number of years and reflect local the local conditions of Fareham and Gosport Borough Councils. The local factor is also more conservative of the national factor and is in-line with the factors applied over the previous five years.

Table C.4 – Bias Adjustment Factor

Monitoring Year	Local or National	If National, Version of National Spreadsheet	Adjustment Factor
2020	Local	-	0.91
2019	National	03/20	0.93
2018	National	03/19	0.93
2017	National	03/18	0.89
2016	Local (Fareham) National (Gosport)	03/17 (Gosport)	0.95 (Fareham) 0.94 (Gosport)

NO₂ Fall-off with Distance from the Road

Wherever possible, local authorities should ensure that monitoring locations are representative of exposure. However, where this is not possible, the NO₂ concentration at the nearest location relevant for exposure should be estimated using the Diffusion Tube Data Processing Tool/NO₂ fall-off with distance calculator available on the LAQM Support website. Where appropriate, non-automatic annual mean NO₂ concentrations corrected for distance are presented in Table B.1.

Fall-off with distance calculations was completed at one site where concentrations were greater than 36µg/m³ and the site is not located at relevant exposure – CM2. This was completed using version 1.1 of the LAQM Diffusion Tube Data Processing Tool, and the output is presented in Table C.7.

QA/QC of Automatic Monitoring

QA/QC of the automatic monitoring sites operated by Fareham and Gosport Borough Councils is undertaken by NPL on a bi-annual basis. This ensures reliability and accuracy of the measurements. The first bi-annual QA/QC check of 2020 was unable to be carried out due to the COVID-19 pandemic. WeCare4Air therefore undertook an external review of the sites. No irregularities were identified during either of these checks. As part of the LSO duties, the monitoring sites are visited on a monthly basis to ensure that the monitors are performing as required.

PM₁₀ and PM_{2.5} Monitoring Adjustment

A Tapered Element Oscillating Microbalance (TEOM) is in operation at the Tichborne Way monitoring location to record PM₁₀ concentrations. As TEOM monitors do not meet the equivalence criteria for PM₁₀ monitoring the data must be adjusted. The Tichborne Way PM₁₀ data has been corrected using the Volatile Correction Model (VCM) methodology. The VCM correction has been applied to the monitoring data by WeCare4Air.

Automatic Monitoring Annualisation

All automatic monitoring locations within Fareham and Gosport Borough Councils recorded data capture of greater than 75% therefore it was not required to annualise any monitoring data. In addition, any sites with a data capture below 25% do not require annualisation.

NO₂ Fall-off with Distance from the Road

Wherever possible, local authorities should ensure that monitoring locations are representative of exposure. However, where this is not possible, the NO₂ concentration at the nearest location relevant for exposure should be estimated using the NO₂ fall-off with distance calculator available on the LAQM Support website. Where appropriate, non-automatic annual mean NO₂ concentrations corrected for distance are presented in Table B.1.

No automatic NO₂ monitoring locations within Fareham and Gosport Borough Councils required distance correction during 2020.

Table C.5 – Annualisation Summary (concentrations presented in $\mu\text{g}/\text{m}^3$)

Site ID	Annualisation Factor Brighton Preston Park AURN	Annualisation Factor Bournemouth AURN	Annualisation Factor Chilbolton Observatory	Average Annualisation Factor	Raw Data Annual Mean	Annualised Annual Mean	Comments
GR/RL	0.9605	0.9809	1.0676	1.0030	20.1	20.2	
BR3	1.0273	0.9829	0.8990	0.9697	25.5	24.8	
HP1	0.8887	0.9954	1.2851	1.0564	14.6	15.4	

Table C.6 – Local Bias Adjustment Calculation

	Local Bias Adjustment Input 1	Local Bias Adjustment Input 2	Local Bias Adjustment Input 3
Periods used to calculate bias	9	11	11
Bias Factor A	0.98 (0.85 - 1.17)	0.93 (0.82 - 1.06)	0.84 (0.78 - 0.91)
Bias Factor B	2% (-14% - 18%)	8% (-6% - 22%)	19% (10% - 28%)
Diffusion Tube Mean ($\mu\text{g}/\text{m}^3$)	24.4	29.8	21.4
Mean CV (Precision)	4.0%	4.3%	4.4%
Automatic Mean ($\mu\text{g}/\text{m}^3$)	24.0	27.6	18.0
Data Capture	99%	100%	94%
Adjusted Tube Mean ($\mu\text{g}/\text{m}^3$)	24 (21 - 29)	28 (24 - 32)	18 (17 - 19)

Notes:

A combined local bias adjustment factor of 0.91 has been used to bias adjust the 2020 diffusion tube results.

Figure C.1 – National Diffusion Tube Bias Adjustment Factor Spreadsheet 06/21

National Diffusion Tube Bias Adjustment Factor Spreadsheet						Spreadsheet Version Number: 06/21					
<p>Follow the steps below in the correct order to show the results of relevant co-location studies</p> <p>Data only apply to tubes exposed monthly and are not suitable for correcting individual short-term monitoring periods</p> <p>Whenever presenting adjusted data, you should state the adjustment factor used and the version of the spreadsheet</p> <p>This spreadsheet will be updated every few months; the factors may therefore be subject to change. This should not discourage their immediate use.</p>								<p>This spreadsheet will be updated at the end of Sept 2021</p> <p>LAQM Helpdesk Website</p>			
<p>The LAQM Helpdesk is operated on behalf of Defra and the Devolved Administrations by Bureau Veritas, in conjunction with contract partners AECOM and the National Physical Laboratory.</p>						<p>Spreadsheet maintained by the National Physical Laboratory. Original compiled by Air Quality Consultants Ltd.</p>					
Step 1:		Step 2:	Step 3:	Step 4:							
<p>Select the Laboratory that Analyses Your Tubes from the Drop-Down List</p>		<p>Select a Preparation Method from the Drop-Down List</p>	<p>Select a Year from the Drop-Down List</p>	<p>Where there is only one study for a chosen combination, you should use the adjustment factor shown with caution. Where there is more than one study, use the overall factor³ shown in blue at the foot of the final column.</p>							
<p>If a laboratory is not shown, we have no data for this laboratory.</p>		<p>If a preparation method is not shown, we have no data for this method at this laboratory.</p>	<p>If a year is not shown, we have no data²</p>	<p>If you have your own co-location study then see footnote⁴. If uncertain what to do then contact the Local Air Quality Management Helpdesk at LAQMHelpdesk@bureauveritas.com or 0800 0327953</p>							
Analysed By ¹		Method	Year ⁵	Site Type	Local Authority	Length of Study (months)	Diffusion Tube Mean Conc. (Dm) ($\mu\text{g}/\text{m}^3$)	Automatic Monitor Mean Conc. (Cm) ($\mu\text{g}/\text{m}^3$)	Bias (B)	Tube Precision ⁶	Bias Adjustment Factor (A) (Cm/Dm)
Gradko		20% TEA in water	2020		Overall Factor ³ (27 studies)				Use	0.81	

Table C.7 – NO₂ Fall off With Distance Calculations (concentrations presented in µg/m³)

Site ID	Distance (m): Monitoring Site to Kerb	Distance (m): Receptor to Kerb	Monitored Concentration (Annualised and Bias Adjusted)	Background Concentration	Concentration Predicted at Receptor	Comments
CM2	0.2	8.6	47.6	18.1	30.7	

Appendix D: Maps of Monitoring Locations and AQMAs

Figure D.1 – Map of Monitoring Sites in Fareham and Gosport

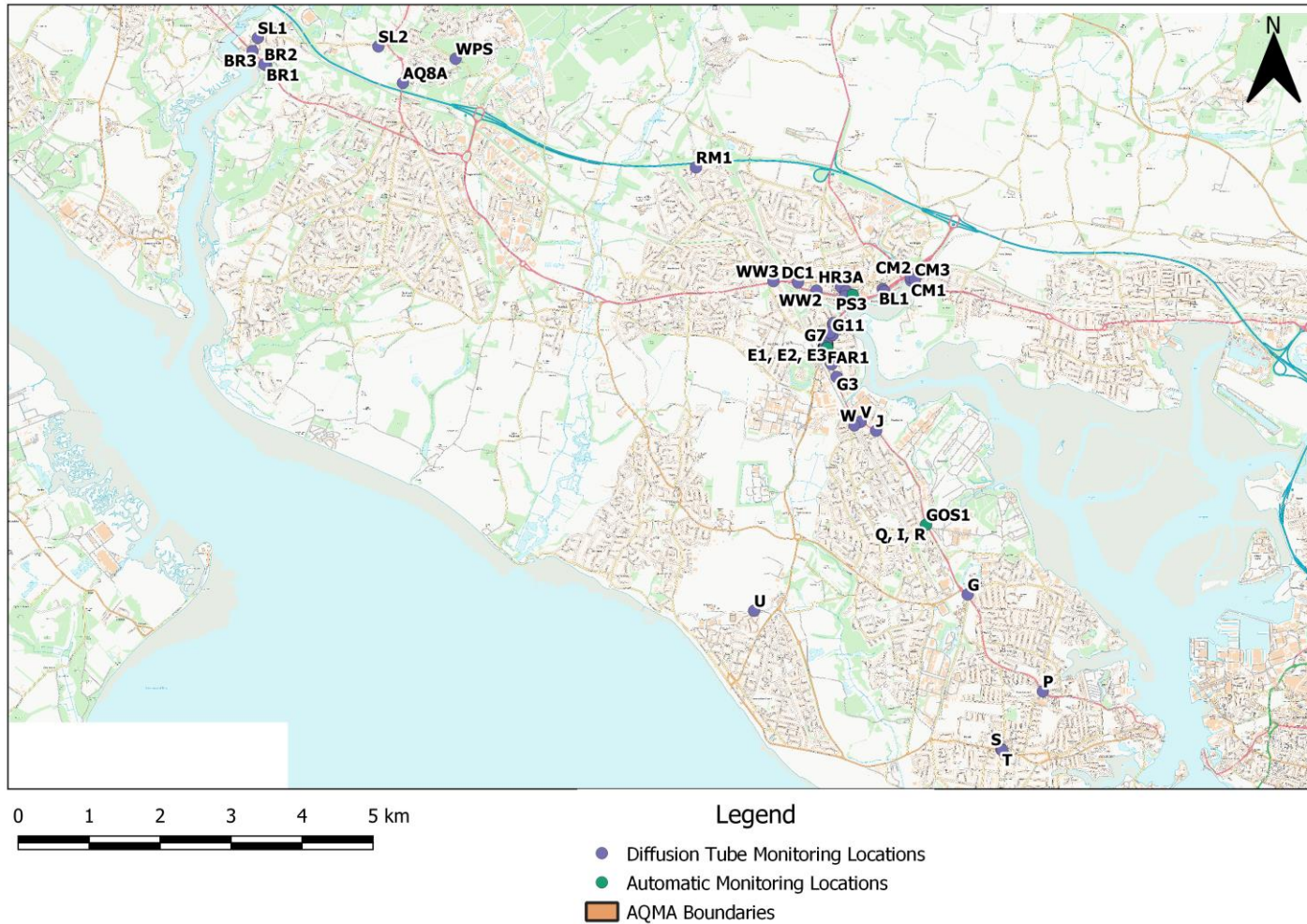


Figure D.2 – Map of Automatic Monitoring Sites in Fareham

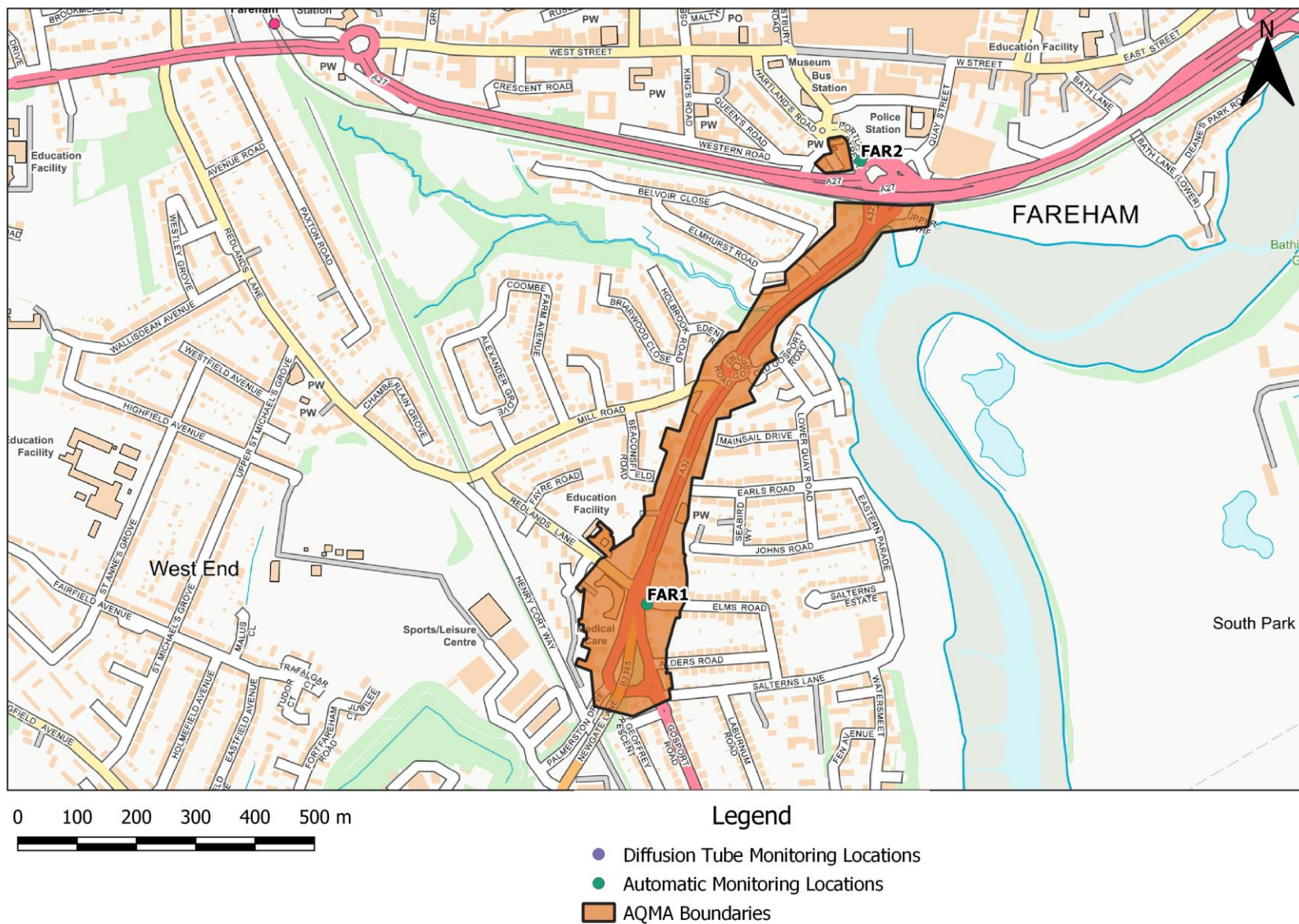


Figure D.3 – Map of Automatic Monitoring Sites in Gosport

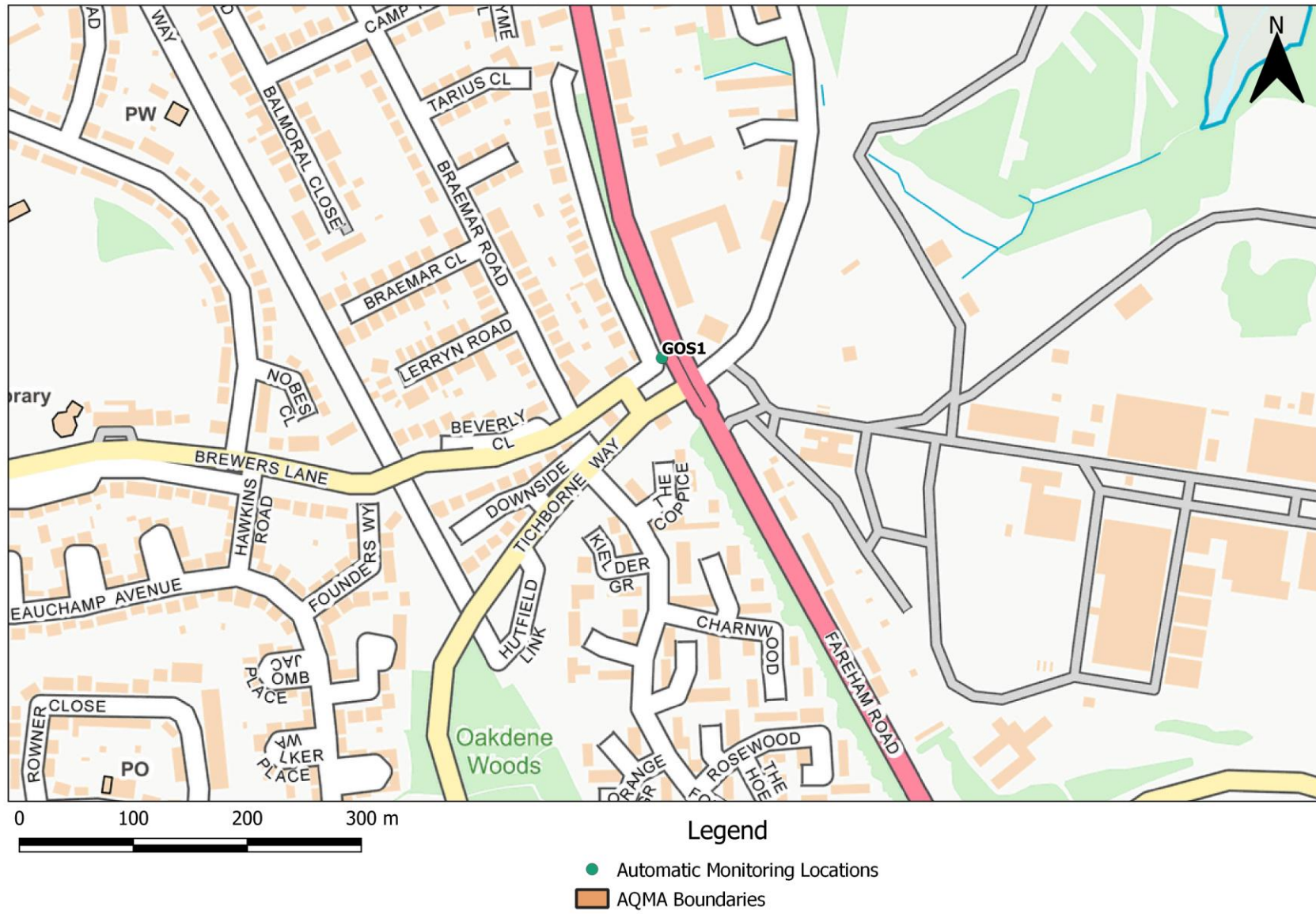


Figure D.4 – Map of Diffusion Tube Monitoring Locations Around the Gosport Road AQMA

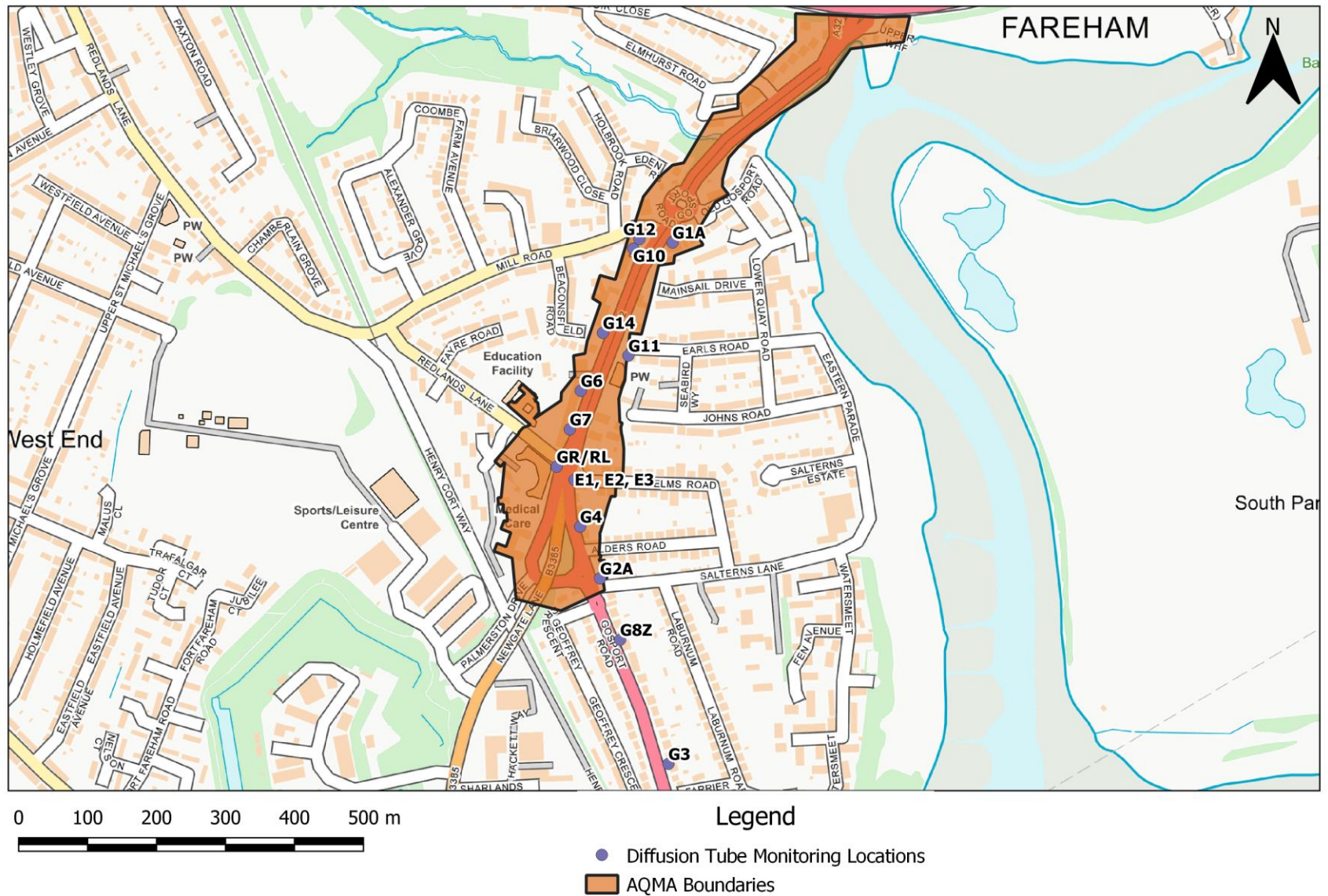


Figure D.5 – Map of Diffusion Tube Monitoring Locations Around the Portland Street AQMA

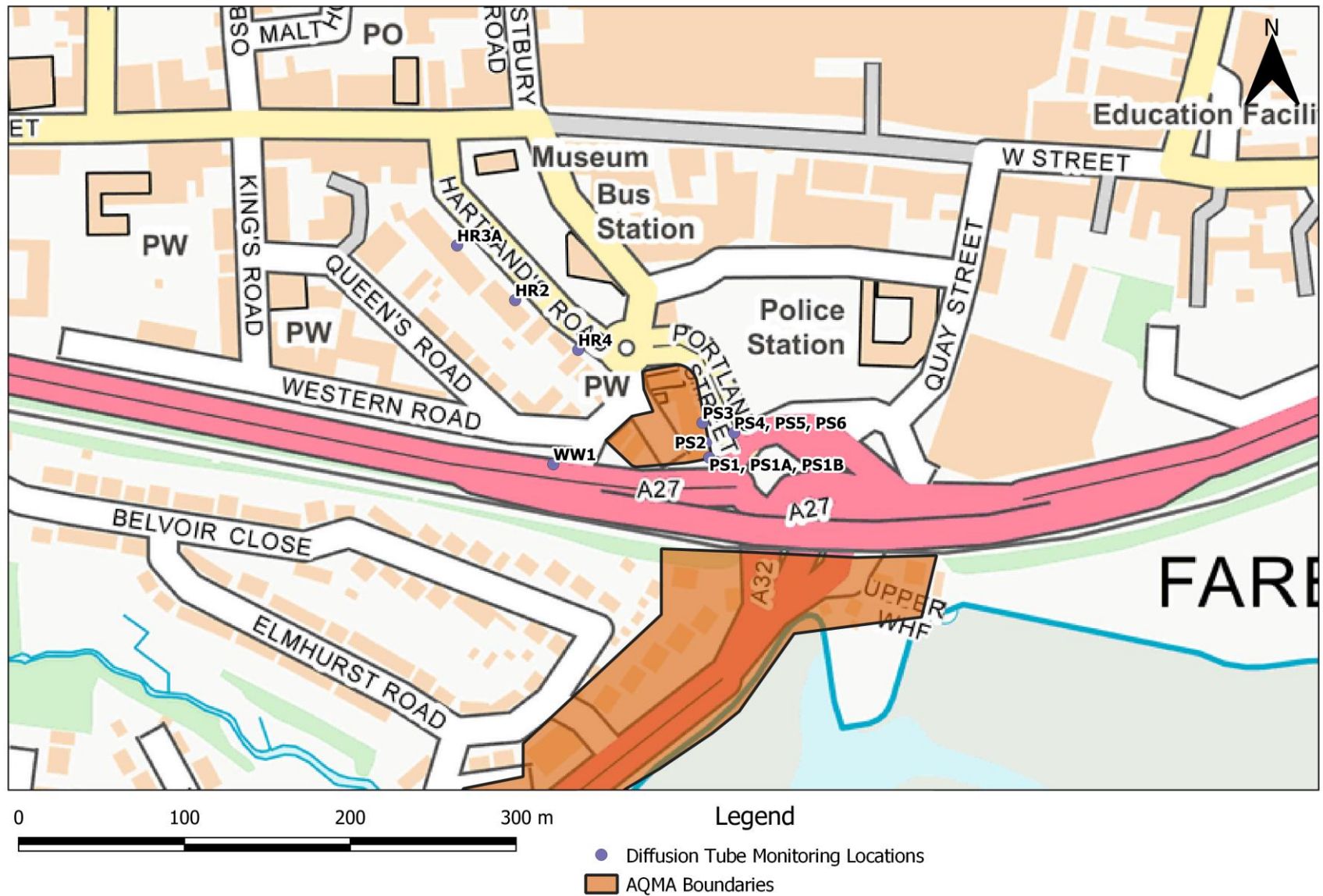


Figure D.6 – Map of Diffusion Tube Monitoring Locations in Fareham

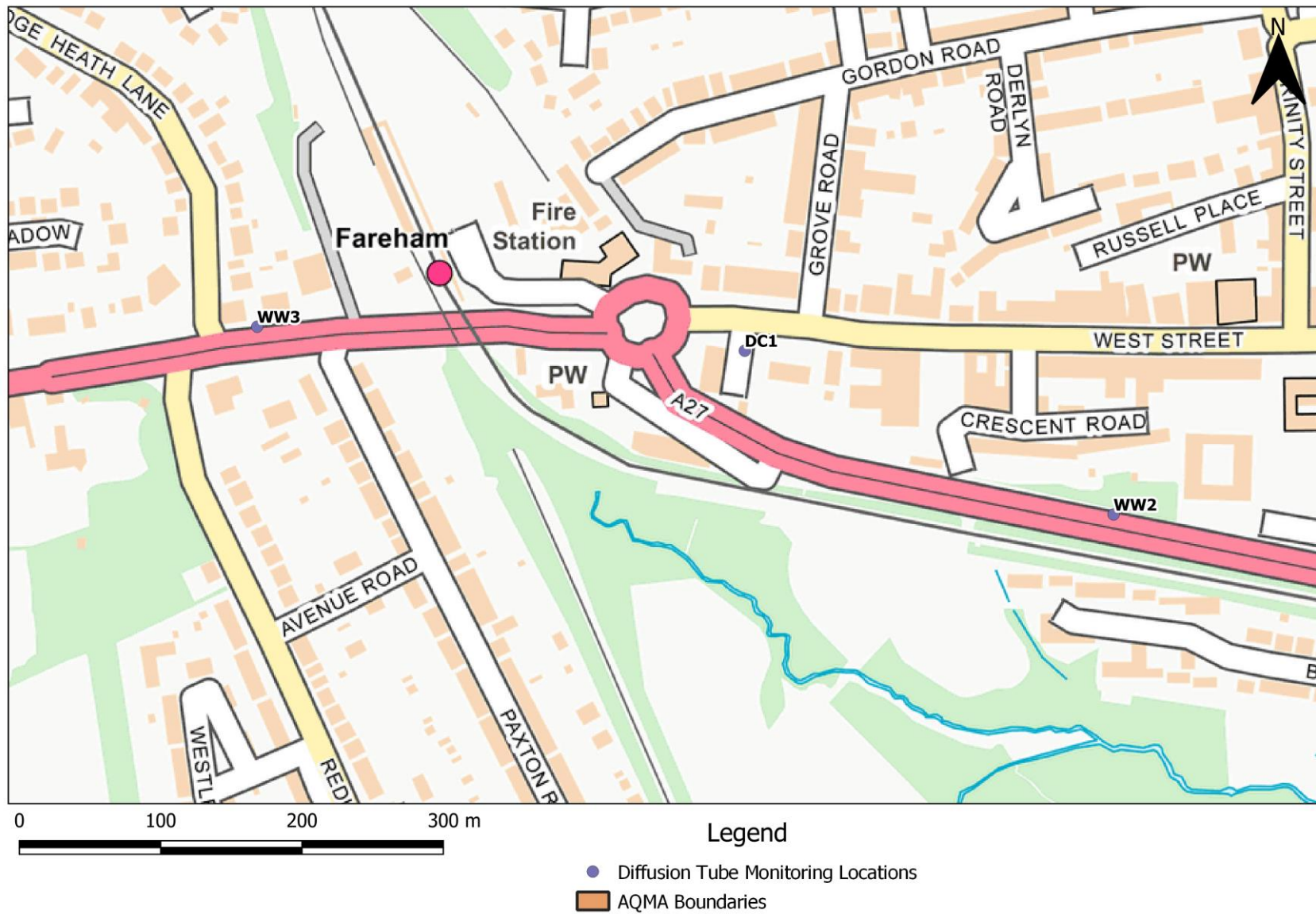


Figure D.7 – Map of Diffusion Tube Monitoring Locations in Fareham

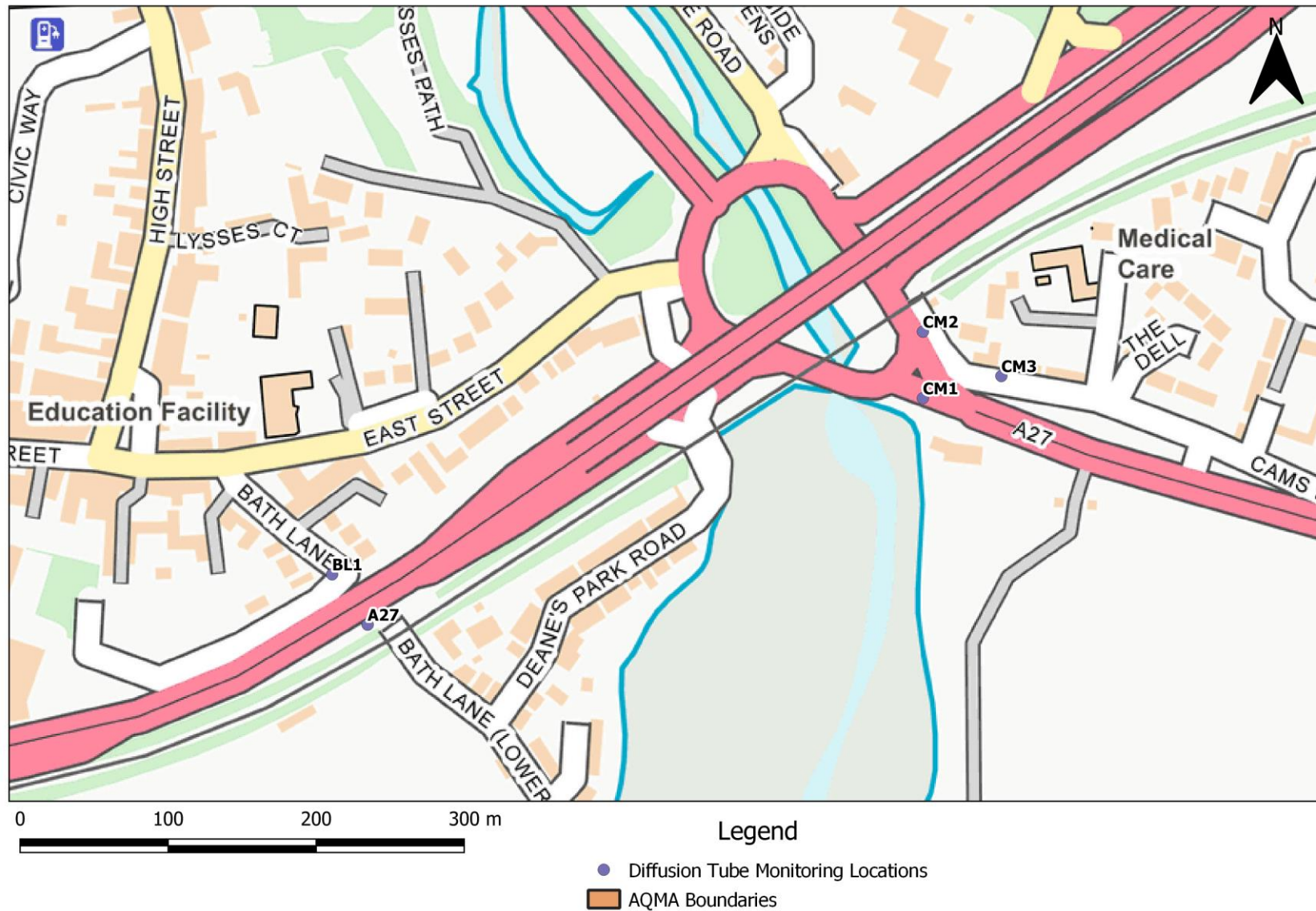


Figure D.8 – Map of Diffusion Tube Monitoring Locations in Fareham

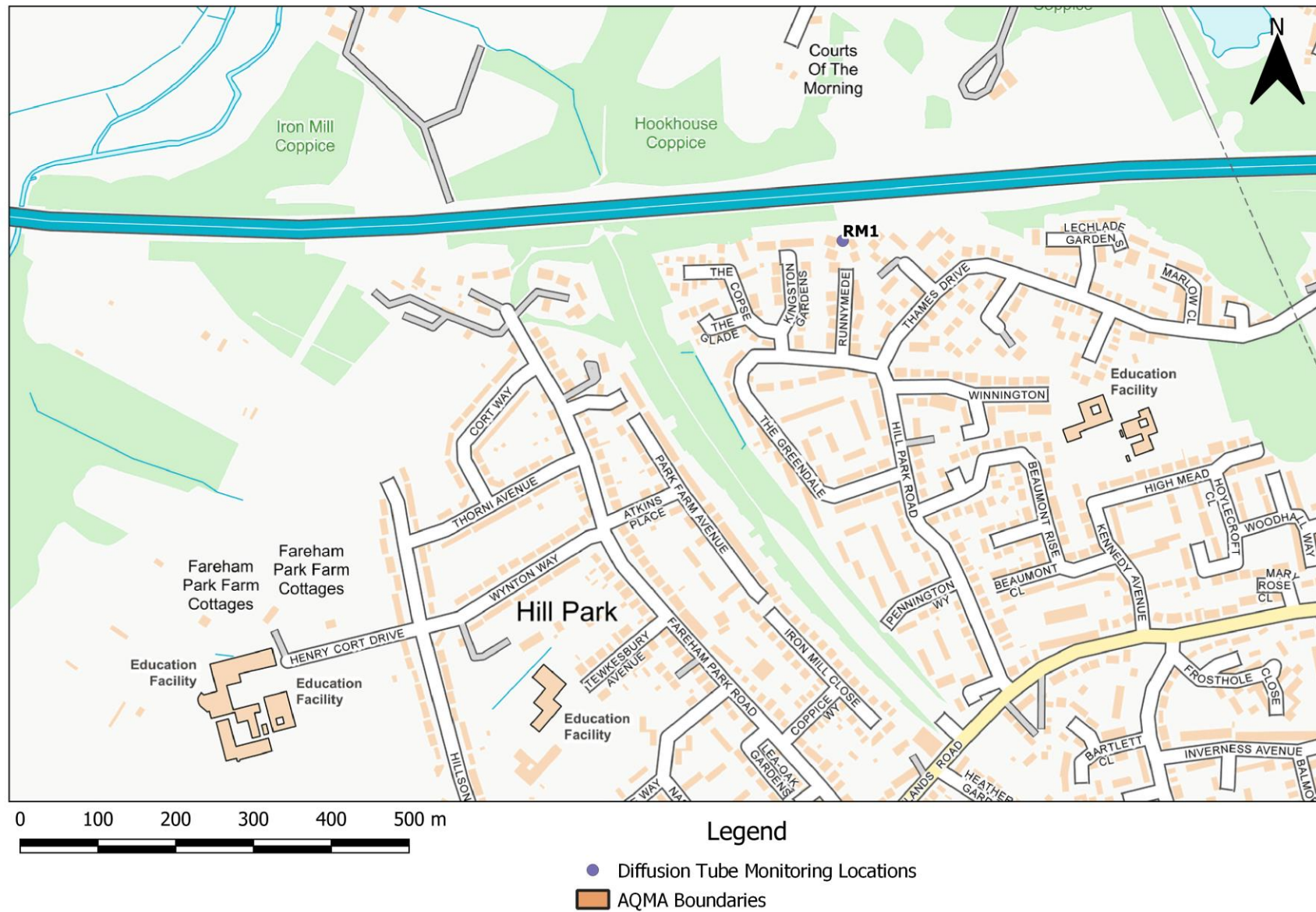


Figure D.9 – Map of Diffusion Tube Monitoring Locations in Fareham

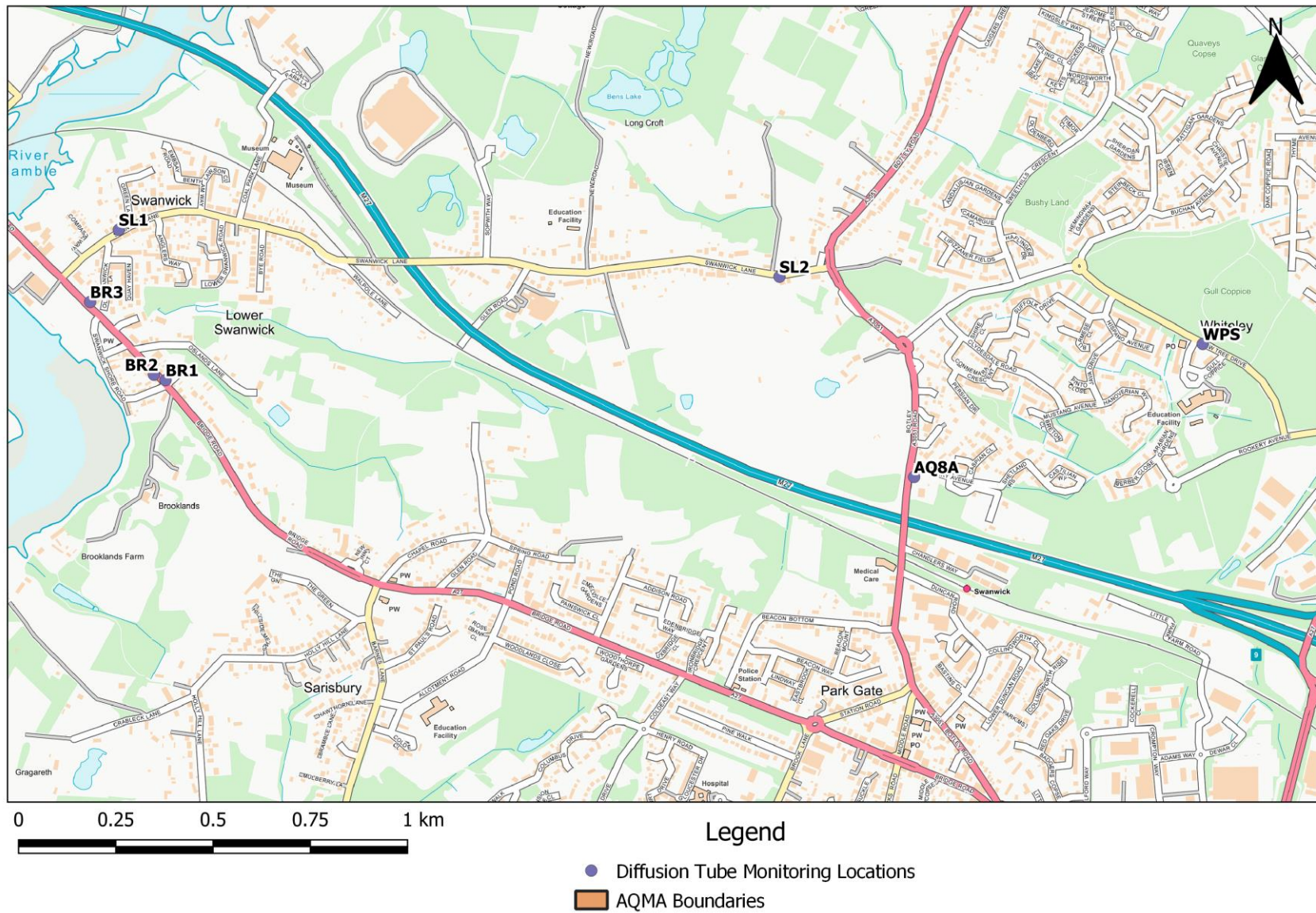


Figure D.10 – Map of Diffusion Tube Monitoring Locations in Gosport

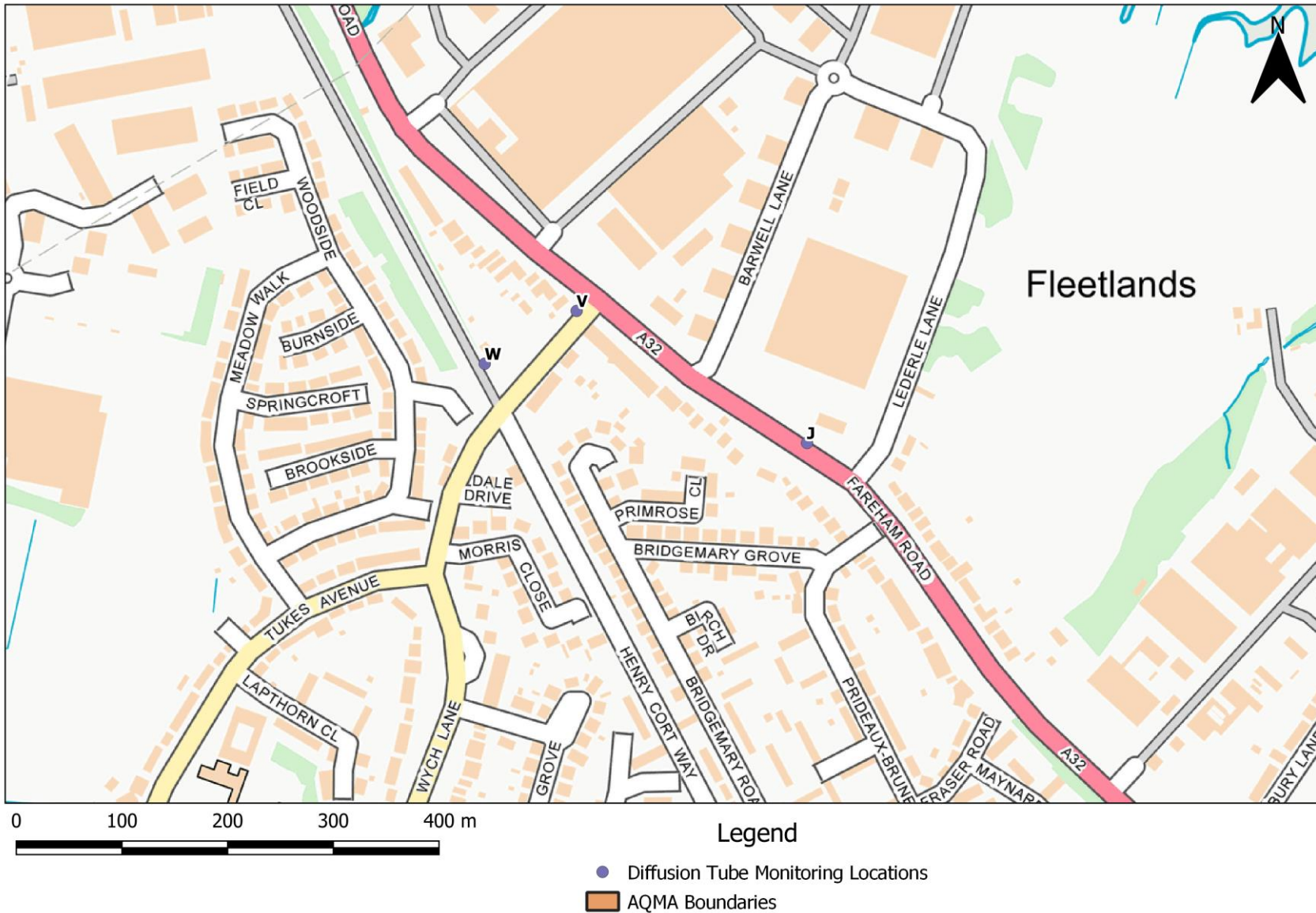


Figure D.11 – Map of Diffusion Tube Monitoring Locations in Gosport

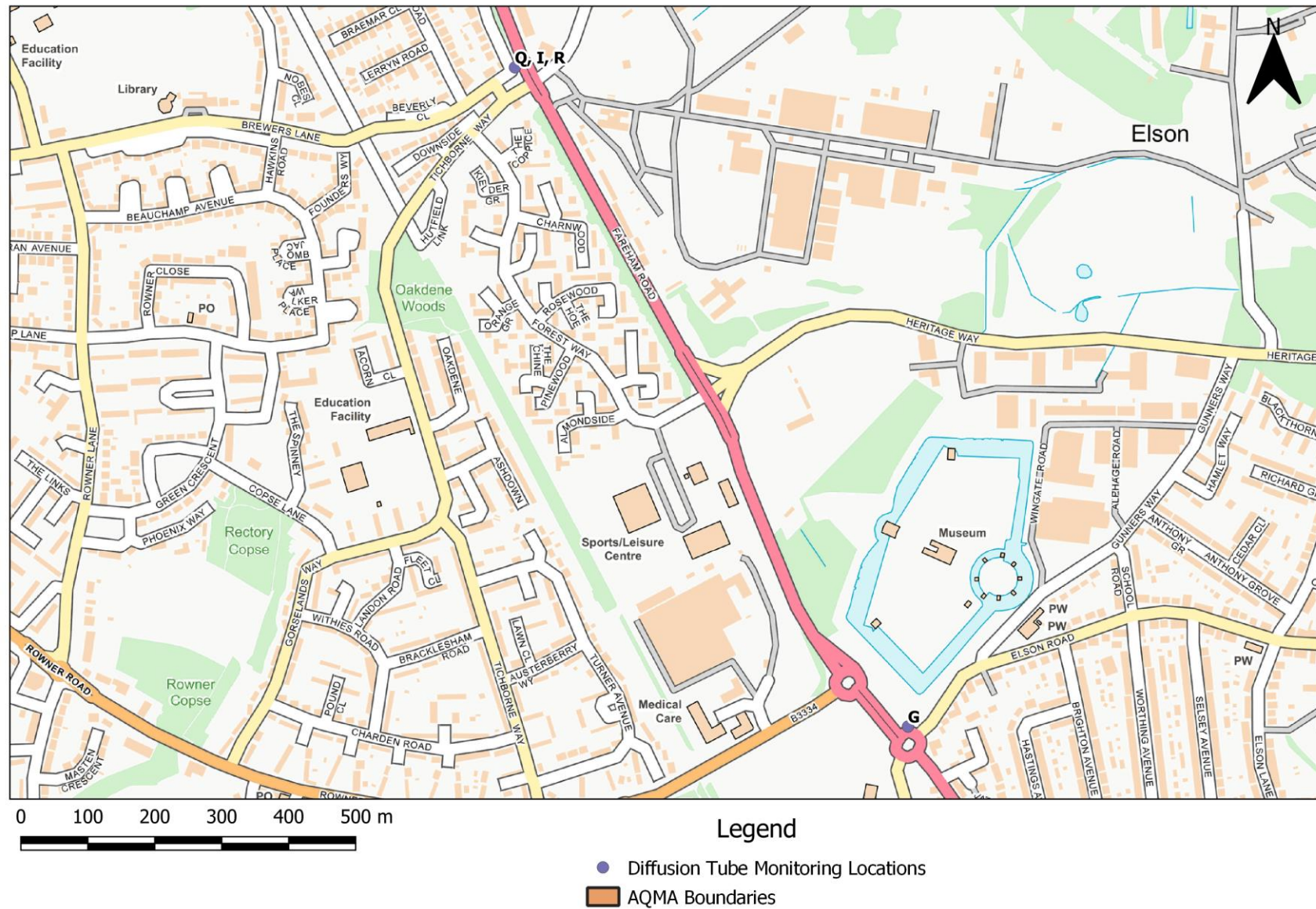


Figure D.12 – Map of Diffusion Tube Monitoring Locations in Gosport

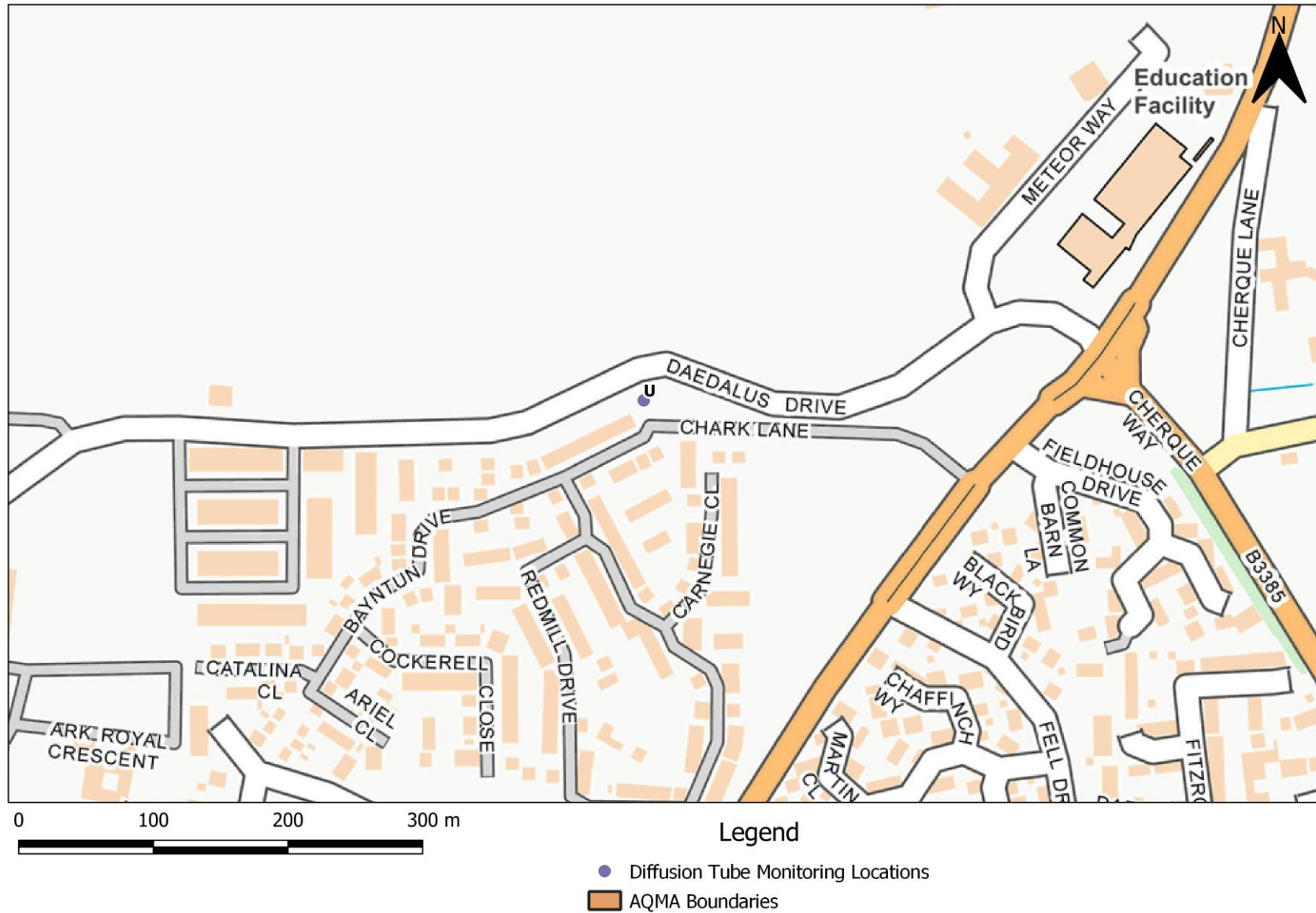
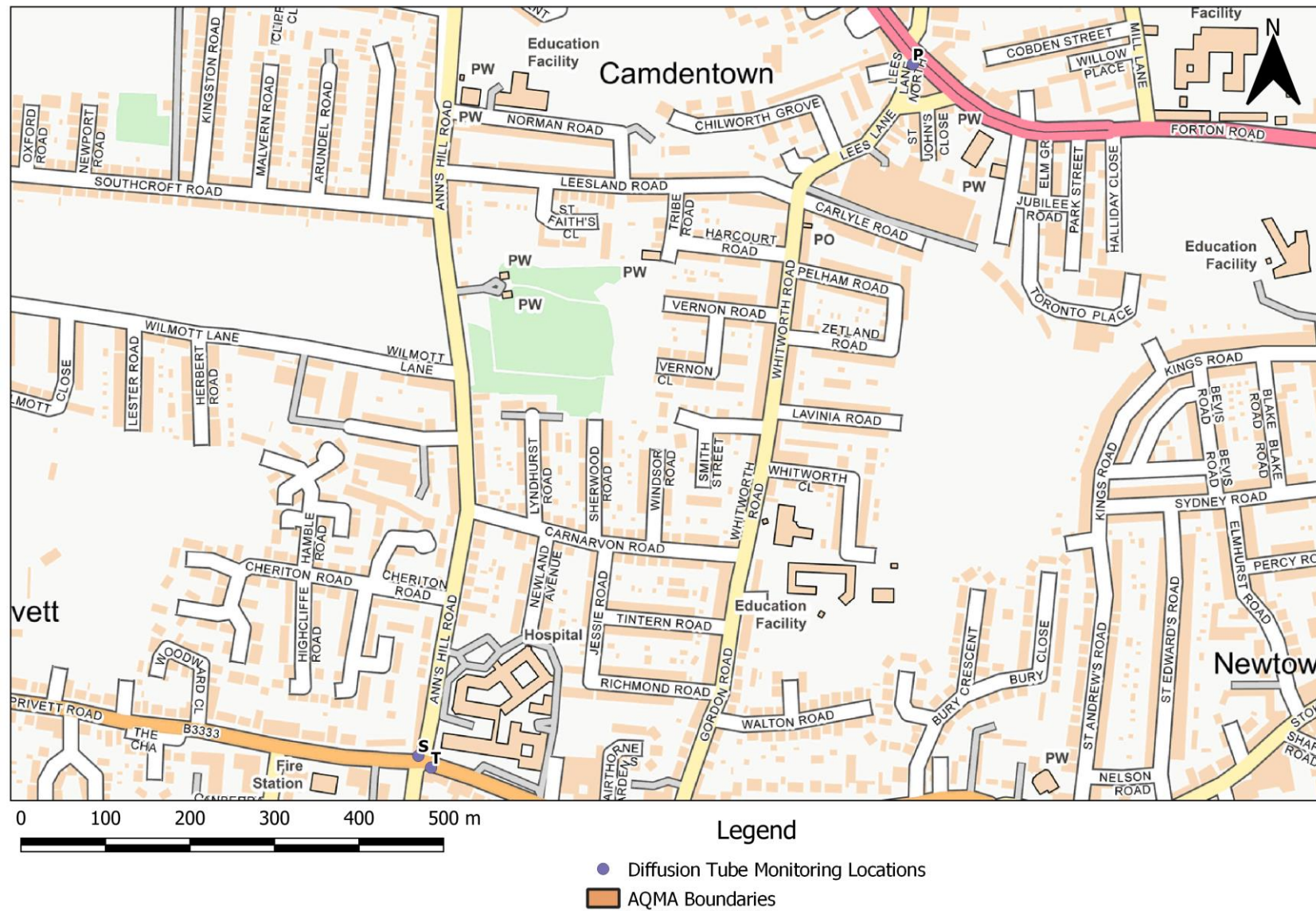


Figure D.13 – Map of Diffusion Tube Monitoring Locations in Gosport



Appendix E: Summary of Air Quality Objectives in England

Table E.1 – Air Quality Objectives in England⁷

Pollutant	Air Quality Objective: Concentration	Air Quality Objective: Measured as
Nitrogen Dioxide (NO ₂)	200µg/m ³ not to be exceeded more than 18 times a year	1-hour mean
Nitrogen Dioxide (NO ₂)	40µg/m ³	Annual mean
Particulate Matter (PM ₁₀)	50µg/m ³ , not to be exceeded more than 35 times a year	24-hour mean
Particulate Matter (PM ₁₀)	40µg/m ³	Annual mean
Sulphur Dioxide (SO ₂)	350µg/m ³ , not to be exceeded more than 24 times a year	1-hour mean
Sulphur Dioxide (SO ₂)	125µg/m ³ , not to be exceeded more than 3 times a year	24-hour mean
Sulphur Dioxide (SO ₂)	266µg/m ³ , not to be exceeded more than 35 times a year	15-minute mean

⁷ The units are in microgrammes of pollutant per cubic metre of air (µg/m³).

Appendix F: Impact of COVID-19 upon LAQM

COVID-19 has had a significant impact on society. Inevitably, COVID-19 has also had an impact on the environment, with implications to air quality at local, regional and national scales.

COVID-19 has presented various challenges for Local Authorities with respect to undertaking their statutory LAQM duties in the 2021 reporting year. Recognising this, Defra provided various advice updates throughout 2020 to English authorities, particularly concerning the potential disruption to air quality monitoring programmes, implementation of Air Quality Action Plans (AQAPs) and LAQM statutory reporting requirements. Defra has also issued supplementary guidance for LAQM reporting in 2021 to assist local authorities in preparing their 2021 ASR. Where applicable, this advice has been followed.

Despite the challenges that the pandemic has given rise to, the events of 2020 have also provided Local Authorities with an opportunity to quantify the air quality impacts associated with wide-scale and extreme intervention, most notably in relation to emissions of air pollutants arising from road traffic. The vast majority (>95%) of AQMAs declared within the UK are related to road traffic emissions, where attainment of the annual mean objective for nitrogen dioxide (NO₂) is considered unlikely. On 23rd March 2020, the UK Government released official guidance advising all members of public to stay at home, with work-related travel only permitted when absolutely necessary. During this initial national lockdown (and to a lesser extent other national and regional lockdowns that followed), marked reductions in vehicle traffic were observed; Department for Transport (DfT) data⁸ suggests reductions in vehicle traffic of up to 70% were experienced across the UK by mid-April, relative to pre COVID-19 levels.

This reduction in travel in turn gave rise to a change of air pollutant emissions associated with road traffic, i.e. nitrous oxides (NO_x), and exhaust and non-exhaust particulates (PM). The Air Quality Expert Group (AQEG)⁹ has estimated that during the initial lockdown period in 2020, within urbanised areas of the UK reductions in NO₂ annual mean

⁸ Prime Minister's Office, COVID-19 briefing on the 31st of May 2020

⁹ Air Quality Expert Group, Estimation of changes in air pollution emissions, concentrations and exposure during the COVID-19 outbreak in the UK, June 2020

concentrations were between 20 and 30% relative to pre-pandemic levels, which represents an absolute reduction of between 10 to 20 $\mu\text{g}/\text{m}^3$ if expressed relative to annual mean averages. During this period, changes in PM_{2.5} concentrations were less marked than those of NO₂. PM_{2.5} concentrations are affected by both local sources and the transport of pollution from wider regions, often from well beyond the UK. Through analysis of AURN monitoring data for 2018-2020, AQEG have detailed that PM_{2.5} concentrations during the initial lockdown period are of the order 2 to 5 $\mu\text{g}/\text{m}^3$ lower relative to those that would be expected under business-as-usual conditions.

As restrictions are gradually lifted, the challenge is to understand how these air quality improvements can benefit the long-term health of the population.

Impacts of COVID-19 on Air Quality within Fareham and Gosport Borough Councils

Details of the impacts of COVID-19 on Air Quality within Fareham and Gosport Borough Councils is presented below:

- Increase in the number of cremations taking place at Porchester Crematorium, especially during the peaks of the first and second waves. Figures are provided in Appendix C.
- There was a decrease in the total number of aircraft movements (fixed wing and helicopter) at the Solent Airport. This is not a large commercial airport, so whilst it may not have been impacted as much as larger commercial airports such as Heathrow, there has still been a notable decrease. Total aircraft movements for the past three years are as follows:
 - 2018 – 28,482
 - 2019 – 27,944
 - 2020 – 23,705
- A summary of annual average daily traffic (AADT) data for the A27 in Fareham, provided by Hampshire County Council is provided below. Initial analysis of traffic data from 2020 is also detailed. It should be noted that the traffic data used for this is yet to be ratified, and therefore only serves indicative purposes.

Year	A27 Fareham Traffic Data
2017 (AADT)	55,256
2020 (AADT)	52,921
Relative Change (2017 vs 2020)	-4.23%

- Traffic volumes have decreased in 2020 compared to 2017, however this is not as pronounced as at other sites across the county. This is likely reflective of the critical strategic nature of this link to the local economy;
 - Car traffic volumes decreased by around 1% post-March 2020, reflecting the ‘Stay at Home’ policy issued by the UK Government as a result of the COVID-19 pandemic. These volumes have remained generally lower throughout 2020 than what would have been expected, but have fluctuated over time;
 - Light Good Vehicles (LGVs) volumes appear to have increased since the first quarter of 2020. This is believed to be due to the greater number of home-deliveries occurring during the pandemic; and
 - Heavy Good Vehicles (HGVs) volumes have also increased during the pandemic, likely for the same reasons as LGVs.
- In 2020 there has been an average decrease in annual mean NO₂ concentrations from that reported in 2019 by 4.2µg/m³ at 47 of the monitoring locations (both automatic and passive locations). This is greater than the average decrease from 2018 to 2019 (2.0µg/m³), where a decrease was only reported at 41 monitoring locations. This indicates that whilst there has only been a slight increase in the number of sites experiencing a decrease in annual mean NO₂ concentrations in 2020, there has been a greater reduction experienced overall. This is likely a result of lower traffic volumes following UK Government guidelines and restrictions to combat the COVID-19 pandemic.

Opportunities Presented by COVID-19 upon LAQM within Fareham and Gosport Borough Councils

No LAQM related opportunities have arisen as a consequence of COVID-19 within Fareham and Gosport Borough Councils. The Councils did however increase their activity

on social media, notifying members of public of restrictions to bonfires as the recycling centres were closed, and then the limited capacity of these once they re-opened.

Challenges and Constraints Imposed by COVID-19 upon LAQM within Fareham and Gosport Borough Councils

The impact of COVID-19 on LAQM duties carried out by Fareham and Gosport Borough Councils are as follows:

- During the national lockdown, NPL were unable to carry out the QA/QC duties on the automatic monitoring locations. Despite this, WeCare4Air undertook an internal review of the sites. **Impact – Small/Medium**
- Additional air quality projects, such as Clean Air Day and the production of a series of behaviour change videos were halted due to staffing pressures and increased workloads in other areas of the Environmental Health departments. **Impact - Small**
- The changeover of April monitoring period diffusion tubes was delayed by seven days. **Impact - Small**

Table F 1 – Impact Matrix

Category	Impact Rating: None	Impact Rating: Small	Impact Rating: Medium	Impact Rating: Large
Automatic Monitoring – Data Capture (%)	More than 75% data capture	50 to 75% data capture	25 to 50% data capture	Less than 25% data capture
Automatic Monitoring – QA/QC Regime	Adherence to requirements as defined in LAQM.TG16	Routine calibrations taken place frequently but not to normal regime. Audits undertaken alongside service and maintenance programmes	Routine calibrations taken place infrequently and service and maintenance regimes adhered to. No audit achieved	Routine calibrations not undertaken within extended period (e.g. 3 to 4 months). Interruption to service and maintenance regime and no audit achieved
Passive Monitoring – Data Capture (%)	More than 75% data capture	50 to 75% data capture	25 to 50% data capture	Less than 25% data capture
Passive Monitoring – Bias Adjustment Factor	Bias adjustment undertaken as normal	<25% impact on normal number of available bias adjustment colocation studies (2020 vs 2019)	25-50% impact on normal number of available bias adjustment studies (2020 vs 2019)	>50% impact on normal number of available bias adjustment studies (2020 vs 2019) and/or applied bias adjustment factor studies not considered representative of local regime
Passive Monitoring – Adherence to Changeover Dates	Defra diffusion tube exposure calendar adhered to	Tubes left out for two exposure periods	Tubes left out for three exposure periods	Tubes left out for more than three exposure periods
Passive Monitoring – Storage of Tubes	Tubes stored in accordance with laboratory guidance and analysed promptly.	Tubes stored for longer than normal but adhering to laboratory guidance	Tubes unable to be stored according to be laboratory guidance but analysed prior to expiry date	Tubes stored for so long that they were unable to be analysed prior to expiry date. Data unable to be used
AQAP – Measure Implementation	Unaffected	Short delay (<6 months) in development of a new AQAP, but is on-going	Long delay (>6 months) in development of a new AQAP, but is on-going	No progression in development of a new AQAP
AQAP – New AQAP Development	Unaffected	Short delay (<6 months) in development of a new AQAP, but is on-going	Long delay (>6 months) in development of a new AQAP, but is on-going	No progression in development of a new AQAP

Glossary of Terms

Abbreviation	Description
AQAP	Air Quality Action Plan - A detailed description of measures, outcomes, achievement dates and implementation methods, showing how the local authority intends to achieve air quality limit values'
AQMA	Air Quality Management Area – An area where air pollutant concentrations exceed / are likely to exceed the relevant air quality objectives. AQMAs are declared for specific pollutants and objectives
ASR	Annual Status Report
Defra	Department for Environment, Food and Rural Affairs
DMRB	Design Manual for Roads and Bridges – Air quality screening tool produced by Highways England
EU	European Union
FDMS	Filter Dynamics Measurement System
LAQM	Local Air Quality Management
NO ₂	Nitrogen Dioxide
NO _x	Nitrogen Oxides
PM ₁₀	Airborne particulate matter with an aerodynamic diameter of 10µm or less
PM _{2.5}	Airborne particulate matter with an aerodynamic diameter of 2.5µm or less
QA/QC	Quality Assurance and Quality Control
SO ₂	Sulphur Dioxide
NPL	National Physics Laboratory

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