

FAREHAM
BOROUGH COUNCIL



GOSPORT
Borough Council

Working in partnership

2017 Air Quality Annual Status Report (ASR)

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

August, 2017

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Executive Summary: Air Quality in Our Area

Air pollution is an issue that affects everyone within the Boroughs of Fareham and Gosport with varying levels of severity. The air that we breathe is essential for health and wellbeing and it shouldn't have to be a cause of detrimental health effects.

Where we live, where we work, our travel choices and the journeys we make, can affect the concentrations of certain air pollutants that we are exposed to.

Local authorities have an obligation through the Local Air Quality Management (LAQM) regime to review and assess the air quality within their regions. Specific measures are implemented by way of Air Quality Action Plans (AQAPs) if there are areas of poor air quality shown to exist. Action by community engagement through education and promotion helps to benefit air quality at a local level. Good air quality begins at a local level, with actions being replicated on regional and national scales, benefitting on a wider scale, helping to meet the Air Quality Strategy (AQS) objectives that are set out in UK law.

Air Quality in Fareham and Gosport

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

The annual health cost to society of the impacts of particulate matter alone in the UK is estimated to be around £16 billion³.

The main source of air pollution within the Boroughs is road traffic emissions from vehicles using the existing road network. Traffic emissions are a major source of nitrogen dioxide (NO₂) and particulate matter of different size fractions (PM₁₀ and PM_{2.5}) that, in addition to commercial, industrial and domestic sources, contribute to

¹ Environmental equity, air quality, socioeconomic status and respiratory health, 2010

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

³ Defra. Abatement cost guidance for valuing changes in air quality, May 2013

background pollutant concentrations.

Air Quality Management Areas (AQMAs) are declared when there is an exceedance or likely exceedance of an Air Quality Strategy (AQS) objective, which are legally binding pollution limits to which Fareham and Gosport Boroughs must adhere to. There are currently two AQMAs within Fareham that have been declared due to monitored exceedances of the nitrogen dioxide (NO₂) annual mean AQS objective; Gosport Road declared in 2006, and Portland Street declared in 2007.

The current AQMAs can be viewed online at https://uk-air.defra.gov.uk/aqma/local-authorities?la_id=103, details of the AQMAs are provided in Table 2.1 and boundary maps are presented in Figure F.2 and Figure F.3.

An Air Quality Action Plan (AQAP) was produced in 2008 due to the two AQMAs being designated. This outlined a number of measures and actions that were designed to improve the pollutant concentrations that were being experienced in these areas. The AQAP actions have been updated on a regular basis, initially through the Council's air quality steering group and more recently from direct liaison with representatives of Hampshire County Council's public transport and road network departments. The 2015 Updating and Screening Assessment required Fareham Borough Council to undertake a Detailed Assessment of the air quality in an area between the two existing AQMAs; this Detailed Assessment is included in the 2016 Fareham and Gosport ASR, which is available at:

http://www.fareham.gov.uk/PDF/licencing_and_inspections/HCU170130_FarehamAndGosport16.pdf

Upon completion of the 2016 Detailed Modelling Assessment it has been proposed to extend the boundaries of both the Gosport Road AQMA and the Portland Street AQMA. This decision has been made due to predicted exceedances of the NO₂ annual mean AQS objective being observed outside of the current AQMA boundaries. The AQAP will be updated in due course to recognise the boundary amendments of both AQMAs and the additional population numbers that reside within the new boundaries.

Actions to Improve Air Quality

An update on progress on measures in the air quality action plan are provided in Table 2.2. A number of the AQAP actions have now been completed and further targets have been set in relation to the same initiative. The detailed updates are as follows:

- The opening of the Eclipse busway in April 2012 as shown in Figure 2; latest passenger figures show that there was an increase of 2.5% between April 2015 – September 2015 compared to the same period in 2014. New Eclipse buses were introduced to services E1 and E2 in 2016;
- The use of the Eclipse busway by cyclists;
- Improved bus shelters including real time information (RTI) screens at bus stops throughout the Fareham-Gosport peninsula;
- Improved cycle paths between Fareham and Gosport;
- The development of the Quay Street “throughabout” reducing the number of vehicles passing close to Portland Street;
- Promotion of the Gosport Ferry between Gosport and Portsmouth as shown in Figure 1;
- The provision of a bus lane on Western Way, Fareham;
- The development of the Western Road, Fareham, bus gate, taking buses away from Portland Street;
- The publication of an air quality and health leaflet;
- The provision of two electric vehicle charging points in Fareham;
- Assisting Hampshire County Council with air quality monitoring for the Yew Tree Drive bus gate planning application;
- Sustainable travel banners on lamp posts in Gosport;
- Liaison in Summer of 2015 with the Public Health Team, Hampshire County Council;
- Letter of support from the Council to Hampshire County Council for their Low Emission Bus Scheme application in 2015;
- Air quality assessments through the planning regime e.g. Daedalus, Longfield Ave, Furze Court;
- Revised Fareham Borough Council’s Non-Residential Parking Standards SPD approved September 2015 which may have an impact on private car use;

- Fareham Borough Council's Design Guidance (excluding Welbourne) adopted in December 2015 covers issues such as the importance of pedestrian and cycle routes in new developments;
- Hampshire County Council's new draft Walking Strategy approved January 2016;
- New staff bike storage facility provided at Fareham Civic Offices in 2014;
- Routine inspections as required by the government to permitted installations including the Crematorium, Polycast foundry, vehicle paint resprayers etc;
- Staff taking part in annual sustainable travel challenges such as 'My Journey Commuter' challenge in May 2015; and
- Improvements in the Council's refuse fleet, e.g. 12 Euro V refuse vehicles; provision of vehicle tracking devices etc.

Funding has been secured through Hampshire County Council and planning permission granted for the Stubbington Bypass to be built (P/15/0718/CC) with work expected to start in 2018. The Bypass has been designed to alleviate the pressure on the highways and will reduce congestion on many of the Boroughs busy roads, reducing the impact of vehicles on the existing AQMAs. Thanks to extensive lobbying by Fareham Borough Council, the Government announced early in 2017 that £25.7m of funding has been awarded from the Local Growth Fund 3 towards the scheme. This is in addition to a £8.5m funding contribution from Hampshire County Council, which means the £34m project can now progress.

Figure 1: Promotion of Gosport Ferry

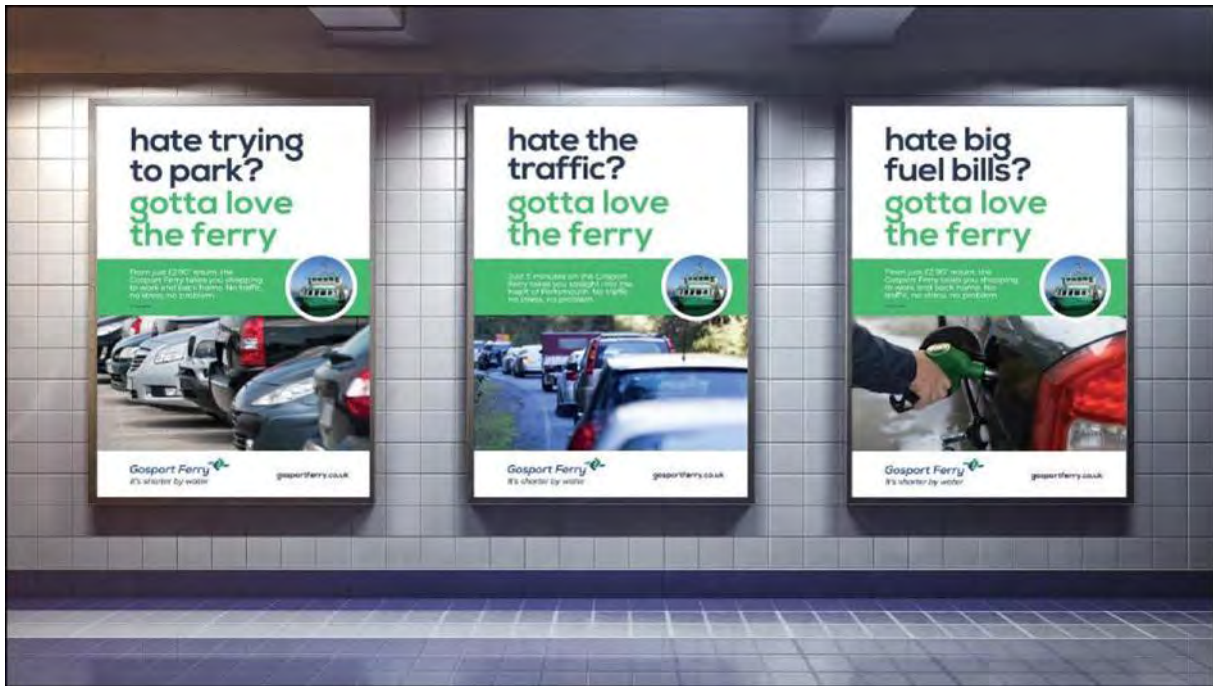


Figure 2: Launch Day of New Eclipse Buses



Conclusions and Priorities

Monitoring of NO₂ and PM₁₀ is completed within Fareham and Gosport utilising continuous automatic monitors and passive NO₂ diffusion tubes. There are currently three continuous monitors and a total of 37 diffusion tube locations within the monitoring network.

Monitoring results for Fareham in 2016 show a decline in NO₂ annual mean concentrations at all monitoring locations. In contrast, monitoring results for Gosport show an increase in concentrations at a majority of monitoring sites. The annual and 1-hour mean AQS objectives were met at all monitoring sites in both Gosport and Fareham.

Annual mean and 24-hour mean AQS objectives for PM₁₀ also continue to be met at the Tichborne Way monitoring station in Gosport. The PM₁₀ annual mean remains low compared to the 40µg/m³ annual mean objective, with the highest annual mean concentration recorded during 2012-2016 being 24µg/m³ in 2014.

Due to the conclusions of the 2016 Detailed Modelling Assessment, the boundaries of the Gosport Road AQMA and Portland Street AQMA have been expanded, due to predicted exceedances of annual mean NO₂ AQS objective outside of the existing AQMA boundaries.

The current priority is to continue work on updating the pre-existing AQAP, with the inclusion of the amended AQMA boundaries and new measures to ensure that actions are taken to reduce NO₂ concentrations within both AQMAs.

The 'UK Plan for Tackling Roadside Nitrogen Dioxide Concentrations' was published by the UK Government in July 2017. The Plan details the UK's approach to bringing roadside NO₂ concentrations within statutory limits in the shortest time possible. Fareham Borough Council is included in the Plan as one of the local authorities required to undertake a feasibility study to identify measures which will result in the most significant reductions in NO₂ along a single stretch of road in the Borough. This will be a future priority for the Council throughout 2017 and 2018, along with producing an updated AQAP that is in line with the Plan.

Local Engagement and How to get Involved

At an individual level, there are a number of ways the public are able to get involved and help improve air quality in the local area. More information about air quality can be obtained via the following links:

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

A leaflet has been produced in conjunction with the National Health Service that provides information in relation to different air pollutants, the health effects of specific air pollutants and what can be done to combat poor air quality. The leaflet is available at: http://www.fareham.gov.uk/pdf/licencing_and_inspections/Airqualityleaflet.pdf.

If residents have a concern regarding air pollution outside their home, a NO₂ diffusion tube can be fitted to monitor pollution concentrations outside their homes over a number of months.

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1 Local Air Quality Management

This report provides an overview of air quality in Fareham and Gosport during 2016. It fulfils the requirements of Local Air Quality Management (LAQM) as set out in Part IV of the Environment Act (1995) and the relevant Policy and Technical Guidance documents.

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

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

2 Actions to Improve Air Quality

2.1 Air Quality Management Areas

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

A summary of AQMAs declared by Fareham Borough Council can be found in Table 2.1. Further information related to declared or revoked AQMAs, including maps of AQMA boundaries are available online at https://uk-air.defra.gov.uk/aqma/local-authorities?la_id=103 . An Air Quality Action Plan (AQAP) was completed in 2008. An updated version of the current AQAP is currently in production.

It has been proposed to amend the boundary of the Gosport Road and Portland Street AQMAs within Fareham Borough Council. These amendments will be released with the updated AQAP.

Gosport Borough Council currently does not have any AQMAs.

Table 2.1 – Declared Air Quality Management Areas

AQMA Name	Date of Declaration	Pollutants and Air Quality Objectives	City / Town	One Line Description	Is air quality in the AQMA influenced by roads controlled by Highways England?	Level of Exceedance (maximum monitored/modelled concentration at a location of relevant exposure)		Action Plan (inc. date of publication)
						At Declaration	Now	
Portland Street AQMA	01/12/2007	NO ₂ Annual Mean	Fareham	An area encompassing residential properties and the Sacred Heart Catholic Church on Portland Street	No	45.3	35.5	Air Quality Action Plan, Gosport and Portland Street Fareham, 2008
Gosport Road AQMA	01/04/2006	NO ₂ Annual Mean	Fareham	An area encompassing the junction of Gosport Road, Redlands Lane and Newgate Lane, and the surrounding area.	No	47.3	31.2	Air Quality Action Plan, Gosport and Portland Street Fareham, 2008

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

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

Fareham and Gosport have taken forward a number of direct measures during the current reporting year of 2016 in pursuit of improving local air quality. Details of all measures completed, in progress or planned are set out in Table 2.2.

More detail on these measures can be found in the 2008 AQAP, the 2016 ASR and previous air quality annual reports that can be viewed at

http://www.fareham.gov.uk/licensing_and_inspections/air_quality/historicalairqualityinfo.aspx .

Fareham and Gosport hope to achieve the following measures over the course of the next year:

- To continue progress with the AQAP, seeking updates from Hampshire County Council on a regular basis;
- To update the AQAP to include the amended boundaries of both the Gosport Road and the Portland Street AQMAs;
- Continual liaison with Hampshire County Council as the highway authority to work together to identify suitable measures to address air quality issues including those in relation to transport and highways, the main source of NO₂ in the Boroughs;
- Depending on planning constraints/conditions, begin work on the Stubbington Bypass to alleviate traffic flows away from the congested roads associated with the current designated AQMAs;
- The continued exploration of sustainable transport links including cycleways to link to the new development of Welborne north of Fareham.

Table 2.2 – Progress on Measures to Improve Air Quality

Measure No.	Measure	EU Category	EU Classification	Organisations involved and Funding Source	Key Performance Indicator	Reduction in Pollutant / Emission from Measure	Progress to Date	Estimated / Actual Completion Date
1	To improve the emission standards of Council fleet vehicles by the use of cleaner and alternative fuelled vehicles	Promoting Low Emission Transport	Company Vehicle Procurement – Prioritising uptake of low emission vehicles	FBC	The number of Euro V refuse vehicles	Reduction of NO ₂ emission	<p>Target: To replace two refuse vehicles each year with new Euro compliant vehicles.</p> <p>The Council now has 12 Euro V and 3 VI Euro refuse vehicles. The housing maintenance team has 5 Euro IV vans and 7 V vans. Street cleaning have 4 Euro IV vans, 4 Euro V van, 2 Euro V sweepers and on 1 Euro VI sweeper. Garden maintenance have 4 Euro IV vans, 2 Euro V van, 1 Euro VI tractor and a Euro V 7.5 tonne beavertail. Both Environmental Health and the Enforcement team have 2 Euro IV vans and the Daedalus team have 2 Euro IV vans and a Euro V 4x4. The Park Rangers have a Euro IV van. Vehicle tracking devices for monitoring speed, harsh braking etc. were installed in all FBC vehicles by March 2014. Eco drive assistants which limit engine RPM, have been fitted to 2 vehicles and a fuel saver pack is now fitted to 6 refuse vehicles.</p>	2016/17
2	To seek a reduction in emissions from the local bus fleet (also see action 14)	Vehicle Fleet Efficiency	Fleet efficiency and recognition schemes	HCC/Bus Operator	The number of Euro III, IV and V vehicles in the local fleet	Reduction of NO ₂ emission	<p>Target: To increase the % of Euro III/IV/V buses from a baseline in 2013 of 33% to 40% in 2015.</p> <p>Completed 2013 – New target for original action 2.</p>	2012/13
2a	To seek a reduction in emissions from the local bus fleet (also see action 14)	Vehicle Fleet Efficiency	Fleet efficiency and recognition schemes	HCC/Bus Operator	The number of Euro III, IV and V vehicles in the local fleet	Reduction of NO ₂ emission	<p>Completed 2014 – New target for original action 2.</p>	2013/14

Measure No.	Measure	EU Category	EU Classification	Organisations involved and Funding Source	Key Performance Indicator	Reduction in Pollutant / Emission from Measure	Progress to Date	Estimated / Actual Completion Date
3	To review the regulation of private hire and hackney carriage emissions and where appropriate, integrate improvements into the taxi licensing regime	Promoting Low Emission Transport	Taxi Licensing Conditions	FBC	(a) Provision of "Switch off your engine" signage in taxi ranks and bus station (b)Articles in the taxi and private hire newsletters on air quality issues	Reduction of NO ₂ emission	Completed. June 2017 -Following recent complaints of dark smoke from taxis, the Licensing team have written to all drivers advising them that an emission test will be required if they are identified as the owner of the offending vehicle.	2012/13
4	To continue to implement the FBC Sustainable Travel Plan (STP)	Promoting Travel Alternatives	Workplace traveling planning	FBC	(a)Annual progress reports (b)Payment of employee cycle mileage allowance in 2009/10 (c)Increase membership of FBC's car share scheme from a 2008/9 baseline of 3% to 6% by 2010 (d)Number of bike loans given to employees 2008-10 (e)Number of employees purchasing discounted First travel card in 2008-10	Reduction of NO ₂ emission	Target: To deliver those measures identified in the Council's STP Action Plan. The Council completed work on phase 1 of improvements to the basement to allow for additional bike storage in the summer of 2014. This involved creating a new access point from the current bike store into the former archives area in the basement, which is fitted with additional storage facilities. This will improve security of employees' bikes and equipment. Phase 2 will consider the installation of showers and lockers in the basement area and a more efficient bike storage solution to allow cyclists to have the facilities to shower, change and store their clothing/equipment in one location. FBC took part in 'My Journey Commuter Challenge' 2014 and 2015, organised by Sustrans and came third both years, in the large organisation category. There has been no Challenge the last two years but a few staff members left their cars at home on Clean Air Day June 2017. Homeworking is still encouraged where appropriate. Two employees took advantage of the normal cycle loan scheme and three took up the salary sacrifice cycle purchase scheme in 2016/17. Over 90 cycling miles were claimed for work journeys and 4 employees purchased season ticket travel loans. The FBC car share scheme still exists with 11 staff registered.	2016/17

Measure No.	Measure	EU Category	EU Classification	Organisations involved and Funding Source	Key Performance Indicator	Reduction in Pollutant / Emission from Measure	Progress to Date	Estimated / Actual Completion Date
							Fareham Community Action continue to implement the Walking to Health scheme in Fareham and Gosport. There is a current scheme improving cycle racks at community centres in Fareham. There is a Council commitment to encourage the use of public transport for Council functions e.g. participants of the Access All Areas scheme receive a free bus pass to use during the summer school holiday events.	
5	To pursue voluntary or VOSA vehicle emission testing in or near the AQMAs	Vehicle Fleet Efficiency	Testing Vehicle Emissions	FBC	To confirm date of event	Reduction of NO ₂ emission	Completed. No action possible at the present time as VOSA does not have mobile resources.	2009/10
6	To seek to reduce emissions from badly maintained vehicles by continuing to promote the smoky diesel hotline	Vehicle Fleet Efficiency	Fleet efficiency and recognition schemes	FBC	To check website link on an annual basis	Reduction of PM ₁₀ emission	Completed.	2012/13
7	Signing of waiting areas/bus station/bus stops/taxi ranks etc instructing drivers to "Turn off engines" when stationary	Traffic Management	Anti-idling enforcement	FBC/Bus Operator	Provision of "Switch off your engines" signage at Fareham Bus Station and at the taxi ranks in	Reduction of NO ₂ emission	Completed. June 2017 - Following receipt of a concern raised by a member of the public, the Council to again investigate the possibility of displaying a sign to remind drivers at the taxi rank to switch off their engines when stationary.	2009/10

Measure No.	Measure	EU Category	EU Classification	Organisations involved and Funding Source	Key Performance Indicator	Reduction in Pollutant / Emission from Measure	Progress to Date	Estimated / Actual Completion Date
8	To examine the feasibility of erecting signs to identify the AQMAs	Public Information	Other	FBC	To erect air quality awareness signs along the A32 Gosport Road Fareham by 2010		<p>Target: To raise awareness of air quality and inform/educate drivers on A32 Gosport Road that they are entering an AQMA.</p> <p>A32 Air quality and traffic congestion messages. HCC appointed two Transport planning assistants in 2014. One was given the task of investigating the situation regarding the lighting columns, and gaining the necessary planning and highway authority permissions to display. He will liaise with FBC, GBC, HCC Major schemes and the ferry company to produce some draft messages, and a budget and action programme.</p> <p>Sept 2014 – Unfortunately one of the two assistants didn't take up their post, so the other has been fully occupied working on the Whitely bus gate consultation and response. Once this project is complete then it is envisaged that the member of staff can start work on the AQAP project.</p> <p>Nov 14 – resourcing remains an issue to take this project forward.</p> <p>Feb 2015 – the remaining assistant has now left and resourcing continues to remain an issue. There is an option to join " My Journey" branding, with 'SolentGo' which HCC are investigating but this would require £10k for a paid piece of work. FBC are willing to help assist in this funding issue.</p> <p>Aug 2015 – Some banners have been provided and erected as part of the ongoing 'My Journey' and 'SolentGo' project. The carry congestion messages and have been funded. It is recommended by HCC that bus signage may be looked at next.</p> <p>Jul 2016 - Ferry posters to be displayed this autumn on routes into Gosport.</p> <p>June 2017 - Fareham Borough Council is working with Friends of the Earth and HCC School Travel Planning team on a project for primary aged school children to design some sustainable travel posters for display in the AQMAs. These should be displayed in September 2017.</p>	2016/17

Measure No.	Measure	EU Category	EU Classification	Organisations involved and Funding Source	Key Performance Indicator	Reduction in Pollutant / Emission from Measure	Progress to Date	Estimated / Actual Completion Date
9	To work in partnership with the Gosport Transport and Sustainability Partnership to identify and assist in the delivery of schemes to reduce road congestion on the A32.	Promoting Travel Alternatives	Other	GBC	(Annual progress against the key measures and timeframes set out in the GTSP (AQAP, 2008).	Reduction of NO ₂ emission	Completion of the key schemes set out in the Gosport Transport and Sustainability Partnership. Air Quality and AQMA impacts to be assessed quantitatively where possible. See action 8.	2016/17
10	To assist the Highway Authority in promoting and implementing those schemes identified within the Highway Authority's "Strategic Access to Gosport (2010-2026)" (STAG) transport study for the Gosport peninsula.	Traffic Management	Strategic highway improvements, Re-prioritising road space away from cars, including Access management, Selective vehicle priority, bus priority, high vehicle occupancy lane	HCC	Annual progress towards the programmed 19 schemes listed in the study.	Reduction of NO ₂ emission	Target: Completion of key schemes set out in the STAG Implementation Plan. Air quality and AQMA impacts to be qualitatively assessed where possible. STAG schemes update:- April 2014 - The Marine Parade cycle schemes are nearing completion. The majority of the works around Lee and car parks are complete. The Salterns promenade scheme is with FBC. September 2014 –the Marine Parade Scheme is essentially complete. HCC further investigating improvements to the other side of Marine Parade by the Café using similar palette. There has been some local criticism of the surface treatment at Salterns, decisions led by budget, environment and Councillors wishes. Update Nov 2014 – Marine Parade schemes are complete and have been generally well received. Reviews of the northern side of Marine Parade are proposed for summer 2015. Salterns and onward sections of NCN2 remain an aspiration to pursue when resources permit. April 2014 - A32 Newgate Lane (northern section) Clearance and utility works have started early 2014. September 2014 – the construction works have begun.	2016/17

Measure No.	Measure	EU Category	EU Classification	Organisations involved and Funding Source	Key Performance Indicator	Reduction in Pollutant / Emission from Measure	Progress to Date	Estimated / Actual Completion Date
							<p>November 2014 – the works are progressing well, estimated finish Spring 2015.</p> <p>April 2015 Newgate Lane works are on target and completion expected end of May.</p> <p>August 2015 – Newgate Lane north works to be finished August 2015. Newgate Lane is one of three principal routes giving access to and from the Gosport peninsula and this scheme aims to improve capacity on this part of the Newgate Lane corridor because it has the highest traffic flows. Improving access towards the Solent Enterprise Zone at the former Daedalus site is also a key objective and the intention is that this scheme will be complemented by further improvements to the southern section of Newgate Lane and Peel Common roundabout. The scheme therefore aims to improve journey time reliability by increasing road capacity for drivers and improving accessibility for cyclists and pedestrians.</p> <p>Jan 2016 - Newgate Lane North works complete and works progressing on Peel Common roundabout. Improvement works to the Peel Common Roundabout started August 2015, likely to last 8 months. The works aim to improve the management of traffic at this busy roundabout through the provision of traffic lights and additional traffic lanes as well as improved facilities for pedestrians and cyclists.</p> <p>July 16 - Peel Common roundabout works essentially complete.</p> <p>Further public consultations on the Newgate Lane (south) and Stubbington bypass proposals are proposed in the summer of 2014. November 2014; Executive decisions available on HCC website, scheme anticipations remain at 2017/18.</p> <p>August 2015 – planning applications submitted for both schemes. The £30 million Stubbington bypass scheme will divert traffic around the outskirts of Stubbington and reduce journey time and peak hour congestion onto and off the Gosport peninsula.</p> <p>Nov 2015 - planning permission given for both schemes.</p> <p>July 16 - Newgate L and south works will start to proceed soon. HCC continues to progress the Stubbington Bypass. HCC has announced that it will provide funding of £8.2m towards the bypass. The remaining funding should come from the Government and FBC hopes to hear later this year if this is successful. The £34.2m Stubbington Bypass is an</p>	

Measure No.	Measure	EU Category	EU Classification	Organisations involved and Funding Source	Key Performance Indicator	Reduction in Pollutant / Emission from Measure	Progress to Date	Estimated / Actual Completion Date
							<p>important road scheme to ease traffic congestion on the A32 and improve air quality in the AQMAs, especially as Daedalus grows and becomes even more successful.</p> <p>HCC has commissioned a cycle route investigation from Fareham to the proposed site of Welborne, and onwards to Wickham. It is anticipated that this route will follow the current cycle network to Broad cut, with off road verge conversion into the Industrial Estate, and improvements to the existing Bridleway leading onto Pook Lane. Temporary measures will be put in place to aid crossing over the A32 pending any future changes to Junction 10. An informing design and cost exercise will be undertaken on improvement and conversion of the footway on the western side of the A32 to shared use through to Wickham.</p> <p>April 2014 – preliminary designs have been complete and outline costs are around £240k. The report has highlighted issues of land ownership to resolve. April 2015 – no further progress. August 2015 – HCC to restart the Broadcut shared use implementation.</p> <p>Jan 2016 - project ongoing.</p> <p>HCC and FBC officers will also be undertaking a desktop study to identify off-road routes to connect both of the residential and employment centres of Whiteley and the proposed site of Welborne. It is anticipated that the routes will consist mainly of improved bridleways, and provide a shorter, realistic and sustainable connection between the two centres. The outcomes of this investigation will be used to inform Welborne Master planning, and future HCC schemes. April 2014 - Preliminary investigations demonstrated that this is difficult to achieve, though some fore planning has been positive. The railway and river present significant difficulties, and limit connection options. Further discussions to be held with Development planning and Countryside service which will focus on Mayles Lane, and Tapnag where the Whiteley Bridleway emerges. September 2014 - Investigations and planning on-going. November 2014 – this remains on ongoing piece of work with complex and sensitive land issues.</p>	

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							<p>HCC has commissioned a route and junctions transport study of the A27 corridor from Windhover to Delme. As part of these investigations a supplementary report is being drafted that considers the needs of on-road and off-road cyclists, plus enhancing connections to existing cycle networks and key destinations.</p> <p>September 2014 - Investigations and planning on-going.</p> <p>August 2015 – A27 and junction proposals are out for consultation.</p> <p>January 16 - A27 works have started around Gudge Heath Lane and St Margarets roundabout.</p> <p>Jul 16 - A27 works continue. St Margarets roundabout is now signalised and operational. Major works related to dualling the A27 and improvements to Gudge Heath Lane and Station roundabout continue.</p> <p>Update June 2017 - Major works related to dualling the A27 and improvements to Gudge Heath Lane and Station roundabout continue and are expected to finish late summer 2017. Peel Common Roundabout works complete. Newgate Lane scheduled to commence July 2017 and completion is expected in summer 2018. The County Council continues to progress the Stubbington Bypass.</p>	
11	To implement those ITS improvements within FBC as detailed in the LTP2 to reduce congestion and improve air quality in the AQMAs	Traffic Management	Strategic highway improvements, Re-prioritising road space away from cars, including Access management, Selective vehicle priority, bus priority, high vehicle occupancy lane	HCC	As for action 10	Reduction of NO ₂ emission	Deleted – ITS improvements are STAG scheme 5 so will be combined with Action 10	2011/12
12	To undertake appropriate improvements to the Quay Street	Traffic Management	Strategic highway improvements, Re-prioritising road space away from cars, including Access	HCC/FBC/ Developer	As for action 10	Reduction of NO ₂ emission	Completed.	2011/12

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	roundabout in conjunction with the nearby retail development and negotiate with the developer a financial contribution for future air quality monitoring in the area		management, Selective vehicle priority, bus priority, high vehicle occupancy lane					
13	To develop the climbing lanes between junctions 11 and 12 of the M27	Traffic Management	Strategic highway improvements, Re-prioritising road space away from cars, including Access management, Selective vehicle priority, bus priority, high vehicle occupancy lane	HA		Reduction of NO ₂ emission	Completed.	2008

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14	Develop a Quality Bus Partnership for the A32 including a reduction in emissions from local buses	Transport Planning and Infrastructure	Bus route improvements	HCC/Bus Operator	HCC and the local bus company to sign a QBP for the A32 corridor detailing targets for the age of buses, emissions, journey times and ITS by 2010	Reduction of NO ₂ emission	Completed – Target achieved as bus patronage rose by 11% between 2003/04 and 2009/10. Replaced by new action 19a.	2010/11
15	Provide a bus/rail interchange facility at Fareham rail station	Transport Planning and Infrastructure	Public transport improvements- interchanges stations and services	HCC/TfSH	Provision of a transport interchange at Fareham rail station		<p>Target: HCC to develop a transport interchange at Fareham rail station.</p> <p>The Western Way bus lane was shortened in September 2013 to ease traffic flow. This had some success and complaints about the bus lane have reduced. Further changes were completed in November 2014 utilising the verge space and returned the original two lanes to normal use. The Western Road Bus gate opened in September 2014. This allows direct access onto the A27 from the bus station for westbound services.</p> <p>August 2015 - The bus/rail interchange facility at the rail station is at the design option stage and potential for some construction 2015/16. Discussions continue with all stakeholders and funding streams are being sought by HCC.</p> <p>July 2016 - Improvements to the bus rail interchange announced along with SWT improvements to the station forecourt. Works will run in conjunction with Station roundabout upgrades. A27 Bishopsfield Road to Station roundabout accommodation works to realign the highway boundary and divert utilities between Blackbrook Avenue and Gudge Heath Lane commenced on 16/05/16. Utility works on Station roundabout to accommodate the carriageway widening in this area are underway. Other largely off carriageway works are also underway.</p> <p>June 17 –Scheme for Fareham Rail Station & Eclipse interchange improvements – new passenger infrastructure,</p>	2014/2020

Measure No.	Measure	EU Category	EU Classification	Organisations involved and Funding Source	Key Performance Indicator	Reduction in Pollutant / Emission from Measure	Progress to Date	Estimated / Actual Completion Date
							more room for bus stops, urban realm improvements, bus lane through roundabout towards West Street, plus Gudge Heath Lane/Redlands Lane to rail station highways improvement package (to improve all traffic flow). Value £6.6m, majority of scheme now complete and on time and budget. Works continue and are expected to complete late summer 2017. A new cycle hub delivering 136 two tiered cycle spaces with enhanced CCTV for cycle security is now open as are the new steps to the station which feature a cycle gully. HCC is consulting on the potential installation of an all surface pedestrian crossing, lining the north and south of The Avenue adjacent to the line if the underpass, connecting the westbound and eastbound bus stops.	
16	To provide a suitable alternative to the light rapid transit system linking Fareham, Gosport and Portsmouth	Promoting Travel Alternatives	Other	HCC/TfSH	Annual progress against the key measures and timeframes set out for the BRT phases	Reduction of NO ₂ emission	Target: To build and open the BRT system (HCC to develop the BRT phase 1 route between Gosport and Fareham by 2011/12). Action completed as agreed by the steering group at their meeting on 10 September 2013. The Wellborne planning application was submitted to the Council in April 2017.	2011/12
17	To monitor the progress of providing real time bus information at bus stops in Fareham and Gosport	Public Information	Other	HCC	Annual reporting progress in line with meeting the target		Target: To have 100% RTI (Real Time Information) when the BRT opens. All 14 sites along Phase 1 of the BRT to be fitted with RTI. Completed. This target was met with the opening of the Eclipse busway on Sunday 22nd April 2012. See new action 17a	2011/12
17a	To monitor the progress of providing real time bus information at bus stops in	Public Information	Other	HCC	Annual reporting progress in line with meeting the target		Target: To have 100% RTI (Real Time Information) when the BRT opens. All 14 sites along Phase 1 of the BRT to be fitted with RTI. New target agreed at the 16 April 2013 AQAP meeting. Bus Information Departure Screens have been provided at both Fareham and Gosport bus station and are now	2015/16

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	Fareham and Gosport						operational. The Avenue bus stop on Redlands Lane has been fitted with an RTI screen in an Eclipse style shelter for the benefit of students attending Fareham College. RNIB talking fobs are being sent out to blind and partially sighted bus users. Since the summer of 2014, LSTF funding has been used to upgrade bus stops off the Eclipse busway along the routes of the E1 & E2 with Eclipse style shelters, CCTV and Real Time Passenger Information. July 16 - 8 shelters have been upgrade reflecting funding available. 8 are complete with RTI operational and 3 are prepared ready to fit RTI very soon. A further 3 are hold due to insufficient funding to bring up to Eclipse standards. June 2017 - RTI system – all implemented now on corridor. No further planned investment.	
18	To provide bus priority measures as part of the Vision for West Street	Traffic Management	Strategic highway improvements, Re-prioritising road space away from cars, including Access management, Selective vehicle priority, bus priority, high vehicle occupancy lane	TfSH	Reported progress of feasibility traffic modelling and air quality impact review. Subsequent indicators for project implementation to be determined post traffic modelling		Target: Undertake traffic modelling to establish feasibility of scheme, qualifying air quality impacts where possible. The Western Way bus lane was shortened in September 2013 to ease traffic flow. This had some success and complaints about the bus lane reduced. Further changes were completed in November 2014 utilising the verge space and returned the original two lanes to normal use. The Western Road Bus gate opened in September 2014. This allows direct access onto the A27 from the bus station for westbound services. August 2015 - The bus/rail interchange facility at the rail station is at the design option stage and potential for some construction 2015/16. Discussions continue with all stakeholders and funding streams are being sought by HCC. July 16 - Improvements to the bus rail interchange announced along with SWT improvements to the station forecourt. Works will run in conjunction with Station roundabout upgrades. June 17 –Scheme for Fareham Rail Station & Eclipse interchange improvements – new passenger infrastructure, more room for bus stops, urban realm improvements, bus lane through roundabout towards West Street, plus Gudge Heath Lane/Redlands Lane to rail station highways improvement package (to improve all traffic flow). Value £6.6m, majority of scheme now complete and on time and budget. Works continue and are expected to complete late summer 2017. A new cycle hub delivering 136 two tiered	2016/17

Measure No.	Measure	EU Category	EU Classification	Organisations involved and Funding Source	Key Performance Indicator	Reduction in Pollutant / Emission from Measure	Progress to Date	Estimated / Actual Completion Date
							cycle spaces with enhanced CCTV for cycle security is now open as are the new steps to the station which feature a cycle gully. HCC is consulting on the potential installation of an all surface pedestrian crossing, lining the north and south of The Avenue adjacent to the line if the underpass, connecting the westbound and eastbound bus stops.	
19	To work with local bus operators to provide improved services for people working in Whiteley via the now complete Yew Tree Drive bus link	Transport Planning and Infrastructure	Bus route improvements	HCC	Improved services under development but implementation depends on external funding which has yet to be obtained		Completed. HCC proposed new action in 19a below.	2009/10
19a	Increase numbers of people using local bus services	Transport Planning and Infrastructure	Other	HCC/First	Annual number of passenger trips using BRT services	Reduction of NO ₂ emission	<p>Target: Increase annual bus patronage on BRT services operating between Gosport bus station and Fareham bus station by 10% after one year and an aggregate 15% after two years.</p> <p>Completed</p> <p>July 2016 - The two Eclipse services, E1 and E2, are carrying 65% more passengers than the two services they replaced (82 & 86). There has been an overall increase in bus passengers of over 10% in Fareham and Gosport since Eclipse started. Between April 2012 and April 2016, more than 7.8 million passenger journeys have been recorded on the Eclipse services.</p> <p>June 2017 - Annual passenger numbers showed a year on year increase approx. 2.3m pax journeys p.a. on E1 & E2 (2016/17). Over 1,000 passenger interviews indicate that 14% of Eclipse passengers previously travelled by car and 24% of</p>	2011/13

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							passengers had a car available for their journey but chose to use Eclipse instead. New Eclipse fleet launched November 2016. Latest emissions standards, more fuel efficient than previous fleet. Bidding to DfT for 1km extension of busway south to Rowner Road – June 2017. Bidding for circa £7m. Decision expected Autumn 2017 and would be delivered 2018/19 and 2019/20. Contactless ticketing coming summer 2017 following £0.4million investment by HCC/First. Designed to reduce boarding times, cut congestion and thus emissions and make bus travel more attractive.	
20	To continue to subsidise bus travel beyond the statutory minimum to further encourage bus usage	Transport Planning and Infrastructure	Other	FBC	To provide statutory responsibility for bus subsidies	Reduction of NO ₂ emission	Completed.	2009/10
21	To review progress in respect of the FBC Cycle Strategy 2005-11 and the LTP2 and implement those measures likely to have an impact on air quality in the AQMAs	Transport Planning and Infrastructure	Cycle network	FBC/HCC	(a)To assess progress of the Fareham Cycle Strategy Action Plan (b)To provide specific information on the Council's website of cycle routes in and around the AQMAs		Target: The Cycling Action Plan 2005-11, being in its final year of implementation, is to be reviewed. New targets and indicators will be developed as part of the review. Additionally, the Town Access Plan (TAC) is also being developed through the LDF. Relevant cycling measures from the TAP will also be detailed in future AQAP Reports. Fareham has completed a Green Infrastructure Strategy (available to view on the Council's website) which highlights potential cycle routes which should be pursued in Fareham, many of which are actively being investigated by HCC. Some of these routes are likely to be achieved in the short term, whilst other are long term options or in some cases, purely aspirational. A scoping document for the new Cycle Strategy has been produced. The HCC Cycling Strategy 2015 was open for public consultation in May 2015 for over 2 months. The strategy aims to cover a wide range of topics including tourism, health and wellbeing, recreation, sport and infrastructure. The	2016/17

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							<p>strategy is high level in nature with the intention that it links the County Council's broader policies to local strategies, delivery plans and the planning and implementation of cycling measures with local partners. This will reflect and strengthen the importance of any existing cycling and active travel strategies developed by local authorities in the County. This strategy was approved on 15 September 2015. This document will inform the preparation of a Cycle Strategy for FBC. FBC is liaising with HCC on the development of a cycle strategy for the programmed A27 improvement schemes.</p> <p>Feb 16 - A revised Cycle Strategy is currently being prepared as part of a package of reviews to inform the future Local Plan. Work is being undertaken on aspects of the A27 improvement scheme, with duelling sections due to commence mid-2016. The planned works incorporate improved cycling and pedestrian facilities.</p> <p>July 16 - The works to the A27 improvement scheme are underway, most notably between Fareham Station roundabout and Gudge Heath Lane. Works are to continue through to mid-2017. Cyclists continue to use the Eclipse busway.</p> <p>June 17 - The works to Station Roundabout and Gudgeheath Lane are due for completion in late summer 2017. The Cycle strategy is being revised, however as an Active Travel Strategy, which is expected to be complete in October 2017. Cycling UK are looking with PCC to set up a number of cycling clubs in the area this year. Bike It scheme working with some Gosport Schools. Several community centres in Fareham have asked for increased capacity in their bike rack areas.</p>	
22	To continue to promote public transport and alternative travel arrangements such as the Gosport Ferry and local bus services on the	Promoting Low Emission Transport	Other	FBC	To ensure the details of the Gosport Ferry are maintained on the FBC website		<p>Completed and still active.</p> <p>FBC took part in the 'My Journey Commuter Challenge' in May 2014 and 2015 and came third in the large size, organisation category. There was no challenge in 2016 or 2017. Several members of staff left their cars at home for Clean Air Day in June 2017. Young people attending the Access All Area events in Fareham are provided with a free bus pass to get to events quickly and safely.</p> <p>Possible new action: The Council to seek a commitment from attendees to meetings at the Civic Office/Town Hall,</p>	2008/09

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	FBC website						events organised by the Council or staff attending training/meetings elsewhere, to use public transport wherever possible.	
23	Promote the development and implementation of work travel plans amongst companies that use the roads in and around the AQMAs particularly through the use and enforcement of planning conditions	Promoting Travel Alternatives	Workplace Travel Planning	FBC/HCC	Indicators to be developed once success of LSTF bid is known. LSTF is now the primary resource mechanism for travel planning projects	Reduction of NO ₂ emission	Action completed as agreed by the steering group at their meeting on 10 September 2013.	2012/13
24	To continue to work with schools in Fareham close to the AQMAs for the development, implementation and the annual review of School Travel Plans	Promoting Travel Alternatives	School Travel Plans	HCC	Indicators to be developed once success of LSTF bid is known. LSTF is now the primary resource mechanism for travel planning projects		Action completed as agreed by the steering group at their meeting on 10 Sept. June 2017 - The Council is talking to HCC School Travel Planning group following recent work in Winchester schools and a concern of idling engines at a school in Fareham during the recent hot weather. The work may include locating diffusion tubes for nitrogen dioxide at several schools in Fareham and Gosport. The school travel planning team are becoming more involved with working with schools and the local authorities on the subject of trying to improve air quality around the schools. There is an air quality section on their My Journey website. Fareham Borough Council is working with Friends of the Earth and HCC School Travel Planning team on a project for	2011/12

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							<p>primary aged school children to design some sustainable travel posters for display in the AQMAs. These should be displayed in September 2017.</p> <p>This year there is an air quality theme to the Junior Road Safety Officers scheme in Hampshire with emphasis on mapping environmentally cleaner routes to school.</p> <p>HCC are supporting the International Walk to School Month in October 2017 with an air quality theme.</p> <p>The HCC My Journey team are hoping to have a stall at the 100th Anniversary of the Daedalus airfield. The three year funding for the Living Streets scheme in Hampshire is centred on Fareham and Gosport in 2017.</p>	
25	To implement the Town Access Plan proposals where they have an impact on air quality in the AQMAs	Traffic Management	Other	HCC/FBC	(a)FBC to adopt HCC Town Access Plan (b)Accessibility target to be developed for Fareham	Reduction of NO ₂ emission	<p>Target: The Town Access Plan (TAP) is also being developed through the LDF. Relevant cycling measures from the TAP will also be detailed in future Air Quality Action Plan Progress Reports.</p> <p>Hampshire County Council led on the development of the 2012 Town Access Plan for Fareham, working with Fareham Borough Council and other interested groups. This plan will help to improve access to facilities and services, such as shops and schools, within the town. It will identify a list of schemes aimed at improving walking and cycling, public transport and road safety in Fareham, helping people access and move around the town more easily both now and in the future. A number of schemes highlighted in the plan have been re-emphasised through the Green Infrastructure Strategy.</p> <p>July 16 - no further update</p> <p>June 17 – The Active Travel Strategy will look at the measures identified within the TAP and other strategic documents from the Highway Authority. The current proposed schemes are to be prioritised and refined to ensure suitability, viability and potential delivery within the FBC Plan Period to 2036.</p>	2016/17
26	To continue to inspect premises and take	Environmental Permits	Other	FBC	DEFRA return		<p>Target: To ensure that premises are inspected in accordance with the risk assessment regime.</p> <p>All due inspections undertaken in 2014/15. Return submitted to Defra on time</p>	2016/2017

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	appropriate enforcement action in respect of the Environmental Permit risk assessment regime							
27	To use Environmental Permit inspections to encourage the provision of alternative fuels at petrol stations forecourts	Environmental Permits	Measures to reduce pollution through IPPC Permits going beyond BAT	FBC	Number for alternative fuelling pumps and evidence of continued Council encouragement.0	Reduction of NO ₂ emission	<p>Target: Work towards maximising local uptake of alternative fuels, having leafleted all petrol stations.</p> <p>Original target completed.</p> <p>Two electric vehicle charging points installed in the surface car park in Fareham in November 2014 as part of a Hampshire wide scheme.</p> <p>Possible new actions: Alternative fuel campaign with reference to ESS; Eco driver training for all essential car users; Low emission pool cars for staff and residents; Pool bikes for staff.</p>	2012/13
28	Promote the use of planning policies, alongside other planning and transport measures, to promote sustainable transport choices and reduce reliance on the car	Policy Guidance and Development Control	Air Quality Planning and Policy Guidance	FBC/GBC	Examples of where FBC requires higher provision of cycle facilities or lower car parking facilities than the HCC standards for new developments.	Reduction of NO ₂ emission	<p>Target: Implementation of the relevant policies set out in the LDF to influence local and regional air quality.</p> <p>The Welborne planning application was submitted to the Council in April 2017.</p> <p>June 17 – FBC is in the process of producing a revised Local Plan (LP). The LP is to feature policies that encourage sustainable and active travel modes of transport and the draft currently also looks at the effects of road transport on Air Pollution and seeks to implement policy on how this can be mitigated and reduced where possible, including the use of electric vehicles and charging points in new developments</p>	2016/17
29	To ensure that the new LDF incorporates planning policy	Policy Guidance and Development Control	Air Quality Planning and Policy Guidance	FBC	Examples of LDF provisions related to air quality		<p>Target: Member of the pollution team to continue to attend the LDF officers' meetings.</p> <p>See 28 above. Ongoing with new Core Strategy policies now</p>	2012/13

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	that will not adversely impact on air quality but furthermore enhances air quality where possible						being adhered to.	
30	Regulatory Services will continue to work with the Development Control section to ensure that air quality is taken into account in the planning development process	Policy Guidance and Development Control	Air Quality Planning and Policy Guidance	FBC	Weekly bulletins, listing planning applications issued to Regulatory Services.		<p>Target: Structured communication between Regulatory Services and Development Control on plans potentially affecting air quality.</p> <p>July 2016 - Work is ongoing. Examples include the development work at Daedalus, Longfield Avenue, Stubbington bypass and Welborne, the new development north of Fareham. Daedalus is now named Solent Airport at Daedalus. The small airport is aimed at small aircraft for businesses and leisure visitors. The site has been split into two distinct business parks; new roads have been laid on site to provide for easier access throughout the site including improved pedestrian access to the seafront; the Fareham Innovation Centre has achieved 100% occupancy less than one year after opening and a second Centre is planned for 2018; other new buildings are planned and likely to result in 800 new jobs on site; 1100 students now attend CEMAST, an new engineering & manufacturing skills college; NATS are to build a new radar training facility on site and the National Grid are planning a major new energy infrastructure project, known as IFA2, linking the UK's electricity transmission network to France and the converter station is proposed to be located at Daedalus. Diffusion tubes were recently located at an ex-office development close to the M27 which is now converted to residential development. The NO₂ air quality objective was not exceeded. Several residents in Fareham and Gosport have asked for diffusion tubes in the last year but none of these so far have led to more detailed assessments. The work undertaken by FBC on behalf of HCC at the Yew Tree Drive bus gate did not show any exceedences of the NO₂ air quality objective at relevant locations for human exposure. In February 2016, the Environmental Health department</p>	2016/17

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							<p>contributed to Fareham Borough Council's Local Information Requirements for planning applications in respect of the need for an air quality assessment.</p> <p>June 2017 - Environmental Health have been working with planning on air quality and the local plan, the active travel strategy and the transport strategy. In Oct 2016 the HCC Director of Public Health published the Hampshire Planning and Public Health Position Statement detailing the actions that the County and District Councils in Hampshire can take through the planning system, to improve the health and wellbeing of residents; within the revision of the GBC Local Plan, due to be published in 2018, it is hoped that a health related planning policy statement is included in the final version.</p>	
31	To review the FBC parking strategy and implement any measures that may result in reduced congestion in the AQMAs	Traffic Management	Other	FBC	Number and location of such schemes in 2009/10	Reduction of NO ₂ emission	<p>Action completed as agreed by the steering group at their meeting on 10 Sept 2013.</p> <p>A revised Non-Residential Car and Cycling Parking Standards SPD was approved in September 2015. This will apply to new developments in We!borne as well as sites in the rest of the Borough. This follows the County Council's withdrawal of its own standards which formed the basis of previous guidance by FBC, and recent changes in national planning policy which encourage consideration of local circumstances when setting standards.</p>	2012/13
32	To continue to review and consult on air quality in the Borough in line with statutory requirements	Policy Guidance and Development Control	Other policy	FBC	(a)To submit the further assessment of the AQMA on Portland Street and a USA by April 2009 (b)To maintain air quality reports on the FBC website		<p>Target: to ensure compliance with the DEFRA timetable.</p> <p>July 2016 - USA 2015 approved by Defra; detailed assessment required for a small area of land just outside the existing Gosport Road AQMA. AQAP progress report 2015 compiled in-house and approved by Defra. The AQMAs remain declared as relevant diffusion tubes on houses show exceedances of the annual air quality objective for NO₂. Air quality report to the FBC PPPDR Panel in March 2016. All reports on the FBC website.</p> <p>June 2017 - Air quality report to the FBC PPPDR Panel in March 2017; 2016 Annual Status Report and detailed assessment approved by Defra and existing AQMAs to be extended. A report to extend these AQMAs should go to the</p>	2016/17

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							Executive in September 2017. Relevant residents and businesses will be informed. ASR 2016 on the FBC website. FBC listed in the draft National air quality plan for tackling nitrogen dioxide in May 2017. FBC responded to the associated consultation.	
33	To enhance the nitrogen dioxide monitoring network by providing continuous nitrogen dioxide monitors in the AQMAs	Policy Guidance and Development Control	Other policy	FBC	Outcomes of the LAQM reporting cc process using diffusion tube and continuous monitoring data from the Gosport Road and possibly Portland Street		<p>Completed.</p> <p>The number of NO₂ diffusion tubes reduced to around 30 in Fareham and 11 in Gosport; resources centred on those tubes over 25 ug/m³. New three-year air quality monitoring partnership contract signed in April 2016 for three monitoring sites, two in Fareham and one in Gosport. Funding still available for AQAP work eg A32 banners.</p> <p>June 2017 - both Councils sense a rise in calls to the office regarding poor air quality and several diffusion tubes have been installed at facades in response e.g. concerns regarding idling engines in the hot weather, at traffic lights controlling roadworks and in a hospital car park.</p>	2011/12
34	To continue to work in partnership with neighbouring authorities and others for the control of air pollution and continued improvement of air quality e.g. to attend HIOW air quality group	Policy Guidance and Development Control	Other policy	FBC	Minutes of meetings		<p>Target: The HIOW air quality officers' group to meet twice a year as a sub group of the HIOW Environmental Control Advisory Committee (ECAC).</p> <p>HIOW air quality group met in September 2016 and in June 2017. The group responded to the draft National air quality plan for tackling nitrogen dioxide consultation. In October 2015, Environmental Health met with the Public Health Team at Hampshire County Council in respect of air quality issues and this will continue particularly in respect of PM_{2.5}. We are meeting again in June 2017 together with public health colleagues from FBC and GBC and the school travel planning group from HCC. Environmental Health continues to receive updates in respect of road network and public transport improvements from HCC even though the steering group no longer meets.</p>	2016/17

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35	To monitor the performance of the AQAP and review actions regard to the air quality objectives and implement additional actions where necessary	Policy Guidance and Development Control	Other policy	FBC	Outcomes of the annual LAQM reporting of annual mean improvements. Also set out a position statement within the annual action plan progress report on any required changes to the existing measures and the need for further actions.	Reduction of NO ₂ emission	<p>Target: To meet the AQO annual mean for NO₂ and ultimately revoke the AQMA for both locations.</p> <p>July 2016 - In April 2015, the AQAP steering group took the decision not to meet again on a formal, regular basis. Funding still available for AQAP work eg sustainable travel banners on the A32. Current work includes the continued monitoring of air quality in the AQMAs. A detailed assessment is under way of an area just outside the current Gosport Road AQMA. The improvement works to Newgate Lane, the Peel Common roundabout and the Longfield Avenue roundabout may all have an effect on the AQMAs. The Stubbington bypass plans will also be of great interest to the air quality in these areas. There is continued use of electric charging points in a Fareham car park, installed in 2014.</p> <p>June 2017 - Annual average concentration for nitrogen dioxide at the Gosport Road monitor: 33 ug/m³ in 2008; 36 ug/m³ in 2009; 42 ug/m³ for 2010; 33ug/m³ in 2011;35 ug/m³ in 2012; 34 ug/m³ in 2013; 32 ug/m³ in 2014; 28 ug/m³ in 2015 and 27.7 ug/m³ in 2016. The annual mean for Portland Street for 2013, 34.6 ug/m³; 2014, 40.4 ug/m³;2015, 37 ug/m³ and 38 ug/m³ in 2016. The annual mean for Tichbourne Way Gosport in 2015 was 27 ug/m³ and 25.9 ug/m³ in 2016.</p>	Annual progress reports to Defra
36	To continue to educate and enforce in respect of domestic, agricultural and industrial smoke nuisances and dark/black smoke	Public Information	Other	FBC	(a)Customer service centre to continue to respond automatically to complaints in the first instance where complaint letters are appropriate (b)Pollution officers to react to more urgent complaints 24 hours a day 365 days a year.	Reduction of PM ₁₀ emission	<p>Target: To respond to complaints of smoke and odour.</p> <p>Completed but active. Around 50 complaints a year are received on this subject. Completed but active. Around 50 complaints a year are received on this subject.</p>	2012/13

Measure No.	Measure	EU Category	EU Classification	Organisations involved and Funding Source	Key Performance Indicator	Reduction in Pollutant / Emission from Measure	Progress to Date	Estimated / Actual Completion Date
37	To monitor as a Council data in respect of NI 194 and implement actions to achieve target set	Policy Guidance and Development Control	Other policy	FBC	Whilst NIs 185 and 194 are no to be formally reported, the Council is still to report NI 185.0		Target: Whilst NIs 185 and 194 are no longer to be formally reported, the Council is still open to report NI 185. To reduce the Council's target by 20% by 2020 from a 2012 baseline.	2016/17
38	To continue to place air quality reports on the FBC website	Public Information	Via the Internet	FBC	Annually (or as required) e-mail stakeholder bodies send a message each time there is a website report update		Target: To ensure that all appropriate bodies are kept well aware of LAQM progress. The Annual Status Report and detailed assessment 2016 are both available for viewing on the FBC website.	2016/17
39	To investigate the most effective method of disseminating air quality information to the public and assess the feasibility of employing this method for FBC	Public Information	Other	FBC	Annual review of information dissemination options in line with UK best practice and discussions with neighbouring authorities		Target: To raise awareness of local and national air quality matters. Link to all three monitoring stations in FBC and BGC on the FBC website. Possible new actions:- Local air quality alerts similar to SCC.	2016/17

Measure No.	Measure	EU Category	EU Classification	Organisations involved and Funding Source	Key Performance Indicator	Reduction in Pollutant / Emission from Measure	Progress to Date	Estimated / Actual Completion Date
40	To promote awareness via the FBC website of other air quality information web sites	Public Information	Via the Internet	FBC	Annual review of the Council website content in line with accepted UK best practice		Target: To provide an up to date, useful and informative public resource for air quality and to raise awareness of local and national air quality matters. Ongoing process of updating FBC website.	2016/17
41	Support locally, national campaigns to raise awareness of air quality, alternative transport choices etc	Promoting Travel Alternatives	Promotion of cycling	FBC	Evidence of this action		Target: To support where appropriate, a national air quality campaign at least once a year via the FBC website. There was no 'My Journey Commuter Challenge' in 2016 or 2017 but some members of staff left their cars at home for Clean Air Day June 2017. Possible new actions:- Air quality day; Bike campaign; Radio campaign; CAT presentation	2016/17
42	To promote the use of alternative fuels eg LPG, hybrid	Vehicle Fleet Efficiency	Vehicle Retrofitting programmes	FBC	(a)To provide petrol station operators during EP inspections with a leaflet regarding the benefits of providing alternative fuels (b)To provide appropriate information on the FBC website.	Reduction of NO ² emission	Now combined with Action 27. Deleted. Two electric charging points installed in Fareham car park in July 2014. Possible new actions:- Alternative fuel campaign; Eco driver training for all essential car users; Low emission pool cars for staff and Residents.	2011/12

Measure No.	Measure	EU Category	EU Classification	Organisations involved and Funding Source	Key Performance Indicator	Reduction in Pollutant / Emission from Measure	Progress to Date	Estimated / Actual Completion Date
43	To produce a leaflet on the AQAP and distribute to libraries, GP surgeries etc.	Public Information	Via leaflets	FBC	Identifying, implementing and reporting projects to be undertaken by the Council and relevant stakeholders.		Target: To raise awareness and improve understanding of the relationship between poor air quality and ill health. Completed.	2011/12
44	To liaise closely with the PCT in respect of identifying any linkage between areas with poor air quality and ill health	Policy Guidance and Development Control	Other policy	FBC/HCC/ PCT	To liaise with the PCT before April 2009 to further this aim		Deleted as now covered with Action 43. October 2015 - FBC liaison with the Public Health Team at Hampshire County Council. June 2017 - FBC liaison with the Public Health Team at Hampshire County Council, public health colleagues from FBC and GBC and the HCC school travel planning team. Actions include the use of the MECC (Making Every Contact Count) approach to conversations with clients in GBC; the evolution of the HCC school travel planning team to provide a more bespoke service to schools and to expand into work travel planning e.g. work for FBC on the Daedalus site including the CEMAST college and the Innovation Centre; Bike It scheme working with some Gosport Schools; 'My Journey' leaflet on How could you travel to school which is given out to all Year R and Year 3 parents; the representative of the Director of Public Health will seek to ensure that the HCC Joint Strategic Needs Assessment (JSNA), which is being reviewed, includes a reference to general air quality issues similar to the Public Health Strategy; the public health lead for physical activity in HCC is working on the Inactive to Active pilot in Gosport; the HCC public health team is meeting with the Walking for Health scheme (Fareham & Gosport) organisers in July 2017 to see how the scheme can be developed further; the 3 year Living Streets project in Hampshire is to be focussed on Fareham & Gosport in 2017.	2009/10
45	To continue to promote energy awareness and efficiency in the Borough	Promoting Low Emission Transport	Other Policy	FBC	To arrange to work in partnership with the Environment Centre as a		Deleted.	2011/12

Measure No.	Measure	EU Category	EU Classification	Organisations involved and Funding Source	Key Performance Indicator	Reduction in Pollutant / Emission from Measure	Progress to Date	Estimated / Actual Completion Date
					referral agent for the Fareham Home Energy Insulation Scheme 2008/9			
46	To reduce car dependency and facilitate transport choice by encouraging alternatives to the car alongside changes in working arrangements through the Smarter Choices regime of the LTP2	Promoting Travel Alternatives	Encourage/facilitate home-working	HCC	Indicators to be developed once success of LSTF bid known. LSTF is now the primary resource mechanism for travel planning projects. Examples such as LTP3 policy objectives such as 7,10,11 &12.	Reduction of NO ² emission	Target: Target to be developed once success of LSTF bid is known. LSTF is now the primary resource mechanism for travel planning projects. Examples such as LTP3 policy objectives such as 7,10,11 &12. Action completed as agreed by the steering group at their meeting on 10 Sept 2013.	2012/13
47	To continue to promote cycling and walking as healthier alternatives to the car on the FBC website	Promoting Travel Alternatives	Promotion of walking and cycling	FBC			Deleted as now covered with Action 46. HCC's new draft walking strategy approved 2016	2011/12

Measure No.	Measure	EU Category	EU Classification	Organisations involved and Funding Source	Key Performance Indicator	Reduction in Pollutant / Emission from Measure	Progress to Date	Estimated / Actual Completion Date
48	To implement Environmental Sustainability Strategy (ESS) and ensure that NO ₂ is considered in the development of the FBC Sustainability Strategy	Policy Guidance and Development Control	Other policy	FBC	(a) Appoint an ESS coordinator (b) Progress of the ESS action plan		Target: To implement FBC's ESS. Completed. See action 4.	2011/12

2.3 PM_{2.5} – Local Authority Approach to Reducing Emissions and/or Concentrations

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

Currently, neither Council undertakes monitoring of PM_{2.5} concentrations. The current 2016 background maps for Fareham and Gosport (2013 based) show that all background concentrations of PM_{2.5} within Fareham and Gosport are far below the 2020 annual mean Air Quality Strategy objective for PM_{2.5} of 25 µg/m³. The highest background concentration is predicted as 12.9µg/m³ within the 1 x 1km grid square with the centroid grid reference of 452500, 108500. This is an area of Swanwick where the M27 runs through and the junction of the M27 and A27 is located.

The Public Health Outcomes Framework data tool compiled by Public Health England quantifies the mortality burden of PM_{2.5} within England and also on a county scale and a local authority scale. Currently the percentage of mortality attributable to PM_{2.5} pollution across England is 5.1%. The percentage within Fareham Borough Council is 4.9%, and within Gosport Borough Council, it is 4.5%. Both Fareham and Gosport have a lower percentage of mortality attributable to PM_{2.5} pollution when compared with England as a whole.

The air quality actions Fareham and Gosport have and will continue to take, have invariably also included benefits for the reduction of PM_{2.5} concentrations and emissions. Although not specifically designed for the reduction of PM_{2.5}, many of the actions within the AQAP designed for NO₂ concentration reduction and also the required inspections through the Local Authority Pollution Prevention and Control (LAPPC) regime, will lead to a net reduction of PM_{2.5} concentrations from combustion based sources, where both NO₂ and particulate matter of varying sizes arise.

Specifically the AQAP measures that promote alternative methods of transport and those aimed at replacing older vehicles with newer, more clean models, in addition to reducing NO₂ emissions within the Boroughs, may also reduce PM_{2.5} emissions as well.

Fareham Borough Council holds regular meetings with a representative of the Director of Public Health at HCC. The meetings involve Council employees with a public health agenda and members of the school travel planning team. Outcomes of these meetings have included:

- Projects to display sustainable travel banners on the A32, designed by local school children;
- An air quality project in schools using diffusion tubes supplied by the Council.

These projects will be beneficial in the Council's approach to reducing PM_{2.5} by raising public awareness of air pollution and promoting alternative methods of transport.

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

3.1 Summary of Monitoring Undertaken

3.1.1 Automatic Monitoring Sites

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

Fareham and Gosport undertook automatic (continuous) monitoring at three sites during 2016. Live and historical monitoring data are available for the three automatic monitors online at <http://www.airqualityengland.co.uk/>. Table A.1 in Appendix A shows the details of the sites.

Maps showing the location of automatic monitoring sites are provided in Appendix F. 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 undertook non-automatic (passive) monitoring of NO₂ at 37 sites during 2016; 27 sites in Fareham and 10 sites in Gosport. Table A.2 in Appendix A shows the details of the sites. There is an increase in monitoring sites from 2015, with 4 new monitoring sites located in Fareham and 1 in Gosport. These additional sites have been deployed to carry out temporary monitoring as requested by members of the public. The monitoring location site names have been updated in Gosport in 2016. Table D.1 in Appendix D compares the site names used before 2016 with those used in 2016 and to be used in future years.

Maps showing the location of the 2016 non-automatic monitoring sites are provided in Appendix F.

Further details on Quality Assurance/Quality Control (QA/QC) and bias adjustment for the diffusion tubes are included in Appendix C.

3.2 Individual Pollutants

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

Reflecting feedback under the LAQM review process the UK Government has decided to retain Benzene, 1,3-Butadiene, Carbon Monoxide and Lead in regulations for England. However, in recognition of the fact that the objectives for these pollutants have been met for several years and are well below limit values, local authorities in England do not have to report on these pollutants unless local circumstances indicate otherwise.

3.2.1 Nitrogen Dioxide (NO₂)

Table A.3 and Figures A.1-A.3 in Appendix A compare the ratified and adjusted monitored NO₂ annual mean concentrations for the past 5 years with the air quality objective of 40µg/m³. In 2016 there were no exceedances of the AQS annual mean objective in Fareham or Gosport, showing an improvement from 5 sites in Fareham in 2015. These five sites were G7, G10, BL1, PS3 and PS4/PS5/PS6. Across Fareham, the majority of sites experienced a reduction in NO₂ annual mean concentrations in 2016 compared to 2015. The only site that showed a slight increase in NO₂ annual mean concentration between 2015 and 2016 was G3. In contrast, 2016 monitoring results for Gosport show an increase in annual mean NO₂ concentrations measured at the majority of monitoring sites. The only site that showed a decrease in annual mean concentration between 2015 and 2016 was site T (previously named GP22).

Table A.4 in Appendix A compares the ratified continuous monitored NO₂ hourly mean concentrations for the past 5 years with the air quality objective of 200µg/m³, not to be exceeded more than 18 times per year. There are no sites where the NO₂ annual mean is greater than 60µg/m³, therefore in accordance with Defra LAQM.TG(16) there are no sites likely to be at risk of exceeding the 1-hour mean AQS objective.

The full 2016 dataset of monthly mean values is provided in Table B.1 in Appendix B.

3.2.2 Particulate Matter (PM₁₀)

Table A.5 in Appendix A presents monitored PM₁₀ annual mean concentrations for the past 5 years. Table A.5 compares the PM₁₀ daily mean concentrations for the past 5 years with the air quality objective of 50µg/m³, not to be exceeded more than 35 times per year. The concentrations for these tables are presented in Figures A.4 and A.5.

For the past 5 years of data there have been no exceedances of the AQS objectives for PM₁₀, both the annual mean objective and the daily mean objective. The trend graph shows that in 2014 both the highest annual mean concentration, and highest number of daily means exceeding 50µg/m³ were experienced. Since then, both of these values have decreased with the annual mean concentration of 19.1µg/m³ recorded, and 1 exceedance of the daily mean objective experienced in 2016.

References

Local Air Quality Management Technical Guidance LAQM.TG(16). May 2016.

Published by Defra in partnership with the Scottish Government, Welsh Assembly Government and Department of the Environment Northern Ireland.

Local Air Quality Management Policy Guidance LAQM.PG(16). May 2016.

Published by Defra in partnership with the Scottish Government, Welsh Assembly Government and Department of the Environment Northern Ireland.

Fareham Borough Council, Air Quality Action Plan, Gosport Road and Portland Street Fareham 2008.

Fareham and Gosport Annual Air Quality Status Report 2016. January 2017.

National Diffusion Tube Bias Adjustment Factor Spreadsheet, 03/17 V2 published in March 2017.

NHS Hampshire/Air Quality Steering Group, Poor Air Quality Leaflet.

Glossary of Terms

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

Appendix A: Monitoring Results

Table A.1 – Details of Automatic Monitoring Sites

Site ID	Site Name	Site Type	X OS Grid Ref	Y OS Grid Ref	Pollutants Monitored	In AQMA?	Monitoring Technique	Distance to Relevant Exposure (m) ⁽¹⁾	Distance to kerb of nearest road (m) ⁽²⁾	Inlet Height (m)
Gosport Borough Council										
GOS1	Tichborne Way	Roadside	458987	102786	NO ₂ /PM ₁₀	NO	Chemiluminescence and TEOM	15	5	3
Fareham Borough Council										
FAR1	Gosport Road	Roadside	457594	105280	NO ₂	YES	Chemiluminescence	3.5	1.5	2
FAR2	Portland Street	Roadside	457954	106027	NO ₂	YES	Chemiluminescence	5	1.5	1.5

Notes:

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

(2) N/A if not applicable.

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

Site ID	Site Name	Site Type	X OS Grid Ref	Y OS Grid Ref	Pollutants Monitored	In AQMA?	Distance to Relevant Exposure (m) ⁽¹⁾	Distance to kerb of nearest road (m) ⁽²⁾	Tube collocated with a Continuous Analyser?	Height (m)
Gosport Borough Council										
GP7	Military Road/Brockhurst Road	Roadside	459572	101800	NO ₂	NO	41	3.5	NO	2.7
GP9/10/11	Fareham Way/Tichborne (co-located with Tichborne monitor)	Roadside	458985	102795	NO ₂	NO	16	6	YES	2.7
GP12	Fareham Road/Lederle Lane	Roadside	458282	104110	NO ₂	NO	46	3	NO	2.7
GP13	Wych Lane/Fareham Road	Roadside	458064	104235	NO ₂	NO	12	5	NO	2.8
GP14	Bus Stop Wych Lane	Roadside	457977	104185	NO ₂	NO	84	4.5	NO	2.7
GP18	Daedalus	Roadside	456564	101572	NO ₂	NO	15	3	NO	2.8
GP21	Bury Cross 1	Roadside	460046	099618	NO ₂	NO	2.3	3.3	NO	2.5
GP22	Bury Cross 2	Roadside	460061	099604	NO ₂	NO	2.3	3.3	NO	2.5
GP23	Lees Lane/Forton Road Junction	Roadside	460631	100435	NO ₂	NO	11	3	NO	2.7
LG	Linden Grove	Roadside	460728	099449	NO ₂	NO	0	3.6	NO	2.1
Fareham Borough Council										
BL1	11 Bath Lane	Other	458376	106109	NO ₂	NO	10	16	FN	2.9

Site ID	Site Name	Site Type	X OS Grid Ref	Y OS Grid Ref	Pollutants Monitored	In AQMA?	Distance to Relevant Exposure (m) ⁽¹⁾	Distance to kerb of nearest road (m) ⁽²⁾	Tube collocated with a Continuous Analyser?	Height (m)
G1A	30 Old Gosport Road	Roadside	457732	105625	NO ₂	NO	0	10	N	2.3
G2A	138 Gosport Road	Other	457627	105138	NO ₂	YES	0	9.5	N	1.8
G3	202 Gosport Road	Roadside	457726	104869	NO ₂	NO	0	9	N	2
G4	122 Gosport Road	Roadside	457598	105213	NO ₂	YES	0	6	N	2.5
G6	171 Gosport Road	Roadside	457599	105410	NO ₂	YES	0	6	N	2.3
G7	193 Gosport Road	Roadside	457583	105354	NO ₂	YES	0	6.5	N	3
G8Z	156 Gosport Road	Roadside	457656	105049	NO ₂	NO	0	4	N	1.9
G10	107 Gosport Road	Roadside	457675	105616	NO ₂	NO	0	14	N	2.6
G11	2 Earls Road	Roadside	457668	105461	NO ₂	NO	0	5	N	2.1
G12	Two Saints, 101 Gosport Road	Roadside	457684	105630	NO ₂	NO	0	15	N	2.6
G14	Bottom of Beaconsfield Road	Other	457631	105494	NO ₂	NO	5	6.9	N	2.5
HR2	17 Hartlands Road	Roadside	457822	106107	NO ₂	NO	N/A	11	N	1.9
HR3A	7 Hartlands Road	Roadside	457787	106140	NO ₂	NO	0	7	N	2.5
HR4	25 Hartlands Road	Roadside	457860	106077	NO ₂	NO	0	6.5	N	1.9
PS1/1A/1B	1 Sentinel Cottages	Roadside	457939	106012	NO ₂	YES	0	6.5	N	2.5
PS2	2 Sentinel Cottages	Roadside	457937	106021	NO ₂	YES	0	6.5	N	2.7
PS3	38 Portland Street	Roadside	457935	106033	NO ₂	YES	0	3.5	N	2.3
PS4/5/6	Co-located with Portland St Monitor	Roadside	457954	106027	NO ₂	YES	5	1.8	Y	1.2
E1/2/3	Co-located with Gosport Road Monitor	Roadside	457590	105281	NO ₂	YES	3.5	1.5	Y	1.9

Site ID	Site Name	Site Type	X OS Grid Ref	Y OS Grid Ref	Pollutants Monitored	In AQMA?	Distance to Relevant Exposure (m) ⁽¹⁾	Distance to kerb of nearest road (m) ⁽²⁾	Tube collocated with a Continuous Analyser?	Height (m)
DC1	Maytree Drive Opposite Delme Court	Roadside	457182	106203	NO ₂	NO	N/A	0.5	N	2.5
RM1	Runnymede	Roadside	455745	107825	NO ₂	NO	N/A	49	N	2.7
GR/RL	Corner of Gosport Rd and Redlands Lane	Roadside	457564	105300	NO ₂	YES	11	1.5	N	2.1
AQ8A	Rosemary House/Botley Road Suburban	Suburban	451618	109015	NO ₂	NO	0	8	N	2.1
PTC1	15 Pear Tree Close	Roadside	455517	103313	NO ₂	NO	0	0.1	N	2.2
FH1	Furze Court	Suburban	457695	107703	NO ₂	NO	21	35	N	1.7
FH2	Furze Court	Suburban	457674	107724	NO ₂	NO	0	50	N	1.5
FH3	Furze Court	Suburban	457716	107712	NO ₂	NO	9	46	N	1.6

Notes:

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

(2) N/A if not applicable.

Table A.3 – Annual Mean NO₂ Monitoring Results

Site ID	Site Type	Monitoring Type	Valid Data Capture for Monitoring Period (%) ⁽¹⁾	Valid Data Capture 2016 (%) ⁽²⁾	NO ₂ Annual Mean Concentration (µg/m ³) ⁽³⁾				
					2012	2013	2014	2015	2016
Automatic - Gosport Borough Council									
GOS1	Roadside	Automatic	85.1	85.1	30.1	37.2	29.5	26.2	32.8
Automatic – Fareham Borough Council									
FAR1	Roadside	Automatic	97.8	97.8	35.5	33.8	32.5	27.6	25.9
FAR2	Roadside	Automatic	99	99	34.9	34.6	40.4	37.2	36.6
Non-Automatic – Gosport Borough Council									
G	Roadside	Diffusion Tube	100	100	36.1	34.6	34.4	30.9	33.7
Q/R/I	Roadside	Diffusion Tube	91.7/01.7/83.2	91.7/01.7/83.3	23.5	28.2	24.7	21.8	25.9
J	Roadside	Diffusion Tube	91.7	91.7	27.3	47.5	39.1	27.4	31.2
V	Roadside	Diffusion Tube	50	50	No data	No data	26.5	19.1	28.3
W	Roadside	Diffusion Tube	100	100	No data	No data	22.4	15.5	18.8
U	Roadside	Diffusion Tube	91.7	91.7	16.1	20.1	21.7	14.6	20.7
S	Roadside	Diffusion Tube	83.3	83.3	35.6	36.1	38.9	36.5	36.5
T	Roadside	Diffusion Tube	75	75	37.5	39.3	38.2	37.7	36.4
P	Roadside	Diffusion Tube	100	100	36.9	35.1	39.4	29.4	33.8
LG	Suburban	Diffusion Tube	100	16	No data	No data	No data	No data	18.2
Non-Automatic – Fareham Borough Council									
BL1	Roadside	Diffusion Tube	83.3	83.3	35.9	38.5	40.8	40.5	35.7

Site ID	Site Type	Monitoring Type	Valid Data Capture for Monitoring Period (%) ⁽¹⁾	Valid Data Capture 2016 (%) ⁽²⁾	NO ₂ Annual Mean Concentration (µg/m ³) ⁽³⁾				
					2012	2013	2014	2015	2016
G1A	Roadside	Diffusion Tube	100.0	100.0	32.1	33.5	35.8	35.8	30.1
G2A	Roadside	Diffusion Tube	100.0	100.0	29.9	32.1	34.1	33.5	27.9
G3	Roadside	Diffusion Tube	66.7	66.7	30.2	30.8	33.6	31.9	28.9
G4	Roadside	Diffusion Tube	100.0	100.0	28.8	29.2	32.2	31.5	25.5
G6	Roadside	Diffusion Tube	100.0	100.0	34.2	35.9	37.4	36.2	30.2
G7	Roadside	Diffusion Tube	100.0	100.0	40.6	40.1	46.1	45.2	36.0
G8Z	Roadside	Diffusion Tube	91.7	91.7	32.2	33.4	34.3	30.8	27.4
G10	Roadside	Diffusion Tube	100.0	100.0	37.5	40.5	40.4	41.7	35.5
G11	Roadside	Diffusion Tube	100.0	100.0	29.2	29.6	29	31.3	25.2
G12	Roadside	Diffusion Tube	100.0	100.0	37	37.4	42.2	38.2	32.8
G14	Other	Diffusion Tube	100.0	100.0	33.3	36.6	37	34.8	30.4
HR2	Roadside	Diffusion Tube	100.0	100.0	32.1	34	34.3	33.1	27.1
HR3A	Roadside	Diffusion Tube	100.0	100.0	27.3	29.5	30.2	29	23.6
HR4	Roadside	Diffusion Tube	91.7	91.7	28.5	31.7	33.8	33	29.5
PS1/1A/1B	Roadside	Diffusion Tube	100/100/100	100/100/100	35.1	37	38.7	37.2	31.9
PS2	Roadside	Diffusion Tube	91.7	91.7	35.8	36	41.3	38.1	35.5
PS3	Roadside	Diffusion Tube	100.0	100.0	40.4	41.6	46	40.6	33.6
PS4/5/6	Roadside	Diffusion Tube	100/100/100	100/100/100	32.6	34.8	40.2	42.9	36.6
E1/2/3	Roadside	Diffusion Tube	100/91.7/100	100/91.7/100	36.7	36.9	39.6	39.2	31.2
DC1	Roadside	Diffusion Tube	100.0	100.0	28.3	30.3	30.1	30.2	26.3
RM1	Roadside	Diffusion Tube	100.0	100.0	29	29.5	29.5	29.6	25.7
GR/RL	Roadside	Diffusion Tube	100.0	100.0	26.6	28.4	28.6	26.7	22.5

Site ID	Site Type	Monitoring Type	Valid Data Capture for Monitoring Period (%) ⁽¹⁾	Valid Data Capture 2016 (%) ⁽²⁾	NO ₂ Annual Mean Concentration (µg/m ³) ⁽³⁾				
					2012	2013	2014	2015	2016
AQ8A	Suburban	Diffusion Tube	100.0	100.0	No data	No data	27.8	29.8	24.9
PTC1		Diffusion Tube	100.0	25.0	No data	No data	No data	No data	29.9
FH1		Diffusion Tube	100.0	58.3	No data	No data	No data	No data	29.9
FH2		Diffusion Tube	85.7	50.0	No data	No data	No data	No data	32.2
FH3		Diffusion Tube	100.0	58.3	No data	No data	No data	No data	26.0

Diffusion tube data has been bias corrected

Annualisation has been conducted where data capture is <75%

If applicable, all data has been distance corrected for relevant exposure

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**.

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

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

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

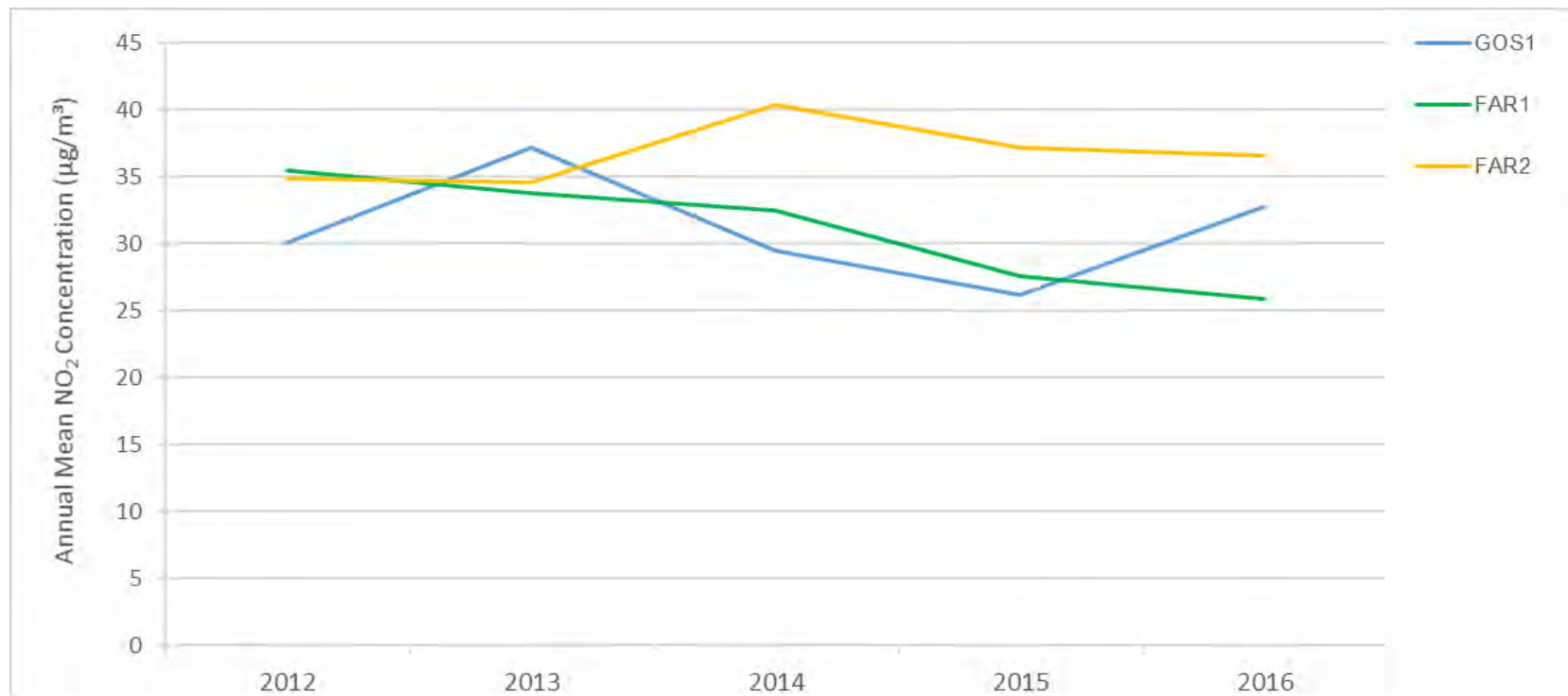
Figure A.1 – Trends in Annual Mean NO₂ Concentrations at Automatic Monitoring Sites

Figure A.2 – Trends in Annual Mean NO₂ Concentrations at Non-Automatic Monitoring Sites in Gosport

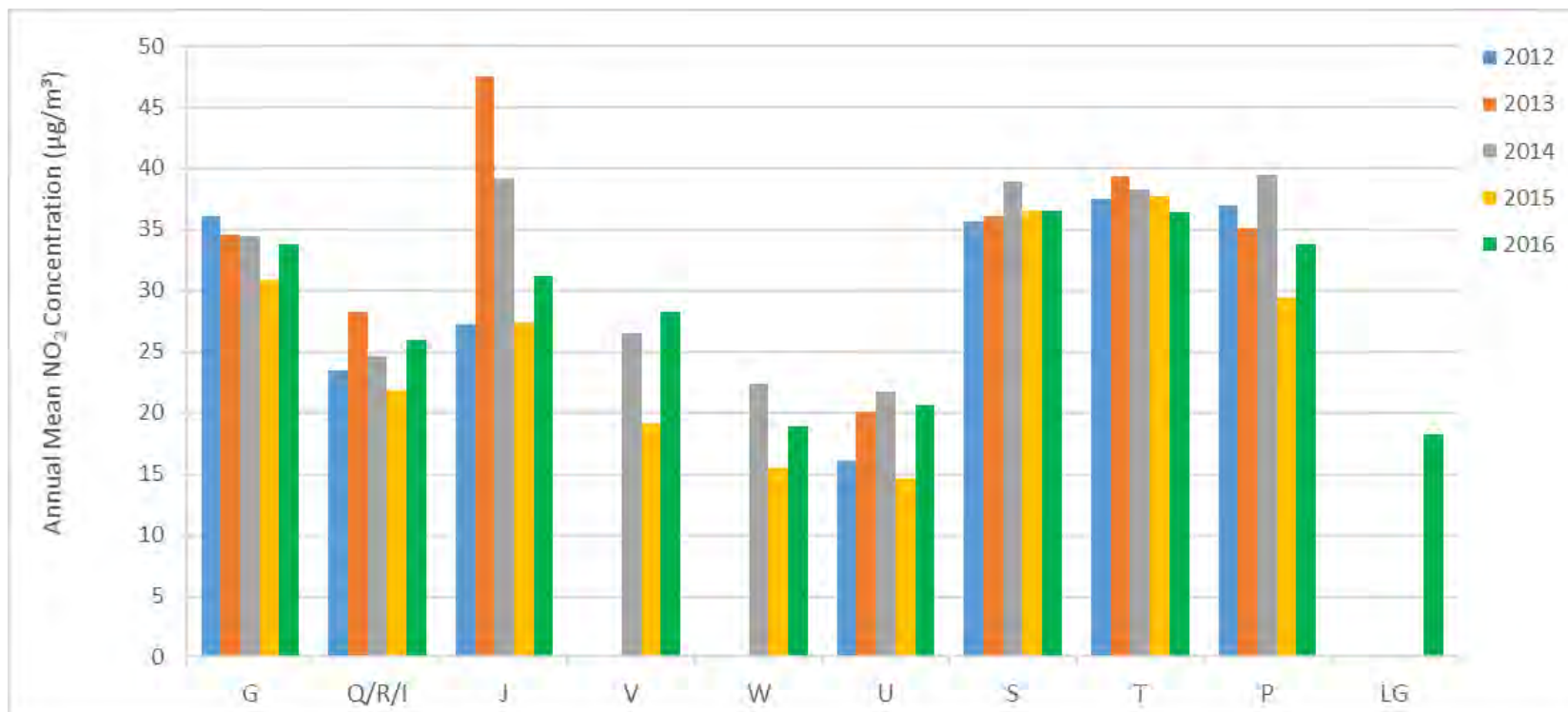


Figure A.3 – Trends in Annual Mean NO₂ Concentrations at Non-Automatic Monitoring Sites in Fareham

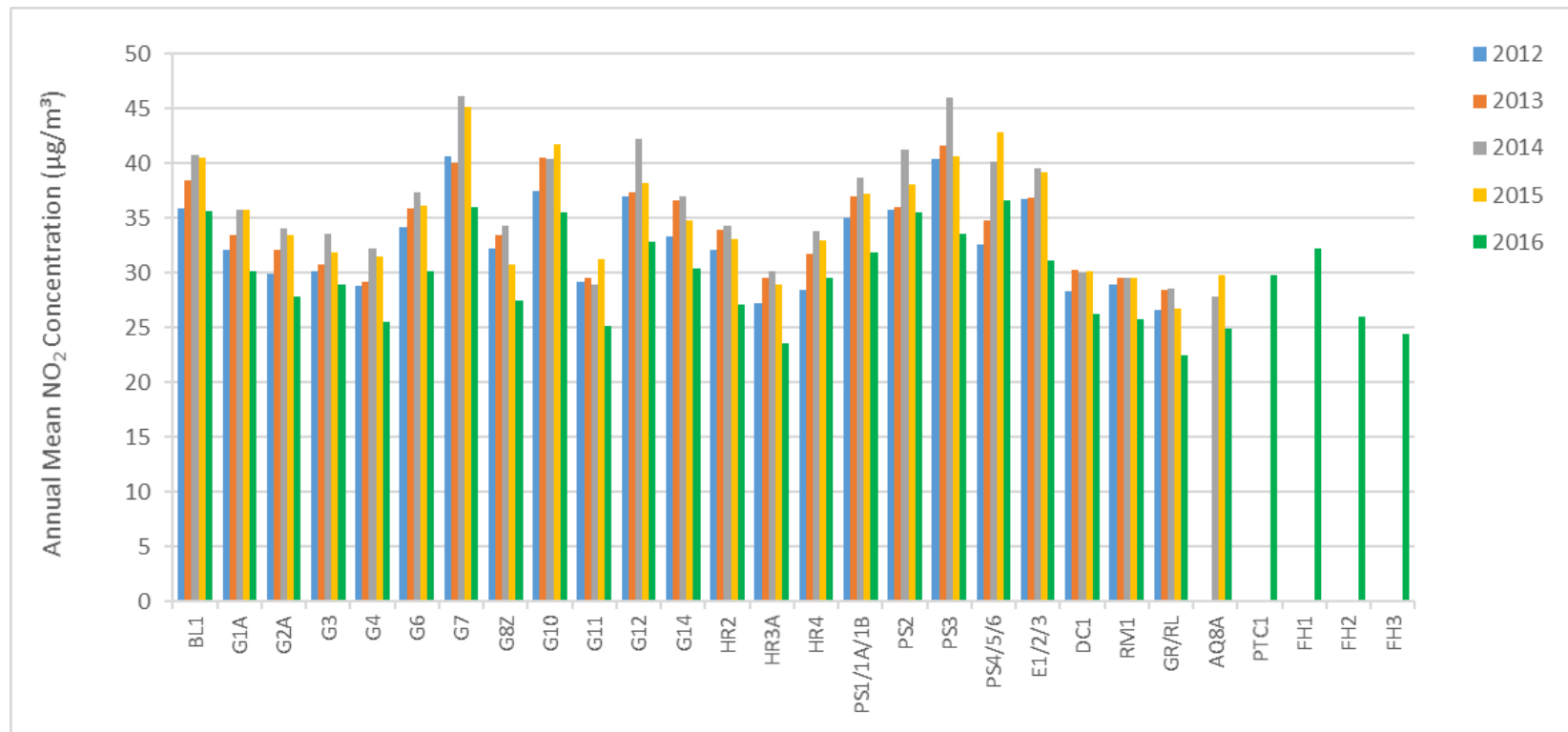


Table A.4 – 1-Hour Mean NO₂ Monitoring Results

Site ID	Site Type	Monitoring Type	Valid Data Capture for Monitoring Period (%) ⁽¹⁾	Valid Data Capture 2016 (%) ⁽²⁾	NO ₂ 1-Hour Means > 200µg/m ³ ⁽³⁾				
					2012	2013	2014	2015	2016
Gosport Borough Council									
GOS1	Roadside	Automatic	85.1	85.1	2	7	7	0	0
Fareham Borough Council									
FAR1	Roadside	Automatic	97.8	97.8	0	0	0	0	0
FAR2	Roadside	Automatic	99	99	0	0	0(126)	0	2

Notes:

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

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

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

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

Figure A.4 – Trends in Number of NO₂ 1-Hour Means > 200µg/m³

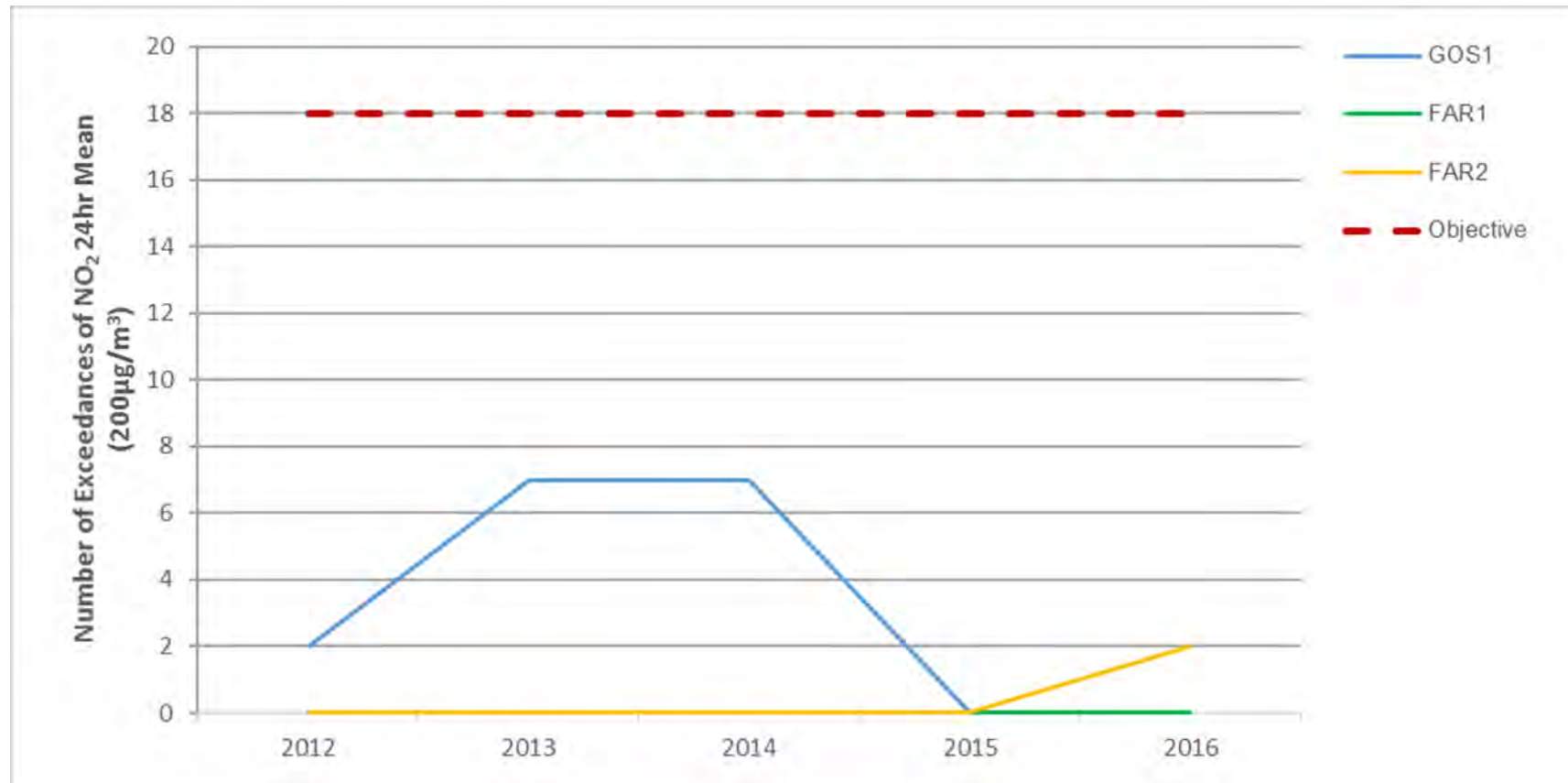


Table A.5 – Annual Mean PM₁₀ Monitoring Results

Site ID	Site Type	Valid Data Capture for Monitoring Period (%) ⁽¹⁾	Valid Data Capture 2016 (%) ⁽²⁾	PM ₁₀ Annual Mean Concentration (µg/m ³) ⁽³⁾				
				2012	2013	2014	2015	2016
GOS1	Roadside	94.6	94.6	16.8	21.9	24	20.8	19.1

Annualisation has been conducted where data capture is <75%

Notes:

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

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

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

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

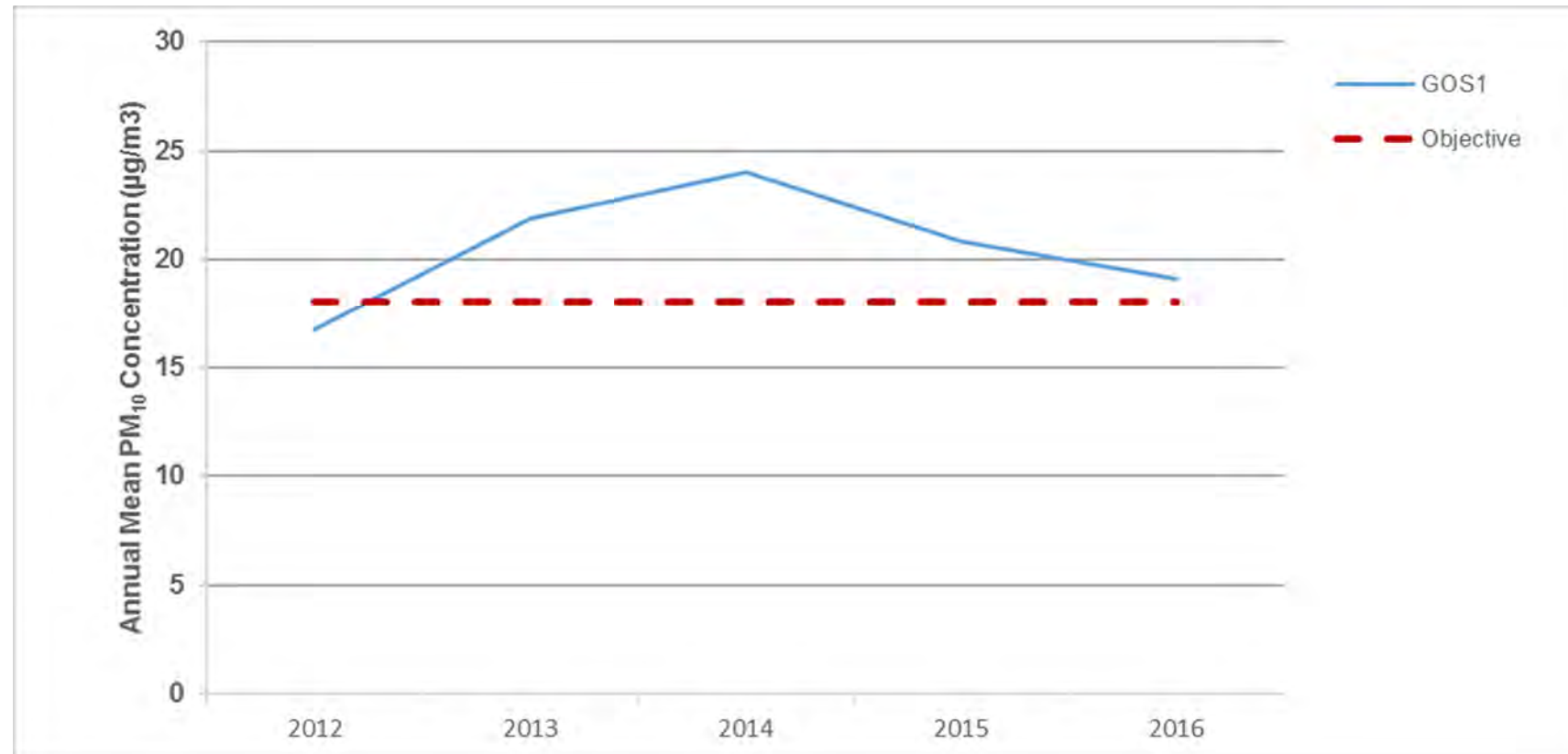
Figure A.5 – Trends in Annual Mean PM₁₀ Concentrations

Table A.6 – 24-Hour Mean PM₁₀ Monitoring Results

Site ID	Site Type	Valid Data Capture for Monitoring Period (%) ⁽¹⁾	Valid Data Capture 2016 (%) ⁽²⁾	PM ₁₀ 24-Hour Means > 50µg/m ³ ⁽³⁾				
				2012	2013	2014	2015	2016
GOS1	Roadside	94.6	94.6	7	3	15	3	1

Notes:

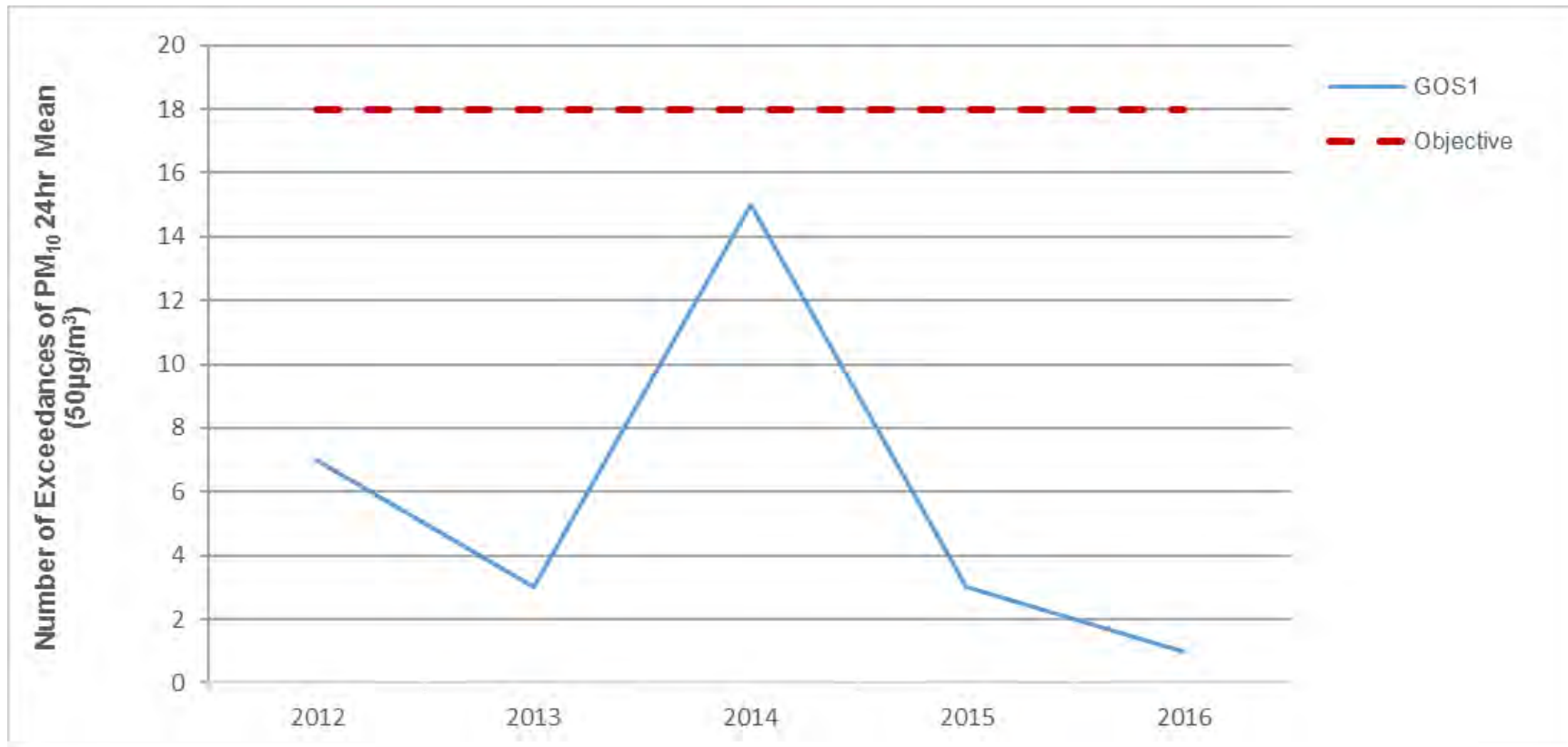
Exceedances of the PM₁₀ 24-hour mean objective (50µg/m³ not to be exceeded more than 35 times/year) are shown in **bold**.

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

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

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

Figure A.6 – Trends in Number of 24-Hour Mean PM₁₀ Results >50µg/m³



Appendix B: Full Monthly Diffusion Tube Results for 2016

Table B.1 – NO₂ Monthly Diffusion Tube Results - 2016

Site ID	NO ₂ Mean Concentrations (µg/m ³)												Annual Mean		
	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Raw Data	Bias Adjusted (Fareham = 0.95, Gosport = 0.94) and Annualised ⁽¹⁾	Distance Corrected to Nearest Exposure ⁽²⁾
	Gosport Borough Council														
G	38.9	35.3	37.2	32.4	33.2	33.7	32.0	35.8	36.3	35.8	36.7	43.4	35.9	33.7	N/A
Q	No data	24.6	33.3	27.6	28.0	26.9	14.6	23.7	26.8	31.8	27.1	40.5	27.7	26.0	N/A
I	No data	24.14	32.3	26.86	28.03	22.83	16.02	22.66	No data	31.29	30.66	39.87	27.5	25.8	N/A
R	No data	28.65	31.38	25.72	27.95	25.42	15	22.69	25.6	31.45	31.07	38.16	27.6	25.9	N/A
T	37.7	No data	41.8	35.2	38.9	No data	No data	35.2	34.6	42.0	40.4	42.7	38.7	36.4	N/A
J	37.0	No data	34.6	33.1	33.5	31.3	25.5	28.6	32.9	29.2	34.5	45.1	33.2	31.2	N/A
V	31.2	31.9	36.3	26.4	25.9	No data	No data	20.1	No data	No data	No data	No data	28.6	28.3	N/A
P	32.0	38.4	42.6	32.6	33.7	35.3	25.3	34.6	32.6	36.1	42.6	45.4	35.9	33.8	N/A
S	37.9	42.1	26.4	37.3	39.2	No data	No data	36.8	38.7	39.9	37.9	51.6	38.8	36.5	N/A
W	20.6	22.1	23.5	19.7	16.2	16.1	12.4	15.8	16.1	21.0	24.1	33.0	20.0	18.8	N/A
U	31.9	No data	23.6	21.7	18.9	16.2	11.5	15.0	16.0	24.9	27.7	34.3	22.0	20.7	N/A
LG	No data	No data	No data	No data	No data	No data	No data	No data	14.9	22.7	No data	No data	18.8	18.2	N/A

Site ID	NO ₂ Mean Concentrations (µg/m ³)														
	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual Mean		
													Raw Data	Bias Adjusted (Fareham = 0.95, Gosport = 0.94) and Annualised ⁽¹⁾	Distance Corrected to Nearest Exposure ⁽²⁾
Fareham Borough Council															
BL1	44.8	39.6	No data	37.4	36.0	30.7	27.5	No data	52.0	31.1	35.4	41.5	37.6	35.7	N/A
G1A	37.3	34.3	39.9	29.2	29.9	28.0	20.2	29.4	26.5	31.0	37.7	37.0	31.7	30.1	N/A
G2A	34.0	29.8	31.0	28.9	23.6	25.4	22.4	24.7	28.6	28.3	37.9	37.7	29.3	27.9	N/A
G3	No data	No data	No data	27.3	23.0	22.4	19.2	22.1	25.0	26.2	No data	78.4	30.5	32.9	N/A
G4	28.4	0.2	62.9	25.9	22.4	23.6	20.7	21.6	24.3	26.4	29.6	35.9	26.8	25.5	N/A
G6	37.2	32.3	34.3	30.1	30.7	28.1	21.6	26.2	28.5	38.2	32.7	41.1	31.7	30.2	N/A
G7	43.6	35.1	35.7	35.3	40.3	36.5	30.3	35.1	35.9	40.8	43.0	43.0	37.9	36.0	N/A
G8Z	35.5	32.7	No data	26.5	13.1	26.0	26.9	25.1	30.2	26.5	37.1	38.4	28.9	27.4	N/A
G10	41.2	35.5	38.1	34.2	34.8	33.4	29.4	33.6	32.7	41.9	45.1	48.9	37.4	35.5	N/A
G11	33.2	28.1	29.8	24.2	24.4	23.9	22.0	23.4	21.8	27.9	30.2	29.3	26.5	25.2	N/A
G12	42.6	34.9	34.2	34.6	33.2	29.5	24.4	30.1	33.8	36.0	39.3	41.6	34.5	32.8	N/A
G14	32.4	32.2	38.8	32.6	32.0	27.3	15.9	23.2	29.0	39.7	39.9	40.7	32.0	30.4	N/A
GR/RL	26.7	25.8	28.9	24.1	20.9	18.9	12.9	20.5	19.2	24.8	29.6	32.1	23.7	22.5	N/A
E1	38.5	35.4	35.1	28.6	32.9	28.6	28.9	29.4	35.0	35.8	38.2	36.7	33.6	31.9	N/A
E2	32.7	36.3	36.1	33.6	32.3	30.8	26.3	29.3	29.8	35.1	33.8	No data	32.4	30.7	N/A
E3	35.5	38.4	38.7	30.5	32.3	31.0	26.7	30.3	32.6	19.3	35.2	40.3	32.6	30.9	N/A
RM1	28.9	29.6	33.1	26.7	23.9	23.8	16.3	23.8	23.4	32.5	35.7	27.5	27.1	25.7	N/A

Site ID	NO ₂ Mean Concentrations (µg/m ³)												Annual Mean			
	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Raw Data	Bias Adjusted (Fareham = 0.95, Gosport = 0.94) and Annualised ⁽¹⁾	Distance Corrected to Nearest Exposure ⁽²⁾	
DC1	35.7	28.2	25.9	27.4	24.8	21.0	18.4	22.9	23.0	31.1	35.4	38.3	27.7	26.3	N/A	
PS1	37.2	33.1	35.1	34.5	32.8	28.2	22.4	26.7	30.0	36.5	39.4	45.7	33.5	31.8	N/A	
PS1A	38.1	34.5	35.2	32.1	37.1	30.1	21.8	29.5	34.5	36.8	35.4	36.5	33.5	31.8	N/A	
PS1B	34.8	34.8	35.3	39.3	32.7	29.4	22.6	28.0	32.4	35.5	39.8	39.6	33.7	32.0	N/A	
PS2	No data	76.2	35.0	34.9	35.0	29.8	23.3	30.6	33.2	35.3	37.7	40.1	37.4	35.5	N/A	
PS3	40.0	39.1	34.1	34.4	34.1	30.2	27.1	34.9	32.7	36.7	40.9	40.2	35.3	33.6	N/A	
PS4	44.6	40.4	39.2	39.7	44.3	33.4	24.3	32.7	37.3	45.1	40.7	46.1	39.0	37.0	N/A	
PS5	46.7	34.5	36.8	39.5	36.2	35.3	27.7	31.8	37.9	40.7	43.3	45.3	38.0	36.1	N/A	
PS6	44.6	42.0	37.3	38.2	43.6	31.8	26.2	34.4	37.5	41.5	43.9	42.6	38.6	36.7	N/A	
HR2	33.5	28.8	29.3	28.4	27.6	24.8	21.3	23.5	27.6	30.7	28.2	39.2	28.6	27.1	N/A	
HR3A	29.4	26.7	29.0	24.5	23.3	21.8	16.0	19.8	23.6	25.1	28.4	30.4	24.8	23.6	N/A	
HR4	33.1	34.2	36.2	32.0	31.7	No data	17.1	21.6	26.5	33.7	32.5	43.3	31.1	29.5	N/A	
AQ8A	33.2	26.9	22.9	25.5	22.4	23.2	23.9	26.2	26.2	22.9	29.8	31.6	26.2	24.9	N/A	
FH1	26.9	30.1	35.3	29.6	28.9	26.4	17.4	No data	No data	No data	No data	No data	27.8	29.9	N/A	
FH2	32.6	No data	36.6	29.2	30.3	27.3	16.0	No data	No data	No data	No data	No data	28.7	32.2	N/A	
FH3	24.4	25.0	31.0	28.3	21.8	23.3	15.4	No data	No data	No data	No data	No data	24.2	26.0	N/A	
PTC1	No data	No data	No data	No data	No data	No data	No data	No data	23.4	20.5	21.3	No data	No data	21.7	24.4	N/A

Local bias adjustment factor used for Fareham

National bias adjustment factor used for Gosport

Annualisation has been conducted where data capture is <75%

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**.

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

(2) Distance corrected to nearest relevant public exposure.

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

Sources of Pollution

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

Short-term to Long-term Data Adjustment

For the 2015 diffusion tube data, annualisation was required at a total of five sites; three within Gosport and two within Fareham due to data capture below 75%. The annualisation process has been completed in line with Defra Technical Guidance LAQM.TG (16) Box 7.10 and details of the annualisation have been provided in Table C.1.

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

Site ID	Unadjusted Diffusion Tube Mean ($\mu\text{g}/\text{m}^3$)	Annualisation Factor Portsmouth	Annualisation Factor Bournemouth	Average Annualisation Factor	Adjusted and Bias Adjusted Tube Mean ($\mu\text{g}/\text{m}^3$)
FH1	27.8	1.13	1.14	1.13	29.9
FH2	28.7	1.17	1.2	1.18	32.3
FH3	24.2	1.13	1.14	1.13	23.6
PTC1	21.7	1.19	1.18	1.18	24.4
G3	30.5	1.13	1.15	1.14	32.9
LG	18.8	1.04	1.02	1.03	18.2

Diffusion Tube Local Bias Adjustment Factors

There are four triplicated diffusion tube monitoring sites located within Fareham and Gosport, three of these are co-located at the three automatic monitoring stations. Local bias adjustment factors have been calculated from the Precision and Bias Adjustment spreadsheet (v04)⁷, and these are shown in and the outputs from the spreadsheet are shown in Figures C.1, C.2 and C.3 and a comparison in Table C.2.

Table C.2 – Local Bias Adjustment Factors

Location	Diffusion Tube Data Capture (%)	Continuous Monitor Data Capture (%)	Diffusion Tube Annual Mean ($\mu\text{g}/\text{m}^3$)	Continuous Monitor Annual Mean ($\mu\text{g}/\text{m}^3$)	Ratio
Tichborne Way (GOS1), Q/I/R	88.9	85.1	27	32	1.19
Gosport Road (FAR1), E1/2/3	97.2	97.8	33	26	0.77
Portland Street (FAR2), PS4/5/6	100	99.0	39	37	0.95

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

Checking Precision and Accuracy of Triplicate Tubes



Diffusion Tubes Measurements									
Period	Start Date dd/mm/yyyy	End Date dd/mm/yyyy	Tube 1 $\mu\text{g}\text{m}^{-3}$	Tube 2 $\mu\text{g}\text{m}^{-3}$	Tube 3 $\mu\text{g}\text{m}^{-3}$	Triplicate Mean	Standard Deviation	Coefficient of Variation (CV)	95% CI of mean
1	07/01/2016	03/02/2016							
2	03/02/2016	03/03/2017	24.6	28.7	24.1	26	2.5	10	6.2
3	03/03/2016	30/03/2016	33.3	31.4	32.3	32	0.9	3	2.3
4	30/03/2016	27/04/2016	27.6	25.7	26.9	27	1.0	4	2.4
5	27/04/2016	26/05/2016	28.0	28.0	28.0	28	0.0	0	0.1
6	26/05/2016	29/06/2016	26.9	25.4	22.8	25	2.0	8	5.1
7	29/06/2016	27/07/2016	14.6	15.0	16.0	15	0.7	5	1.9
8	27/07/2016	25/08/2016	23.7	22.7	22.7	23	0.6	3	1.5
9	25/08/2016	29/09/2016	26.8	25.6		26	0.8	3	7.6
10	29/09/2016	26/10/2016	31.8	31.5	31.3	32	0.3	1	0.7
11	26/10/2016	30/11/2016	27.1	31.1	30.7	30	2.2	7	5.4
12	30/11/2016	04/01/2017	40.5	38.2	39.9	39	1.2	3	3.0
13									

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

Automatic Method		Data Quality Check	
Period Mean	Data Capture (% DC)	Tubes Precision Check	Automatic Monitor Data
30.8	99.7		Good
32.2	88.4	Good	Good
45.8	26.7	Good	or Data Captu
53.2	19.0	Good	or Data Captu
25.8	86.9	Good	Good
25.7	99.6	Good	Good
27.6	99.9	Good	Good
31.5	99.7	Good	Good
28.8	97.0	Good	Good
28.1	100.0	Good	Good
43.4	90.0	Good	Good
45.9	91.4	Good	Good

Overall survey --> **Good precision** **Poor Overall DC**

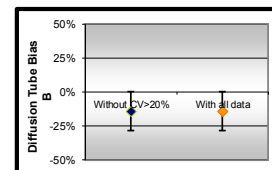
Site Name/ ID: **GOS1 (Tichborne) - Gosport**

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

(Check average CV & DC from Accuracy calculations)

Accuracy (with 95% confidence interval) without periods with CV larger than 20%
Bias calculated using 9 periods of data
Bias factor A 1.19 (1.01 - 1.43)
Bias B -16% (-30% - -1%)
Diffusion Tubes Mean: 27 $\mu\text{g}\text{m}^{-3}$
Mean CV (Precision): 4
Automatic Mean: 32 $\mu\text{g}\text{m}^{-3}$
Data Capture for periods used: 95%
Adjusted Tubes Mean: 32 (27 - 39) $\mu\text{g}\text{m}^{-3}$

Accuracy (with 95% confidence interval) WITH ALL DATA
Bias calculated using 9 periods of data
Bias factor A 1.19 (1.01 - 1.43)
Bias B -16% (-30% - -1%)
Diffusion Tubes Mean: 27 $\mu\text{g}\text{m}^{-3}$
Mean CV (Precision): 4
Automatic Mean: 32 $\mu\text{g}\text{m}^{-3}$
Data Capture for periods used: 95%
Adjusted Tubes Mean: 32 (27 - 39) $\mu\text{g}\text{m}^{-3}$



Jaume Targa, for AEA
Version 04 - February 2011

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

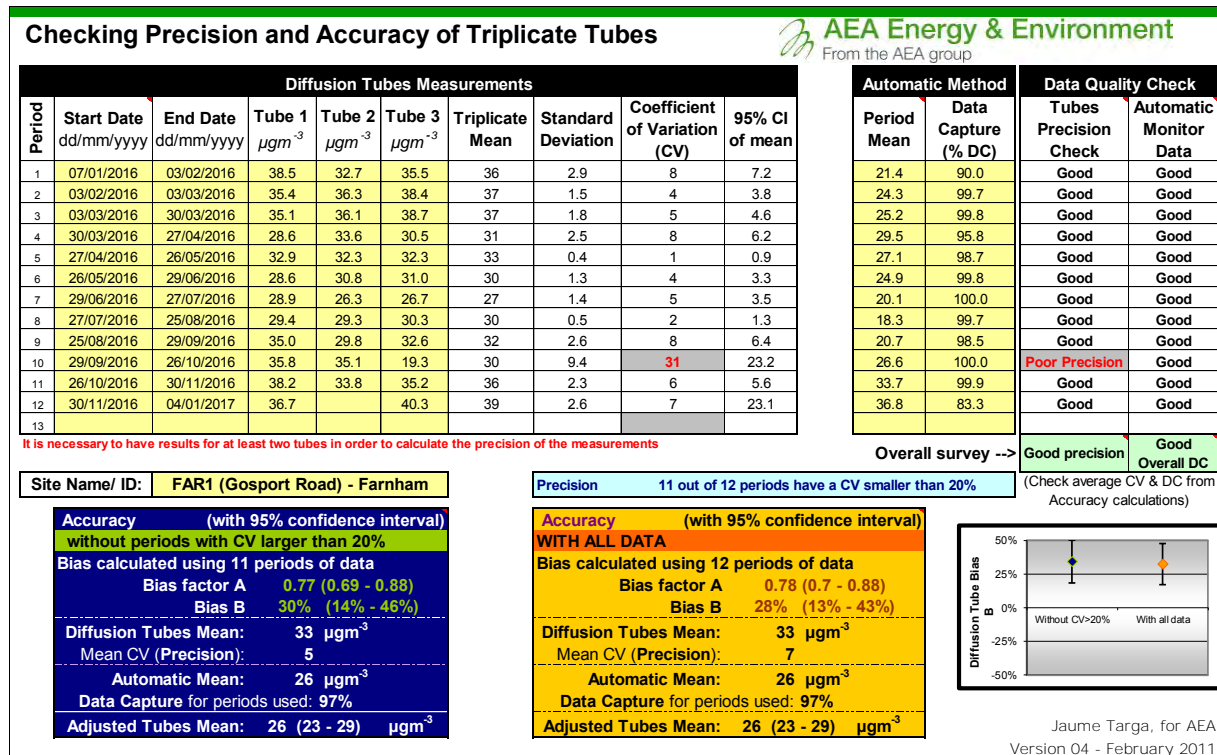
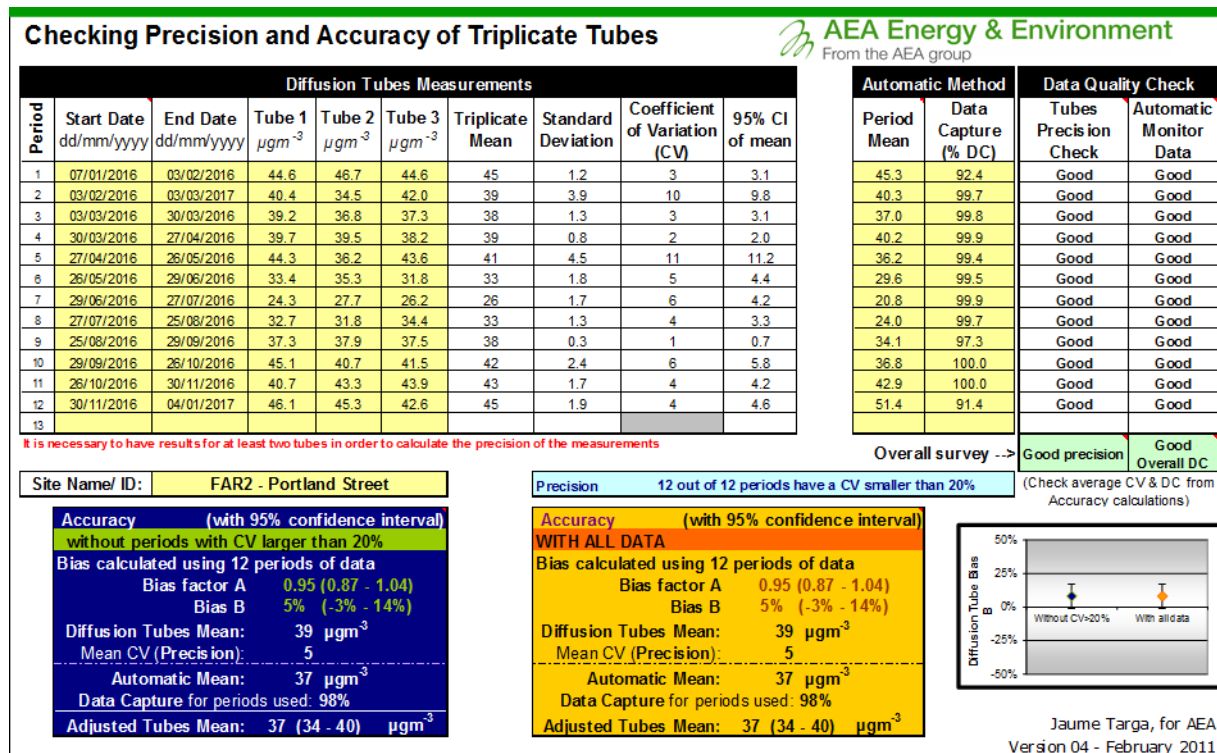


Figure C.3: Local Bias Adjustment Factor Correction Output – Portland Street (FAR2)



Diffusion Tube National Bias Adjustment Factors

The diffusion tubes for the year 2016 were supplied and analysed by Gradko International Limited, the tubes were prepared using the 20% Triethanolamine (TEA) in water preparation method. The national bias adjustment factor for Gradko 20% TEA is 0.94 (based on 21 studies, spreadsheet version number 03/17 v2)) as derived from the national bias adjustment calculator.

Justification for Choice of Factor Applied

The diffusion tube data has been corrected using a bias adjustment factor, which is an estimate of the difference between diffusion tube concentration and continuous monitoring, the latter assumed to be a more accurate method of monitoring. The Defra Technical Guidance LAQM.TG(16) provides guidance with regard to the application of a bias adjustment factor to correct diffusion tube monitoring. Triplicate co-location studies can be used to determine a local bias factor based on the comparison of diffusion tube results with data taken from NO_x/NO₂ continuous analysers. Alternatively, the national database of diffusion tube co-location surveys provides bias factors for the relevant laboratory and preparation method.

The Defra Technical Guidance LAQM.TG(16) recommends the use of a local bias adjustment factor where available and relevant to diffusion tube sites.

Previous LAQM reports have applied the national bias adjustment factor to Gosport Borough Council diffusion tubes. For this reason, and the reduced data capture experienced at the Tichborne Way automatic monitoring site, the national bias adjustment factor of 0.94 has been applied to the 2016 Gosport Borough Council diffusion tube data.

The local bias adjustment factor of 0.95 derived from the co-location study at the Portland Street automatic monitoring site has been used to adjust the Fareham Borough Council diffusion tube data. The higher data capture rate for the Portland Street monitor compared to the Gosport Road monitor, and the application of the factor obtained from the Portland Street monitor in past LAQM reports provided the reasoning for use of this factor. Additionally, as the Portland Street factor is higher than the national and the Gosport Road factor, the local bias adjustment factor used provides a worst-case scenario.

PM₁₀ Monitoring Adjustment

A Tapered Element Oscillating Microbalance (TEOM) is in operation at the Tichborne Way monitoring location to record PM₁₀ concentration. As TEOM monitors do not meet the equivalence criteria for PM₁₀ monitoring therefore 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 completed for the data provided to Gosport Borough Council by We Care 4 Air (January – March) and Ricardo Environment and Energy (April – December) who were the service agents for the automatic monitors for during 2016.

QA/QC of Automatic Monitoring

Formal Quality Assurance/Quality Control (QA/QC) are currently provided by Ricardo Environment and Energy, this ensures reliability and accuracy of the measurements. We Care for Air were the former provider of these services until April 2016. The monitoring sites are visited and checked every two weeks.

QA/QC of Diffusion Tube Monitoring

Gradko International Ltd is a UKAS accredited laboratory and participates in laboratory performance and proficiency testing schemes. These provide strict performance criteria for participating laboratories to meet, thereby ensuring NO₂ concentrations reported are of a high calibre. The lab follows the procedures set out in the Harmonisation Practical Guidance. Gradko previously participated in the Workplace Analysis Scheme for Proficiency (WASP) for NO₂ diffusion tube analysis and the Annual Field Inter-Comparison Exercise. In April 2014, a new scheme, AIR PT10, was introduced. This is an independent analytical proficiency-testing (PT) scheme, operated by LGC Standards and supported by the Health and Safety Laboratory (HSL). AIR PT combines two long running PT schemes: LGC Standards STACKS PT scheme and HSL WASP PT scheme.

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

from the monthly NPL Field Intercomparison Exercise carried out at Marylebone Road, central London. A laboratory is assessed and given a 'z' score. A score of 2 or less indicates satisfactory laboratory performance.

Gradko International Ltd's performance for 2016 is covered by rounds AR012, AR013, AR015 and AR016 of the AIR-PT scheme, for each round 100% of the laboratories results were deemed to be satisfactory based upon a z score of $\leq \pm 2$. In 2016, the tube precision for NO₂ Annual Field Inter-Comparison for Gradko International using the 20% TEA in acetone method was 'good' for the results of all 27 participating local authorities.

Appendix D: Updated Non-Automatic Monitoring Site Names for Gosport

Table D.1 – Updated Site IDs for Non-Automatic Monitoring Locations in Gosport 2016

2016 Site ID	Previous Site ID
G	GP7
Q	GP9
I	GP10
R	GP11
J	GP12
V	GP13
W	GP14
U	GP18
S	GP21
T	GP22
P	GP23

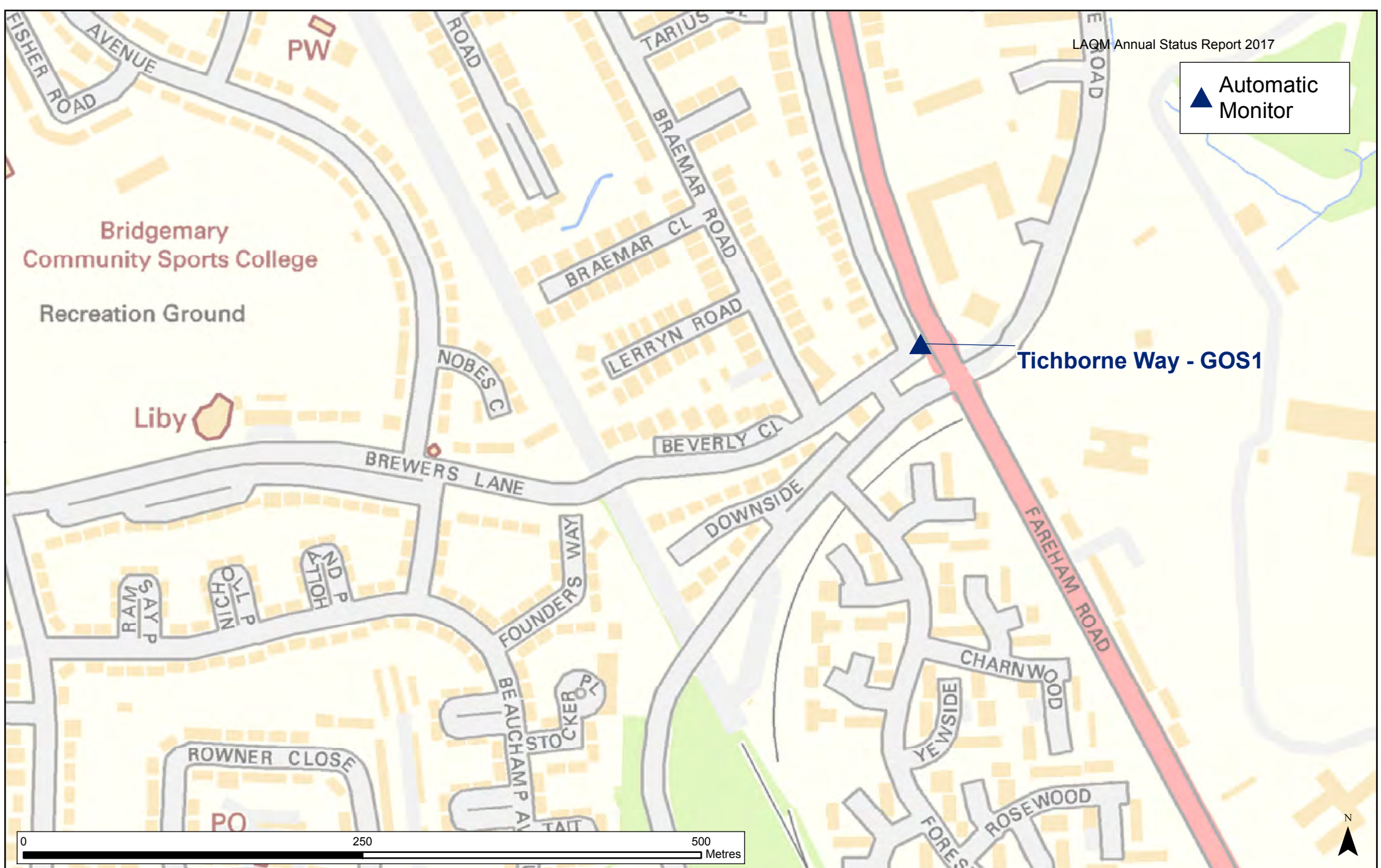
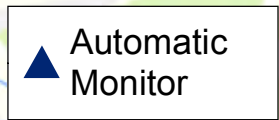
Appendix E: Summary of Air Quality Objectives in England

Table E.1 – Air Quality Objectives in England

Pollutant	Air Quality Objective ⁴	
	Concentration	Measured as
Nitrogen Dioxide (NO ₂)	200 µg/m ³ not to be exceeded more than 18 times a year	1-hour mean
	40 µg/m ³	Annual mean
Particulate Matter (PM ₁₀)	50 µg/m ³ , not to be exceeded more than 35 times a year	24-hour mean
	40 µg/m ³	Annual mean
Sulphur Dioxide (SO ₂)	350 µg/m ³ , not to be exceeded more than 24 times a year	1-hour mean
	125 µg/m ³ , not to be exceeded more than 3 times a year	24-hour mean
	266 µg/m ³ , not to be exceeded more than 35 times a year	15-minute mean

⁴ The units are in microgrammes of pollutant per cubic metre of air (µg/m³).

Appendix F: Maps of Monitoring Locations



Tichborne Way - GOS1

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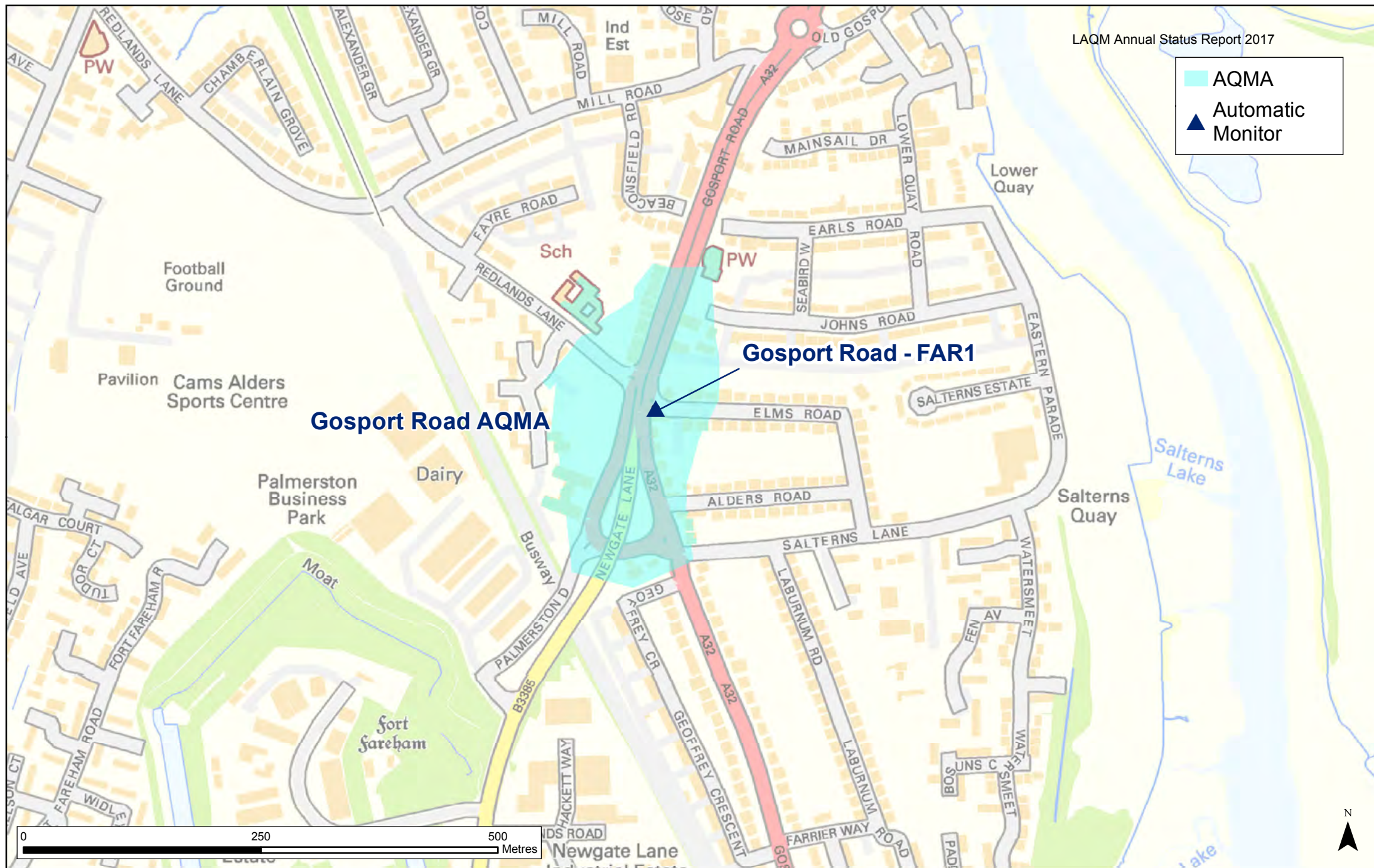
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Fareham and Gosport Annual Status Report 2017
Automatic Monitoring Site - Tichborne Way, Gosport

■ AQMA
▲ Automatic Monitor



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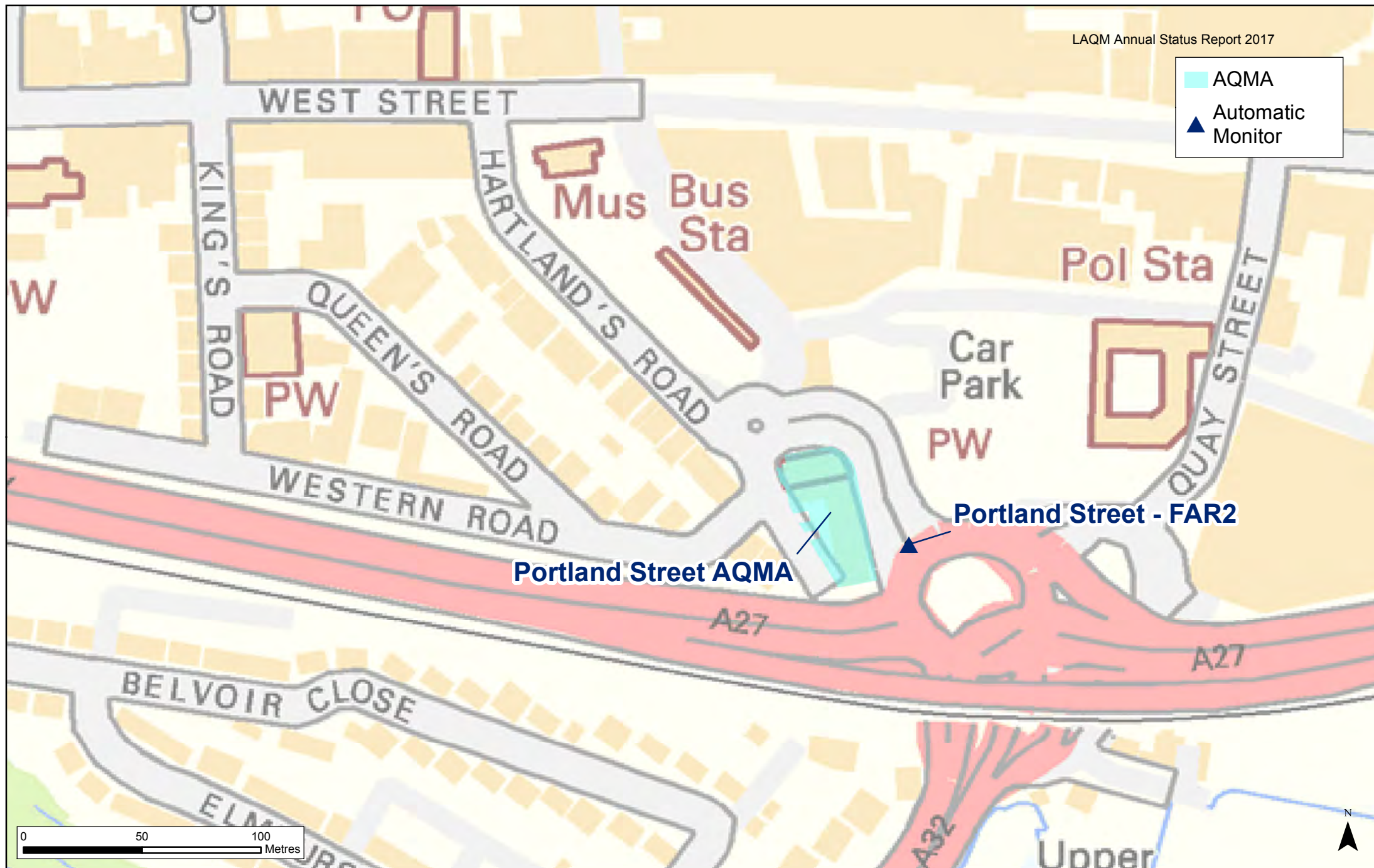
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■ AQMA
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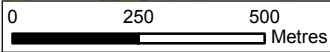
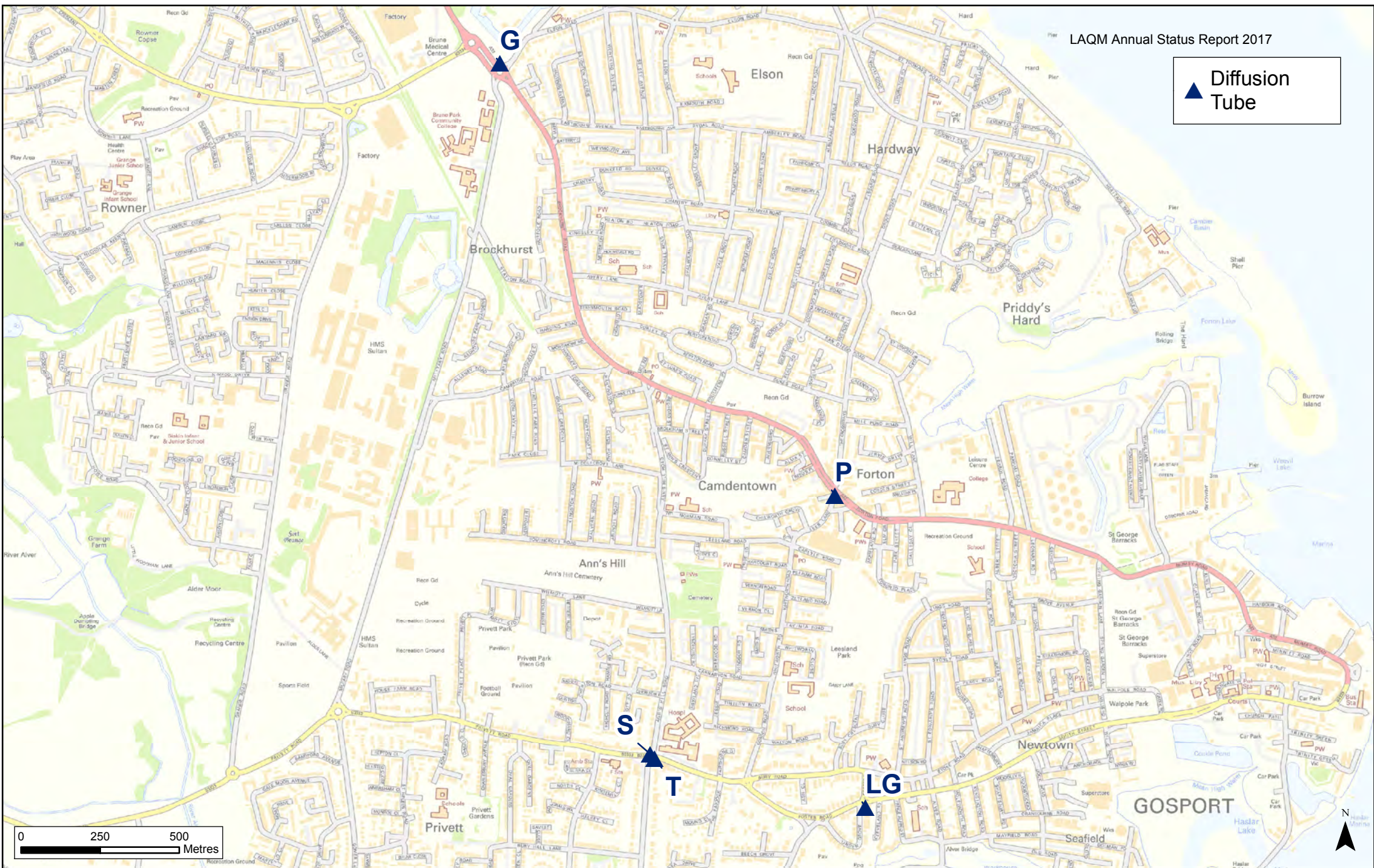
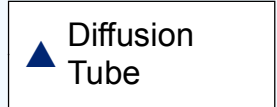


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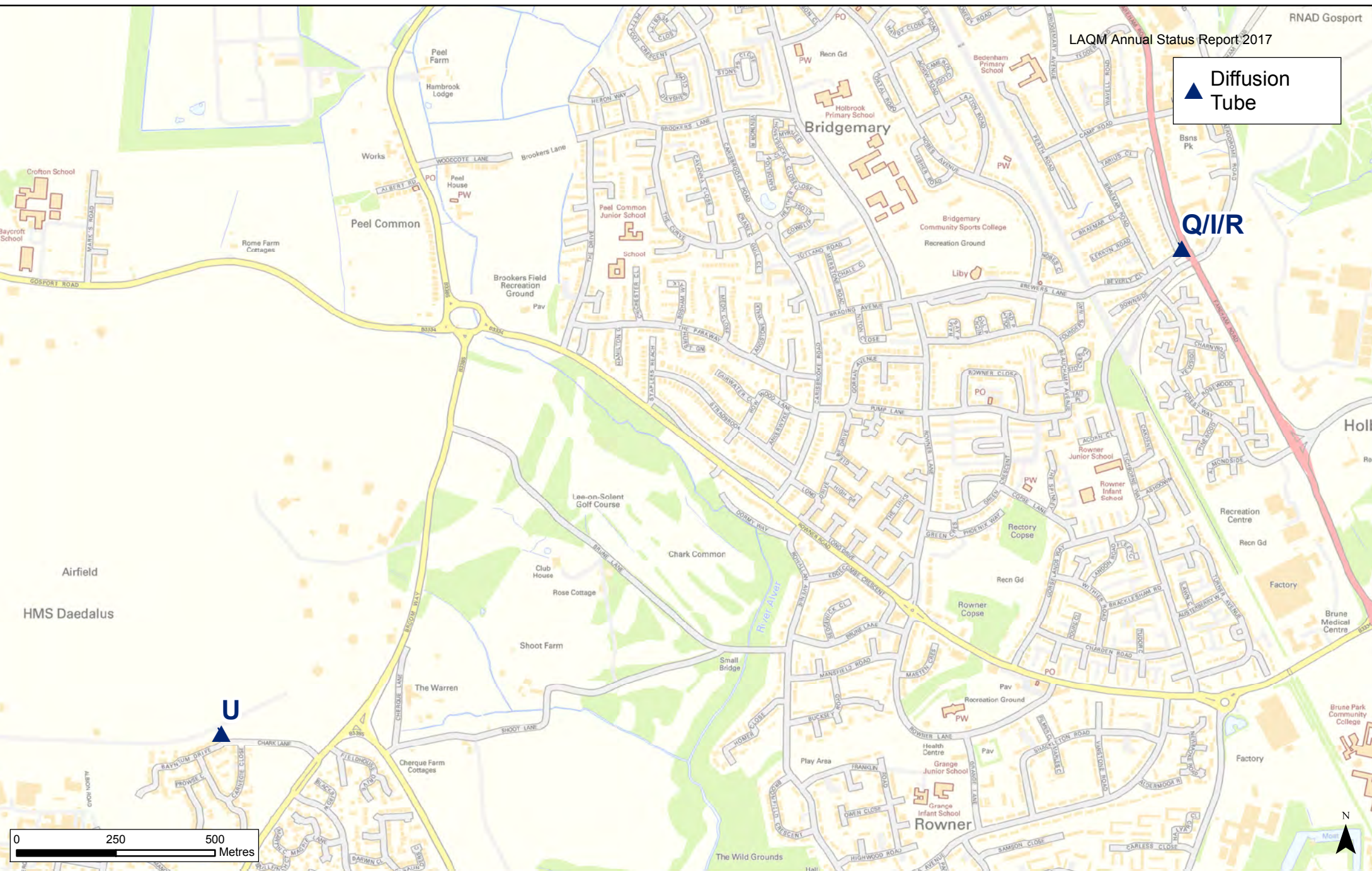
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Diffusion Tube Monitoring Locations - Gosport

▲ Diffusion Tube

Q/I/R

U



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Diffusion Tube Monitoring Locations - Bridgemary and Daedalus

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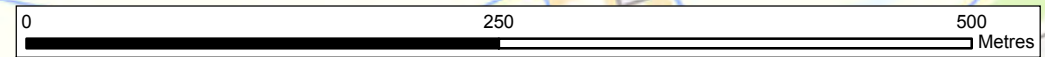
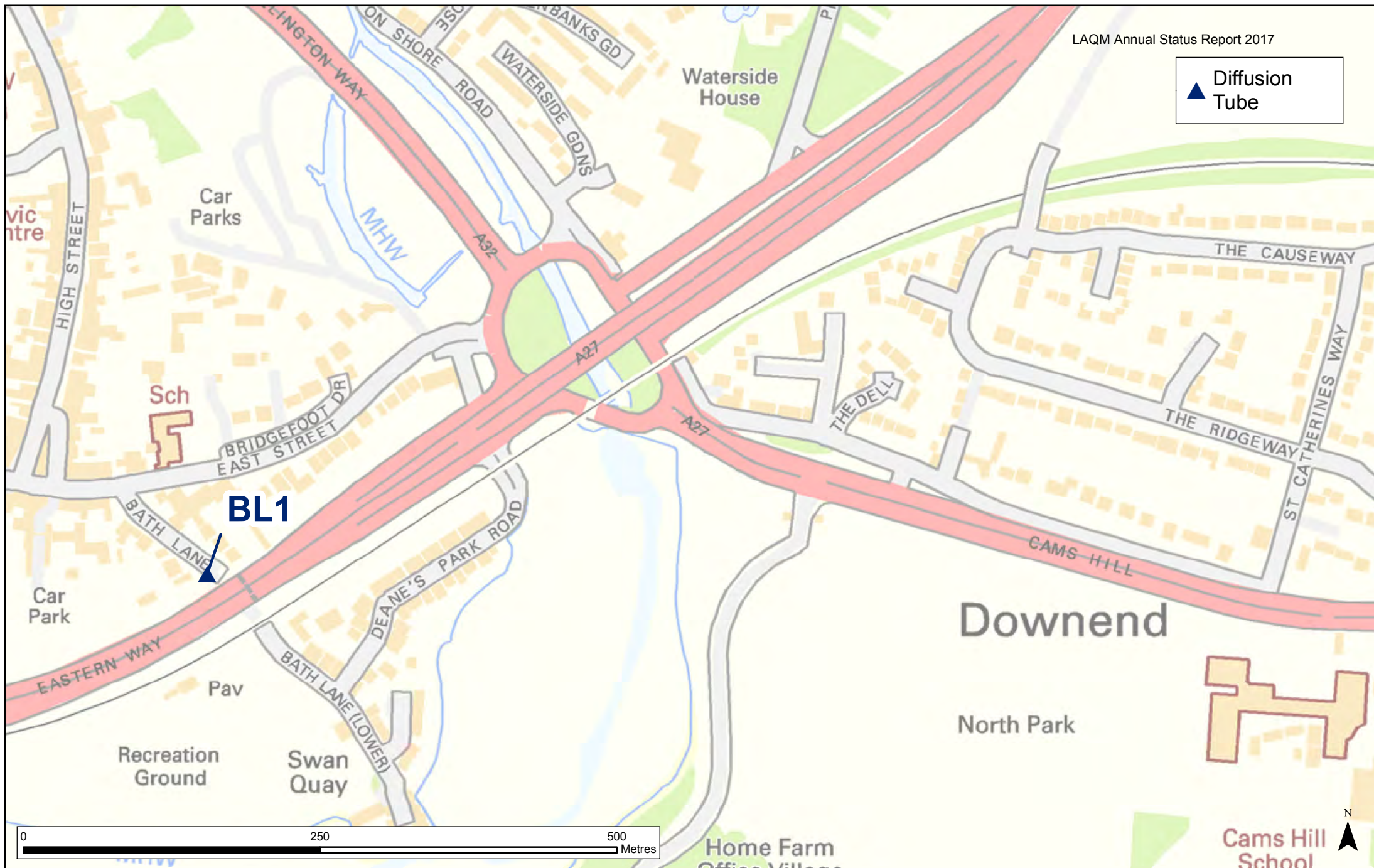
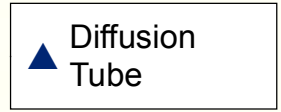


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 Diffusion Tube Monitoring Locations - Fleetlands

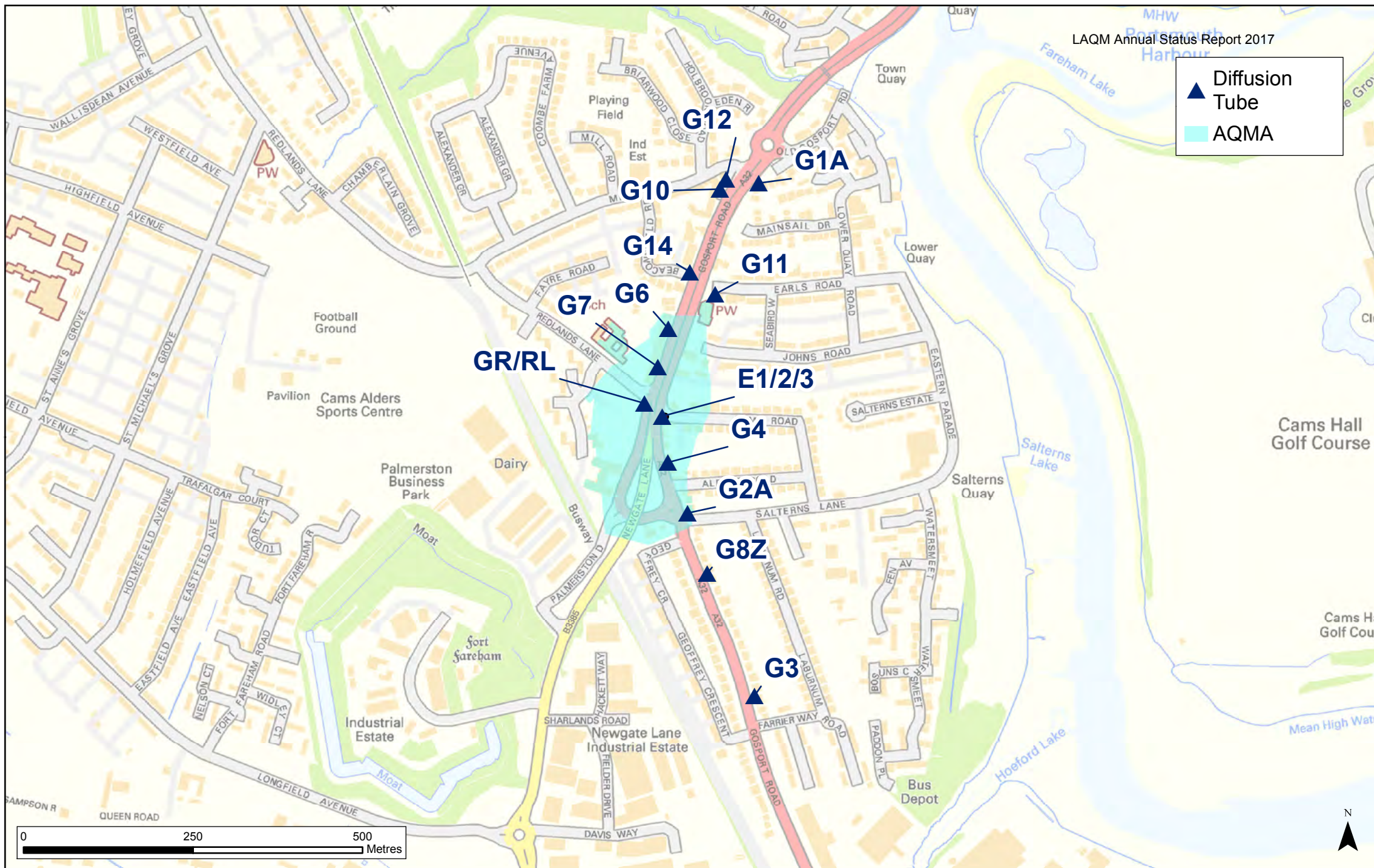


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▲ Diffusion Tube
 ■ AQMA



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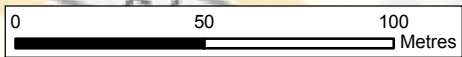
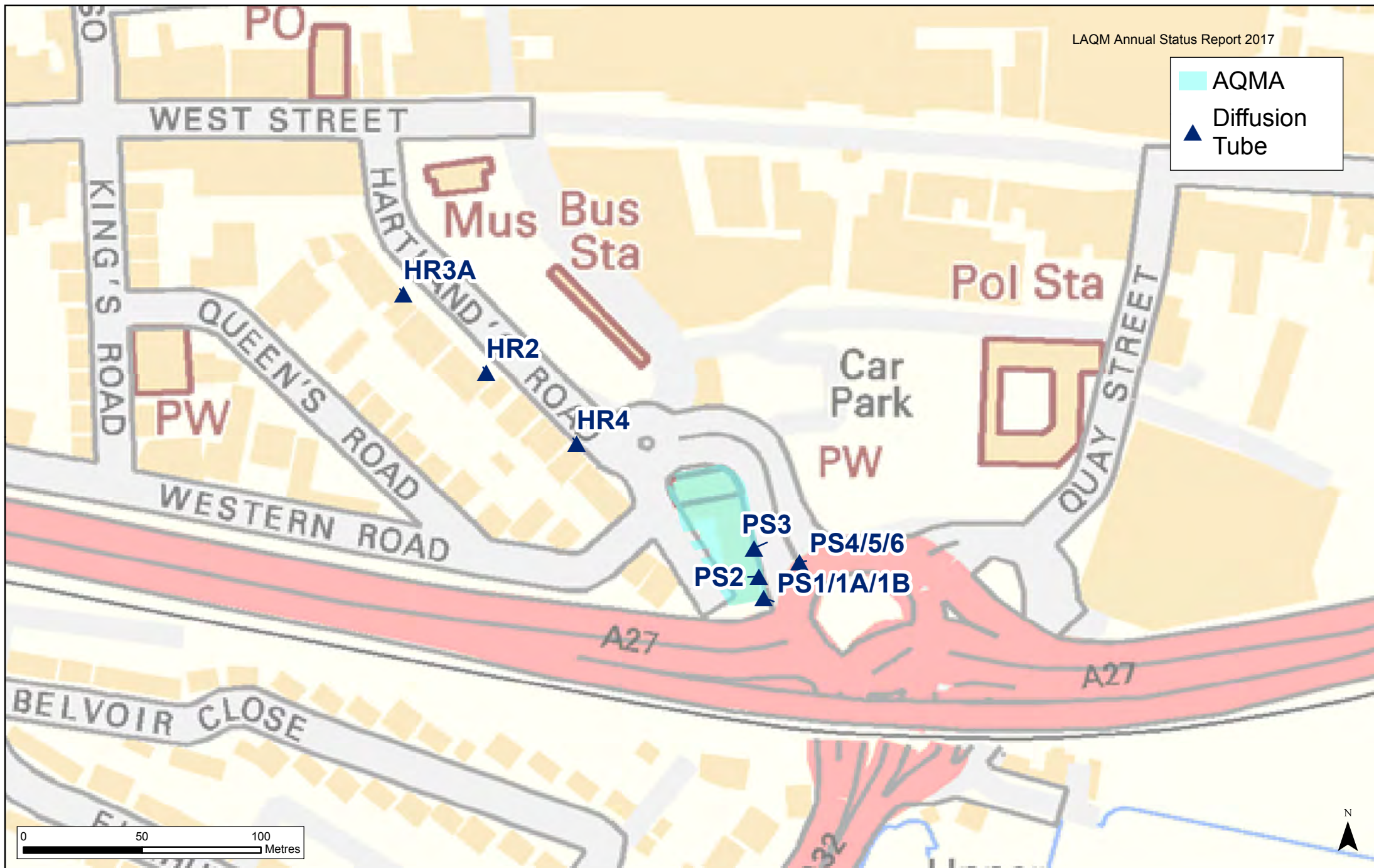


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■ AQMA
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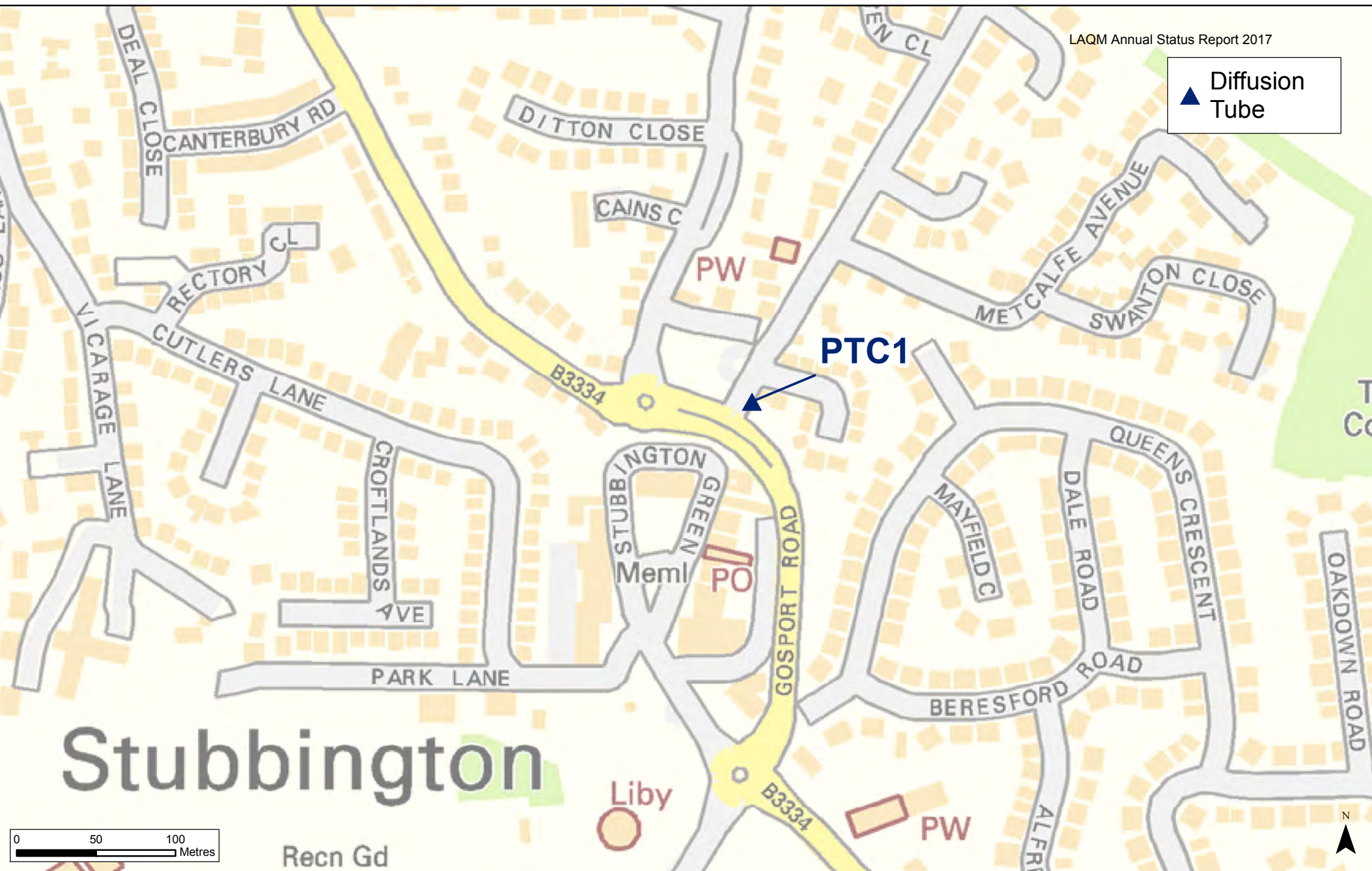
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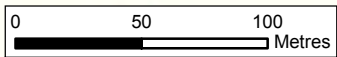
Diffusion Tube Monitoring Location - Hill Park

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▲ Diffusion Tube



Stubbington



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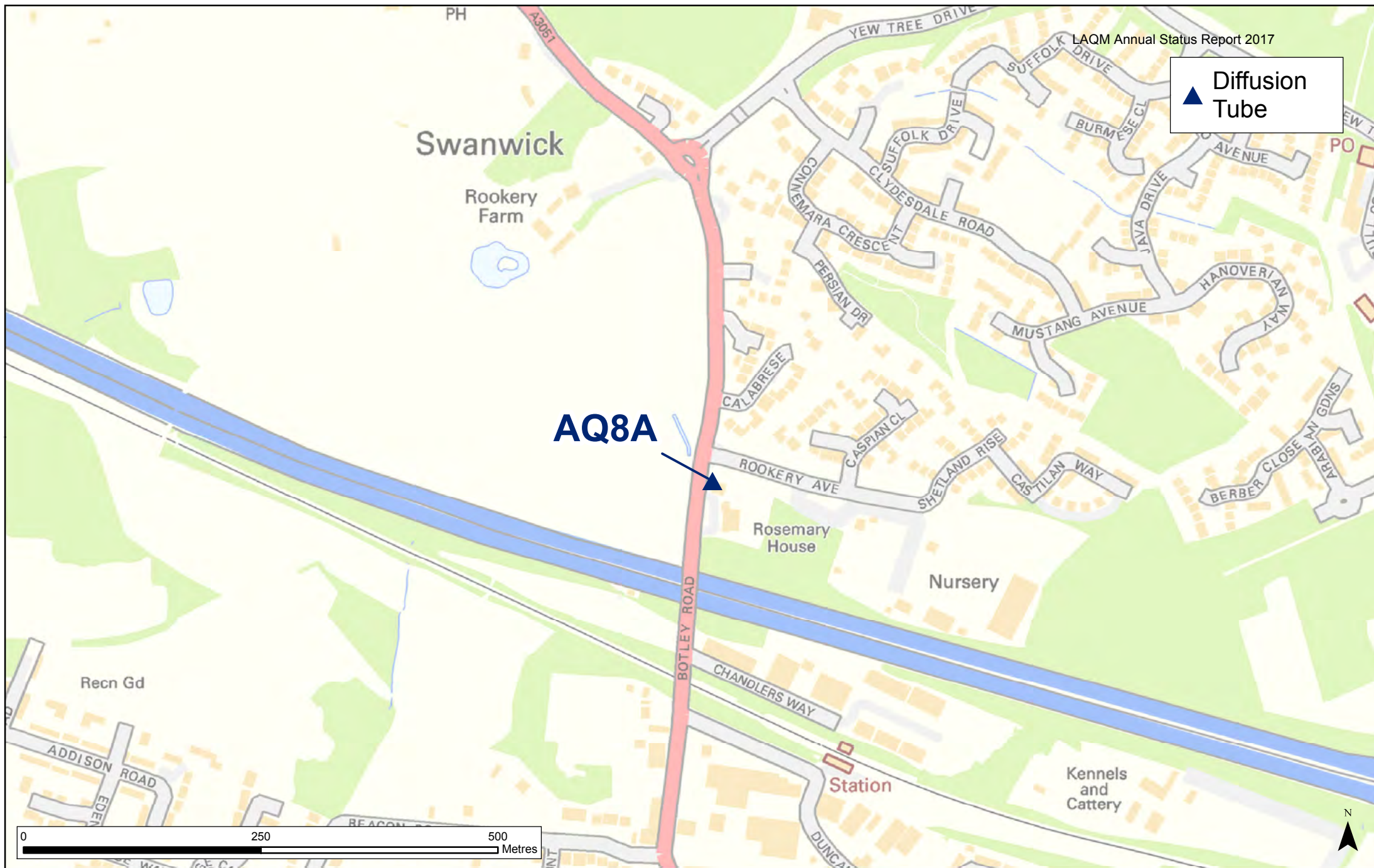
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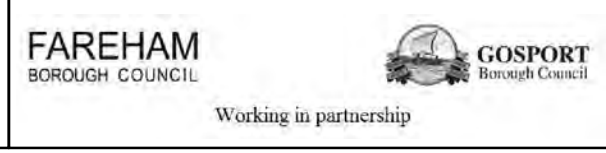
Diffusion Tube Monitoring Location - Stubbington

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