Folkestone & Hythe District Council

2023 Annual Status Report

Bureau Veritas

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2023 Air Quality Annual Status Report (ASR)

In fulfilment of Part IV of the Environment Act 1995

Local Air Quality Management, as amended by the Environment Act 2021

Date: June 2023

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Executive Summary: Air Quality in Our Area

Air Quality in Folkestone and Hythe District Council

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

The mortality burden of air pollution within the UK is equivalent to 29,000 to 43,000 deaths at typical ages[3], with a total estimated healthcare cost to the NHS and social care of £157 million in 2017[4].

The District of Folkestone and Hythe is situated in Kent on the south east coast of England, approximately 69 miles from London. The area occupies a key strategic position on the M20 as a gateway to continental Europe with the Channel Tunnel and London Ashford Airport all within its boundary. Folkestone and Hythe District contains an area of approximately 137 square miles and boasts a rich variety of charming landscape. More than 33% of the District falls within the Kent Downs Area of Outstanding Natural Beauty (AONB) and there are over 15 Sites of Special Scientific Interest (SSSI).

In comparison to the rural areas of the District, the largest urban area is the town of Folkestone, where approximately half of the District's population, exceeding 109,000, live. Other population centres within the District are Hythe, New Romney and Hawkinge.

The main source of pollution with the District is from road traffic emissions originating from major roads including the M20, A20, A259, A260 and A2034 that pass through the District. Due to the strategic nature of the road links, the majority of the vehicles are throughflow traffic, they do not start nor end their journeys within Folkestone and Hythe. Other pollution

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

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

[3] Defra. Air quality appraisal: damage cost guidance, January 2023

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

sources including commercial, industrial, and domestic sources also contribute to pollutant concentrations within the District.

Due to Folkestone and Hythe District Council's consistent years of no reported exceedances of the annual mean NO_2 AQS (Air Quality Standard), the area Is considered to have good air quality. As a result of this, there have never been any declared Air Quality Management Areas (AQMAs) within the District. The Council continues to review its monitoring network, deploying new monitoring sites in areas where there has either never been any monitoring conducted, or where there is a possibility of there being elevated NO_2 concentrations. Two new monitoring sites were deployed in 2020 (DT17 and 18), reporting concentrations well below the NO_2 AQS.

During 2022, there were no reported exceedances of the annual mean NO_2 AQS, this continues the trend of no exceedances over the last 6 years, therefore there is no requirement to declare an AQMA. The maximum reported NO_2 concentration was 25.1µg/m^3 at passive monitoring location DT4.

An increase in concentrations from 2021 – 2022 is reported within this report, ten passive monitoring sites underwent an increase, two fewer than the previous reporting year. The reduction in the number of increases reported compared to 2021 is likely due to the establishment of a 'new normal' in traffic volumes, with organisations remaining to facilitate 'Working From Home' (WFH) post COVID-19 pandemic restrictions relieving, thus reducing the number of vehicles comparative to pre-pandemic periods. The 2022 monitoring was somewhat induced to pre-pandemic traffic volumes, with UK COVID-19 restrictions lifting, therefore subject to increases in NO_2 concentrations from 2020 and 2021.

There are no diffusion tube monitoring sites where the NO_2 annual mean is greater than 60µg/m^3, therefore in accordance with Defra LAQM.TG(22) there are no sites likely to be at risk of exceeding the 1-hour mean AQS objective.

Actions to Improve Air Quality

Whilst air quality has improved significantly in recent decades, there are some areas where local action is needed to protect people and the environment from the effects of air pollution.

The Environmental Improvement Plan[5] sets out actions that will drive continued improvements to air quality and to meet the new national interim and long-term $PM_{2.5}$ targets. The National Air Quality Strategy, due to be published in 2023, will provide more information on local authorities' responsibilities to work towards these new targets and reduce $PM_{2.5}$ in their areas. The Road to Zero[6] details the approach to reduce exhaust emissions from road transport through a number of mechanisms; this is extremely important given that the majority of Air Quality Management Areas (AQMAs) are designated due to elevated concentrations heavily influenced by transport emissions.

Within Folkestone & Hythe District Council, since the initiation of the passive monitoring network, there has been no sites that have exceeded the AQS annual mean objective for NO_2. As a result, there are currently no designated AQMAs therefore an Air Quality Action Plan (AQAP) is not required. Additionally, there are currently no plans to produce an Air Quality Strategy (AQS) for the District.

The air quality in Folkestone and Hythe District is considered to be good, with air quality in 2022 displaying complete compliance with the AQS and following the same trend for the previous 6 years of monitoring. The Council will continue to monitor and assess the results for the coming year within the NO_2 diffusion tube network.

Folkestone and Hythe District Council are involved in a collaborative Kent local authorities project, where a joint bit for a DEFRA Air Quality Grant bid worth £175,675 was successful. The funding will facilitate the development of a digital training resource for Health Care Professionals (HCPs) across the Kent and Medway Group to provide training, local evidence and resources to enable practitioners to advise patients with Cardiovascular Disease (CVD) or respiratory disease on how to reduce their exposure to air pollution. Therefore, promoting an inclusive community and future collaboration by working with the health service to identify opportunities for improving education surrounding air quality, limiting emission source(s) use, and encouraging mortality longevity by outlining areas for improvement (e.g. reducing outdoor activity during a high pollution episode).

Folkestone and Hythe District Council are also working with councils across Kent as well as the National Health Service (NHS), to help residents save energy in their homes in turn

[5] Defra. Environmental Improvement Plan 2023, January 2023

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

supporting the reduction of pollutant release from gas stoves and limiting wood burner use, for example. The campaign was launched in November 2022 and is available to review: https://www.folkestone-hythe.gov.uk/col/share-the-warmth

Folkestone and Hythe District Council continue to progress with the Click2cycle innovative bike sharing service in Folkestone, Sandgate, and Hythe. The service was launched in June 2018 and continues to be endorsed with users able to rent a bike from any of the various Bike Hire Stations along a 5-mile route between Romney, Hythe and Dymchurch Light Railway in Hythe and Folkestone Harbour.

The Council remains actively encouraging large developers at the planning stage to install electric charging points or consider suitable infrastructure to allow for future cost-efficient installations.

As part of the Council's commitment to reduce the impacts of, and tackle climate change, the Council continues to progress and aim to hit net-zero carbon emissions by 2030 on Councils assets and fleets. Folkestone and Hythe District Council have set out 33 actions to reduce CO_2 emissions, which have shared benefits in reducing both NO_2 and PM emissions. The Council confirms the collaborative relationship with Kent County Council and five other local authorities to roll out a programme of charging points for electrical vehicles (EV) across the district, resulting in 132 EV charging points being implemented. The Council has also provided investment into purchasing battery-operated grounds maintenance equipment where suitable to replace petrol-powered equipment.

Conclusions and Priorities

During 2022, the passive monitoring results show that there were no exceedances of the annual mean objective of 40µg/m^3 for NO_2 within the of Folkestone and Hythe District. The Council will continue to use the passive monitoring network to monitor air quality within the district and ensure compliance is maintained with the AQS.

The following actions are considered to be key priorities in ensuring the air quality conditions within Folkestone and Hythe District continue to comply with the AQS objectives:

- Continue to review the current monitoring programme, exploring the need to deploy new monitoring locations in areas where monitoring has not previously been undertaken and where it is believed that there may be elevated concentrations of NO_2 in areas of relevant public exposure;

- Actively engage with large residential developers at planning application stages to promote the installation of electric vehicle charging or alternatively, provide suitable infrastructure to allow for future cost-efficient installations;
- To work in conjunction with the County Council to investigate the scope for the introduction of traffic management initiatives where appropriate, including lorry management and traffic speed control;
- Provide an integrated transport network to facilitate the efficient movement of pedestrian and vehicular traffic, goods, and services within the District;
- Continuation of improving accessibility to key services and facilities whilst directing development to sustainable locations in order to achieve sustainable development;
- Continue to reduce the volume of traffic on the District's roads by encouraging effective active transport methods (e.g. public transport, cycling, and walking) and by the careful integration of residential areas, shopping and recreational facilities, and the workplace; and
- Continue to be an active member of the Kent and Medway Air Quality Partnership.

Local Engagement and How to get Involved

Given the main source of air pollution within Folkestone and Hythe is from transport sources, the public can support the reduction in air pollutant(s) release and improve air quality within the District by participating in active travel.

Folkestone and Hythe District Council have progressed additional public engagement work in 2022 through the below schemes, although the engagement schemes in 2021 are still active:

- The collaborative relationship with the NHS to reduce energy use and associated pollutant release in private homes and via the HCP digital training resource, although still in development;
- The collaborative relationship with Kent County Council and five other local authorities to roll out a programme of charging points for electrical vehicles (EV) across the district, resulting in 132 EV charging points being implemented; and
- Investment into purchasing battery-operated grounds maintenance equipment where suitable to replace petrol-powered equipment.

The following measures are possible alternatives to private travel and actions that everyone can complete that would contribute to improving air quality within the District:

- Use public transport where available – This reduces the number of private vehicles in operation reducing pollutant concentration through the volume of vehicles and limits congestion;
- Walk or cycle if your journey allows – From choosing to walk or cycle for your journey the number of vehicles is reduced and also there is the added health benefits through exercise;
- Car/lift sharing – Where a number of individuals are making similar journeys, such as travelling to work or to school car sharing reduces the volume of vehicles on the road and therefore the amount of emissions being released. This can be promoted via travel plans through the workplace and within schools;
- Alternative fuel / more efficient vehicles – Choosing a vehicle that meets the specific needs of the owner, fully electric, hybrid fuel and more fuel efficient cars are available, and all have different levels benefits by reducing the amount of emissions being released; and
- Asking your employer, school or college about the possibility of developing a green travel plan.

Further information about air quality and pollutants can be found on the Council's website. Additional information on air quality monitoring data, details on the main pollutants associated with air quality, alongside an air quality email subscription service is available on the KentAir website.

Local Responsibilities and Commitment

This ASR was prepared by Bureau Veritas on behalf of the Environmental Health Department of Folkestone and Hythe District Council with the support and agreement of the following officers and departments:

Wai Tse, Environmental Protection Specialist, Environmental Health.

This ASR has been approved by:

Wai Tse, Environmental Protection Specialist, Environmental Health.

This ASR has not been signed off by a Director of Public Health.

If you have any comments on this ASR please send them to Wai Tse at: Folkestone & Hythe District Council, Civic Centre, Castle Hill Avenue, Folkestone, Kent, CT20 2QY. 01303 853550 - Wai.Tse@folkestone-hythe.gov.uk

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1 Local Air Quality Management

This report provides an overview of air quality in Folkestone and Hythe District Council during 2022. It fulfils the requirements of Local Air Quality Management (LAQM) as set out in Part IV of the Environment Act (1995), as amended by the Environment Act (2021), 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 order to achieve and maintain the objectives and the dates by which each measure will be carried out. This Annual Status Report (ASR) is an annual requirement showing the strategies employed by Folkestone and Hythe District Council to improve air quality and any progress that has been made.

The statutory air quality objectives applicable to LAQM in England are presented in Table E.1.

2 Actions to Improve Air Quality

2.1 Air Quality Management Areas

Air Quality Management Areas (AQMAs) are declared when there is an exceedance or likely exceedance of an air quality objective. After declaration, the authority should prepare an Air Quality Action Plan (AQAP) within 18 months. The AQAP should specify how air quality targets will be achieved and maintained, and provide dates by which measures will be carried out.

Folkestone & Hythe District Council does not have any declared AQMAs. A map of monitoring locations within the District is presented in Appendix D: Map(s) of Monitoring Locations and AQMAs.

2.2 Progress and Impact of Measures to address Air Quality in Folkestone and Hythe District Council

Defra's appraisal of last year's ASR concluded that:

"The report is well structured, detailed, and provides the information specified in the Guidance."

The following comments are designed to help inform future reports:

- *Some of the policy text, for example around the Environment Act, which was amended in 2021, is now outdated and so could be updated;*
  - The policy text has been updated and amended to reflect the changes;
- *The annual mean AQS objective for $PM_{2.5}$ of 25µg/m^3 should also be updated to 20µg/m^3;*
  - The AQS objective has been updated to 20µg/m^3;
- *The council have provided clear maps of the diffusion tube monitoring network; trends are displayed and discussed in the report, this is welcomed;*
- *There was a formatting error on the document, which resulted in the glossary of terms and references sections partially blurred;*
  - This has been corrected for the 2023 ASR submission;
- *There is discrepancy between some of the text and the tables, which makes it difficult to draw clear conclusions from the annualisation procedure. It is important that this error is addressed;*
  - Data and the reporting document have undergone a further QA/QC process to correct the previous error and ensure accuracy;
- *There was slight discrepancy between Table A.2 and Table C.2, this must be checked to ensure consistency in the data for future reports*;
  - Data and the reporting document have undergone a further QA/QC process to correct the previous error and ensure accuracy; and
- *The Council have provided a thorough account of actions they have implemented and plan to implement within the district to maintain good air quality, which given*

the already low concentrations monitored shows good practice and an aspiration for continual improvement.

Folkestone and Hythe District Council continues to use its monitoring network to review air quality is at a safe level, and to ensure that all residents have access to safe levels of air quality. New monitoring locations are positioned where the Council believes there may be elevated concentrations of NO_2 in areas of relevant public exposure, alongside areas where monitoring has not previously been undertaken. This proactive nature ensures that the Council can identify areas of potential concern at the nearest possible opportunity so that if required, effective mitigation measures can be implemented. This ensures that compliant levels of air quality are available to all of its residents.

Folkestone and Hythe District Council are employing many additional measures to help improve and progress air quality within their respected area. The 2022 ASR outlines the schemes and partnerships that Folkestone and Hythe District Council are involved in, these measures are still active for the 2022 reporting year.

There have also been additional measures implemented in the 2022 reporting year such as the collaborative relationship with the NHS to implement a strategy, established in November 2022, to reduce energy use and associated pollutant release in private homes from gas stoves and wood burners, for example. The Council has also enhanced its relationship with Kent County Council and five other local authorities to roll out a programme of charging points for electrical vehicles (EV) across the district, resulting in 132 EV charging points being implemented. Folkestone and Hythe District Council has also invested further into purchasing battery-operated grounds maintenance equipment where suitable to replace petrol-powered equipment in 2022, thus seeking to reduce pollutant emissions in the district.

Folkestone and Hythe District Council continues to be an active member of the Kent and Medway Air Quality Partnership. In 2020, the KentAir website was updated following a change of provider. It is possible to subscribe to an air quality email system, whereby an air pollution forecasts and alerts are emailed to the subscriber's inbox.

Folkestone and Hythe District Council has welcomed the Click2cycle innovative bike sharing service in Folkestone, Sandgate, and Hythe. The service was launched in June 2018 and continues to be endorsed. The scheme aims to replicate notable cycle sharing schemes often found in large metropolitan areas (e.g., Santander Cycles, Mobike, Lime). The Click2cycle scheme compliments the coastal cycling route, which stretches from Folkestone harbour to Dungeness in an attempted to promote alternative forms of travel which is

accessible to help its residents lead active lifestyles. In July 2020 Click2cycle has relaunched a bespoke app to allow easy hiring of bikes.

The Council is still actively encouraging large developers at the planning stage to install electric charging points or the consideration of suitable infrastructure to allow for future cost efficient installations.

The Council is aiming to hit net-zero carbon emissions by 2030 on Councils assets and fleets whilst also outlining 33 actions to reduce CO_2 emissions, with many measures having shared-benefits in reducing NO_2 and PM emissions.

The Council have launched a Local Cycling and Walking Infrastructure Plan (LCWIP) with the urban centres of Folkestone and Hythe being the focus of the LCWIP due to the concentration of population and trip generators that are reflective of the position that the two centres have at the top of the district's settlement hierarchy. The LCWIP will provide a new strategic approach to identifying cycling and walking improvements required at the local level. They enable a long-term approach to developing local cycling and walking networks, ideally over a 10-year period, and form a vital part of the Government's strategy to increase the number of trips made on foot or by cycle. The LCWIP has been prepared in consultation with Kent County Council as the Local Highway Authority. Kent County Council will be responsible for implementing the actions within the LCWIP.

Folkestone and Hythe have also launched the Active Travel Fund, which is a grant that supports local transport authorities with the development of cycling and walking facilities.

Within Folkstone & Hythe District Council, the extensive passive monitoring network have shown complete compliance with the AQS annual mean objective for NO_2. As a result, there is no requirement to declare an AQMA.

Folkestone and Hythe District Council expects the following measure to be completed over the course of the next reporting year: implementation of the digital training resource for Health Care Professionals (HCPs) across the Kent and Medway Group to provide training, local evidence and resources to enable practitioners to advise patients with Cardiovascular Disease (CVD) or respiratory disease on how to reduce their exposure to air pollution. Therefore, promoting an inclusive community and future collaboration by working with the health service to identify opportunities for improving education surrounding air quality, limiting emission source(s) use, and encouraging mortality longevity by outlining areas for improvement (e.g., reducing outdoor activity during a high pollution episode).

Folkestone and Hythe District Council worked to implement measures in partnership with the following stakeholders during 2022:

- National Health Service (NHS);
- Neighbouring local authorities; and
- Kent County Council.

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

As detailed in Policy Guidance LAQM.PG22 (Chapter 8), 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.

There is not currently any monitoring of PM_{10} or $PM_{2.5}$ within the district of Folkestone and Hythe. As such, no concentration values can be reported or estimated using the method described in Box 7.7 of LAQM.TG(22), which provides a for estimating $PM_{2.5}$ concentrations from PM_{10} measurements.

The current Defra background maps for Folkestone and Hythe (2018 reference year) show that all 2022 background concentrations of $PM_{2.5}$ are far below the recommended annual mean AQS objective for $PM_{2.5}$ of 20µg/m^3. The highest concentration is predicted to be 10.3µg/m^3 within the 1km x 1km grid square with the centroid grid reference of 622500, 136500. This is largely a residential area within Folkestone and includes much of the A259 and connecting junctions, alongside Folkestone Central railway station and the South Eastern Main Line.

The Public Health Outcomes Framework data tool compiled by Public Heath England quantifies the mortality burden of $PM_{2.5}$ within England on a county and local authority scale. The 2021 fraction of mortality attributable to $PM_{2.5}$ pollution (indicator D01) within Folkestone and Hythe District is 4.67%. This is lower than the regional average for the South East (5.44%) and for England as a whole (5.50%). The 2021 fraction of mortality has been used as opposed to the 2022 fraction as the data has not been made available at the time of writing.

Folkestone and Hythe District Council is taking the following measures to address $PM_{2.5}$:

- Actively encouraging large developers at the planning stage to install EV charging points or the consideration of suitable infrastructure to allow for future cost efficient installations;

- Implementation of 132 EV charging points throughout the district to encourage cleaner vehicle adoption;
- Replacement of Council owned petrol-powered grounds maintenance equipment with battery-operated tools;
- Continuation of the Click2cycle innovative bike sharing service in Folkestone, Sandgate, and Hythe to promote alternative forms of travel and reduce emissions;
- Launch of a Local Cycling and Walking Infrastructure Plan (LCWIP) to reduce the number of vehicle trips generated by Folkestone and Hythe areas and subsequent pollutant emission release, due to the high population concentrations and hierarchical positions in the district's settlements; and
- Launch of the Active Travel Fund, which is a grant that supports local transport authorities with the development of cycling and walking facilities, promoting active travel and supporting the reduction in vehicle volume and associated emission releases.

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

This section sets out the monitoring undertaken within 2022 by Folkestone and Hythe District Council and how it compares with the relevant air quality objectives. In addition, monitoring results are presented for a five-year period between 2018 and 2022 to allow monitoring trends to be identified and discussed.

3.1 Summary of Monitoring Undertaken

3.1.1 Automatic Monitoring Sites

Folkestone & Hythe District Council did not undertake automatic (continuous) monitoring during 2022.

3.1.2 Non-Automatic Monitoring Sites

Folkestone and Hythe District Council undertook non- automatic (i.e. passive) monitoring of NO_2 at 18 sites during 2022. Table A. 1 in Appendix A presents the details of the non-automatic sites.

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

3.2 Individual Pollutants

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

3.2.1 Nitrogen Dioxide (NO_2)

Table A. 1 and Table A. 2 in Appendix A compare the ratified and adjusted monitored NO_2 annual mean concentrations for the past five years with the air quality objective of 40µg/m^3. Note that the concentration data presented represents the concentration at the location of the monitoring site, following the application of bias adjustment and annualisation, as required (i.e. the values are exclusive of any consideration to fall-off with distance adjustment).

For diffusion tubes, the full 2022 dataset of monthly mean values is provided in Appendix B. Note that the concentration data presented in Table B. 1 includes distance corrected values, only where relevant. Additionally, the National Bias Adjustment Factor assumes monitoring is undertaken in accordance with the Defra calendar dates. It is noted that the monitoring dates do not coincide with the Defra calendar dates for April, May and December during the survey period. As such, there is a degree of uncertainty surrounding the monitoring results provided.

All monitoring sites within the district of Folkestone and Hythe continue to report annual mean NO_2 concentrations below the AQS objective, therefore all passive monitoring sites are compliant and not expected to exceed or be an area of concern. Due to the low monitored concentrations, fall-off with distance correction was not required. Following bias adjustment and annualisation where necessary, the maximum reported concentration in 2022 is 25.1µg/m^3 at diffusion tube monitoring location DT4, a roadside site, located along Black Bull Road (A259) in Folkestone. This location also reported the maximum concentration (26.2µg/m^3) in the 2022 report.

Figure A.1 presents the 2022 annual mean NO_2 concentrations at Folkestone and Hythe District Council's monitoring sites. Concentrations at sites DT1, DT4, DT7, DT9, DT11, DT16, and DT18 all decreased slightly during 2022 in comparison to 2021. Site DT2 recorded no change between 2021 and 2022 concentrations, reporting a value of 16.7 µg/m^3. Concentrations at the remaining locations (10) increased during 2022 in comparison to 2021. This is most likely attributable to a return to business as usual following the COVID-19 pandemic, where Government advice was given to stay at home where possible. This resulted in decreased levels of traffic observed across the UK, and as such, reduced NO_2 concentrations recorded during 2021.

It is possible to infer the risk of exceedances of the 1-hour mean NO_2 AQS objective at diffusion tube monitoring sites. LAQM.TG(22) provides an empirical relationship that states exceedances of the 1-hour objective are unlikely when the annual mean concentration is

below 60µg/m^3. Given that the highest recorded annual mean concentration at any of the diffusion tube monitoring sites is 25.1µg/m^3 in 2022, and 30.0µg/m^3 since 2018, it is possible to conclude that there have been no exceedances of the hourly mean NO_2 objective at all monitoring locations in the last five years.

Appendix A: Monitoring Results

Table A. 1 – Details of Non-Automatic Monitoring Sites

Diffusion Tube ID	Site Name	Site Type	X OS Grid Ref (Easting)	Y OS Grid Ref (Northing)	Pollutants Monitored	In AQMA? Which AQMA?	Distance to Relevant Exposure (m) (1)	Distance to kerb of nearest road (m) (2)	Tube Co-located with a Continuous Analyser?	Tube Height (m)
DT1	Cheriton Road	Roadside	622400	136100	NO_2	N	1.0	1.2	No	3.0
DT2	Cheriton Place	Roadside	622584	135820	NO_2	N	5.0	1.8	No	2.6
DT3	Wear Bay Road	Roadside	609964	135279	NO_2	N	11.5	3.0	No	3.5
DT4	Black Bull Road	Roadside	612900	138200	NO_2	N	1.0	5.0	No	3.0
DT5	Martello Cottages	Roadside	622734	136769	NO_2	N	7.0	10.0	No	2.5
DT6	Cold Harbour	Roadside	614552	134012	NO_2	N	N/A	N/A	No	2.0
DT7	Oak	Roadside	622396	136976	NO_2	N	6.0	3.5	No	2.6
DT8	Stanford North	Urban Background	612964	136190	NO_2	N	N/A	N/A	No	2.0
DT9	Cherry Garden Avenue	Roadside	621248	137352	NO_2	N	7.5	8.0	No	2.5
DT10	Martins Cottages	Roadside	604116	124888	NO_2	N	1.2	1.0	No	2.5
DT11	Hawking	Roadside	621436	139593	NO_2	N	1.2	1.0	No	3.0
DT12	Horn Street	Kerbside	618860	135899	NO_2	N	1.0	1.0	No	2.0
DT13	Kennett Lane	Rural	612481	137978	NO_2	N	91.0	0.0	No	2.0
DT14	Princes Parade	Roadside	618727	134797	NO_2	N	39.0	1.0	No	2.0
DT15	Dixiwell	Roadside	621361	135511	NO_2	N	15.0	0.0	No	2.0

Diffusion Tube ID	Site Name	Site Type	X OS Grid Ref (Easting)	Y OS Grid Ref (Northing)	Pollutants Monitored	In AQMA? Which AQMA?	Distance to Relevant Exposure (m) (1)	Distance to kerb of nearest road (m) (2)	Tube Co-located with a Continuous Analyser?	Tube Height (m)
DT16	Seabrook Road	Roadside	618680	134977	NO_2	N	8.0	0.0	No	2.0
DT17	St Andrews Road	Roadside	608206	124832	NO_2	N	21.5	0.0	No	2.0
DT18	Littlestone Road	Roadside	607675	124699	NO_2	N	16.3	0.0	No	2.0

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– Annual Mean NO_2 Monitoring Results: Non-Automatic Monitoring (µg/m³)

Diffusion Tube ID	X OS Grid Ref (Easting)	Y OS Grid Ref (Northing)	Site Type	Valid Data Capture for Monitoring Period (%) (1)	Valid Data Capture 2022 (%) (2)	2018	2019	2020	2021	2022
DT1	622400	136100	Roadside	99.5	99.5	25.4	21.0	18.3	21.6	20.0
DT2	622584	135820	Roadside	99.5	99.5	19.6	25.7	15.6	16.7	16.7
DT3	609964	135279	Roadside	99.5	99.5	17.2	17.7	14.2	13.2	15.0
DT4	612900	138200	Roadside	99.5	99.5	29.7	27.9	22.6	26.2	25.1
DT5	622734	136769	Roadside	91.9	91.9	23.2	25.3	19.6	20.9	21.0
DT6	614552	134012	Roadside	88.1	88.1	12.0	11.8	9.7	9.9	10.8
DT7	622396	136976	Roadside	99.5	99.5	21.3	22.4	13.9	16.0	15.9
DT8	612964	136190	Urban Background	99.5	99.5	18.1	17.8	13.7	12.6	13.0
DT9	621248	137352	Roadside	99.5	99.5	28.8	30.0	19.7	23.2	22.2
DT10	604116	124888	Roadside	99.5	99.5	16.5	16.6	13.1	14.0	14.4
DT11	621436	139593	Roadside	99.5	99.5	19.8	19.3	14.5	16.8	16.0
DT12	618860	135899	Kerbside	90.0	90.0	18.8	16.2	14.1	14.7	14.8
DT13	612481	137978	Rural	90.6	90.6	16.7	13.6	10.9	10.8	11.0
DT14	618727	134797	Roadside	91.9	91.9	15.8	16.3	12.9	13.2	14.0
DT15	621361	135511	Roadside	88.1	88.1	-	24.3	20.1	20.2	20.3
DT16	618680	134977	Roadside	31.0	31.0	-	18.1	14.4	18.0	15.8
DT17	608206	124832	Roadside	99.5	99.5	-	-	9.9	9.6	9.8
DT18	607675	124699	Roadside	94.9	94.9	-	-	14.0	15.3	12.6

☒ **Annualisation has been conducted where data capture is <75% and >25% in line with LAQM.TG22.**

☒ **Diffusion tube data has been bias adjusted.**

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

Notes:

The annual mean concentrations are presented as µg/m³.

Exceedances of the NO_2 annual mean objective of 40µg/m³ are shown in **bold**.

NO_2 annual means exceeding 60µg/m³, indicating a potential exceedance of the NO_2 1-hour mean objective are shown in **bold and underlined**.

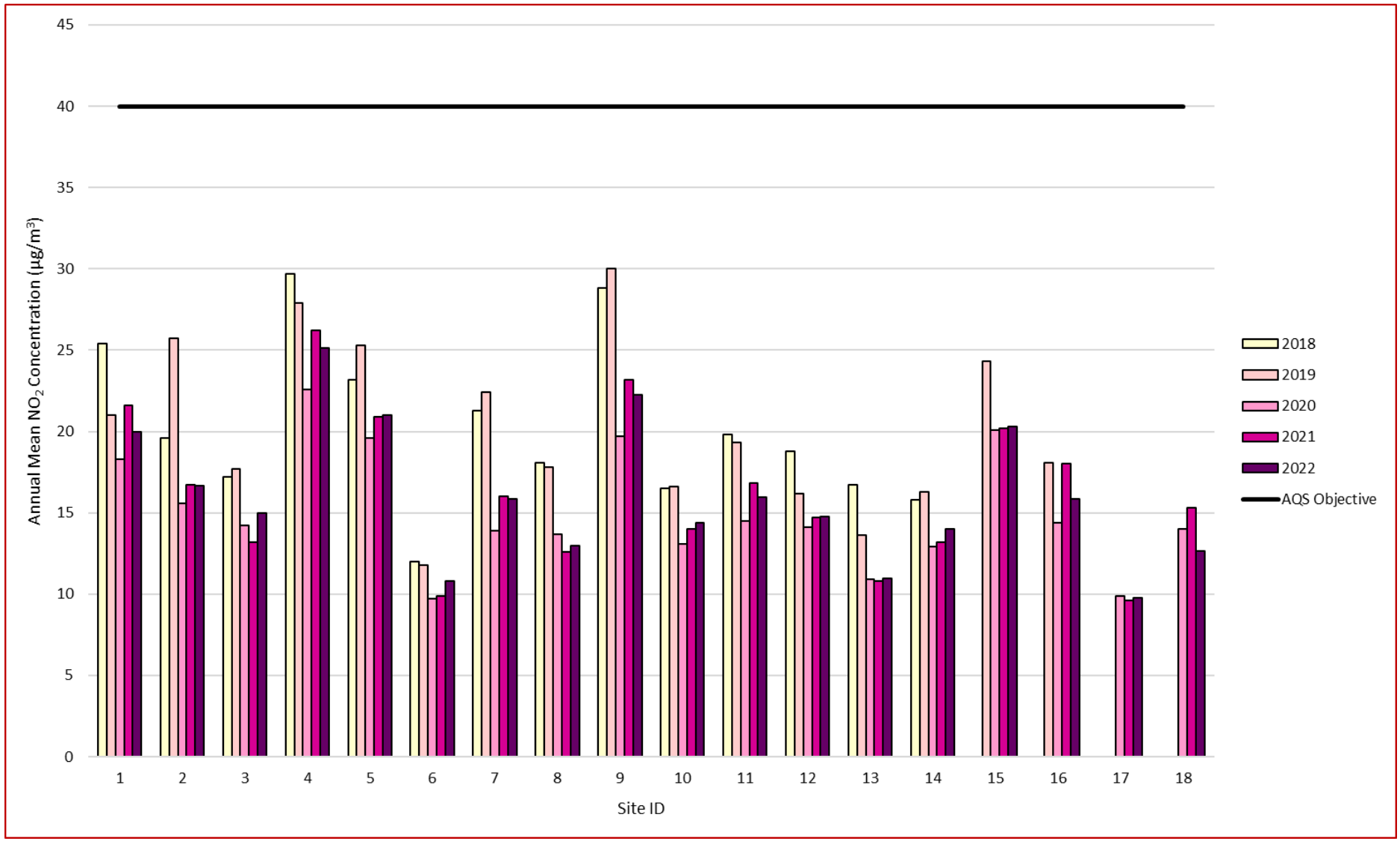
Means for diffusion tubes have been corrected for bias. All means have been “annualised” as per LAQM.TG22 if valid data capture for the full calendar year is less than 75%. See Appendix C for details.

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

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

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

Figure A.1 – Trends in Annual Mean NO_2 Concentrations



Appendix B: Full Monthly Diffusion Tube Results for 2022

Table B. 1– NO_2 2022 Diffusion Tube Results (µg/m^3)

DT ID	X OS Grid Ref (Easting)	Y OS Grid Ref (Northing)	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual Mean: Raw Data	Annual Mean: Annualised and Bias Adjusted (0.76)	Annual Mean: Distance Corrected to Nearest Exposure	Comment
DT1	622400	136100	**44.7**	22.1	31.4	32.3	22.6	18.7	26.6	29.4	24.2	25.4	26.7	19.2	26.3	20.0		
DT2	622584	135820	31.0	16.9	28.7	32.2	19.2	19.5	24.4	24.9	20.1	17.7	17.2	18.8	21.9	16.7		
DT3	609964	135279	27.1	16.2	22.0	28.6	19.8	16.9	23.4	20.9	17.0	16.1	16.9	17.2	19.7	15.0		
DT4	612900	138200	**42.7**	25.1	**41.0**	39.9	30.2	32.8	35.7	38.5	32.7	28.1	32.1	26.7	33.1	25.1		
DT5	622734	136769	34.8	23.2	22.0	34.6	24.7	24.0	29.0	-	27.6	35.0	22.1	29.8	27.6	21.0		
DT6	614552	134012	33.5	13.9	15.4	14.0	10.0	10.5	12.3	15.0	10.5	13.2	10.4	-	14.2	10.8		
DT7	622396	136976	18.6	19.8	25.0	23.1	25.5	15.0	21.9	21.1	18.9	22.4	18.6	19.1	20.9	15.9		
DT8	612964	136190	24.4	19.0	18.6	17.8	13.9	17.5	17.3	18.2	14.8	17.7	12.2	15.3	17.1	13.0		
DT9	621248	137352	37.7	28.9	32.1	28.7	29.3	25.0	26.7	28.1	32.0	29.7	27.6	26.2	29.2	22.2		
DT10	604116	124888	24.1	13.5	34.3	23.9	18.4	16.7	21.1	23.4	18.0	13.5	11.8	13.2	18.9	14.4		
DT11	621436	139593	28.5	19.2	24.5	21.3	17.7	18.8	19.9	19.7	19.2	23.2	16.4	23.2	21.0	16.0		
DT12	618860	135899	22.9	19.0	26.2	25.0	18.5	18.0	25.0	23.2	17.2	-	14.7	10.1	19.4	14.8		
DT13	612481	137978	21.6	-	19.9	17.9	10.5	8.7	10.9	11.4	12.7	14.1	12.2	19.1	14.4	11.0		
DT14	618727	134797	-	14.8	17.3	23.8	15.6	15.6	19.0	22.4	18.6	18.8	19.1	20.6	18.4	14.0		
DT15	621361	135511	**40.6**	27.7	30.1	29.3	-	20.8	25.9	24.2	25.7	26.6	25.7	20.6	26.7	20.3		
DT16	618680	134977	32.6	20.7	-	-	-	-	-	-	20.2	-	20.4	-	23.4	15.8		
DT17	608206	124832	20.3	11.8	15.3	20.9	13.3	10.6	15.0	12.9	9.2	10.5	3.9	13.6	12.9	9.8		
DT18	607675	124699	29.0	17.0	24.8	-	18.2	14.2	5.9	21.5	17.7	15.6	13.0	8.3	16.6	12.6		

☒ **All erroneous data has been removed from the NO_2 diffusion tube dataset presented in Table B.1**.

☒ **Annualisation has been conducted where data capture is <75% and >25% in line with LAQM.TG22.**

☐ **Local bias adjustment factor used.**

☒ **National bias adjustment factor used.**

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

☒ **Folkestone and Hythe District Council confirm that all 2022 diffusion tube data has been uploaded to the Diffusion Tube Data Entry System.**

Notes:

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

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

See Appendix C for details on bias adjustment and annualisation.

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

New or Changed Sources Identified Within Folkestone and Hythe District Council During 2022

Folkestone and Hythe District Council has identified one potential new source relating to air quality within the reporting year of 2022. Otterpool Park has planning permission approved and is proposed as a Garden Town located in the Kent Countryside close to the seaside town of Folkestone. It is a long-term project spanning at least 30 years that will provide a mix of housing, business premises and high quality open space. The development will provide 8,500 homes, a new town centre, shops, leisure, educational and cultural facilities and employment. An Air Quality Assessment (AQA) undertaken has outlined that it is not expected to significantly impact the air quality objectives within the district.

Additional Air Quality Works Undertaken by Folkestone and Hythe During 2022

Folkestone and Hythe District Council has not completed any additional works within the reporting year of 2022.

QA/QC of Diffusion Tube Monitoring

Folkestone and Hythe District Council's diffusion tubes in 2022 were supplied and analysed by SOCOTEC Didcot, using the 50% Triethanolamine (TEA) in acetone preparation method. SOCOTEC's laboratory is UKAS accredited, participating in the AIR-PT Scheme for NO_2 tube analysis and the Annual Field Inter-Comparison Exercise. These provide strict performance criteria for participating laboratories to meet, thereby ensuring NO_2 concentrations reported are of a high calibre. The lab follows the procedures set out in the Harmonisation Practical Guidance. In the AIR PT intercomparison scheme for comparing spiked Nitrogen Dioxide diffusion tubes, SOCOTEC currently holds the highest rank of a 'Satisfactory' laboratory.

Local authority co-location studies which use tubes supplied by SOCOTEC with the 50% TEA in acetone preparation method in 2022, with 26 studio rated as ‘good’, as shown by the precision summary results. This precision reflects the laboratory’s performance and consistency in preparing and analysing the tubes, as well as the subsequent handling of the tubes in the field. Tubes are considered to have a “good” precision where the coefficient of variation of duplicate or triplicate diffusion tubes for eight or more monitoring periods during a year is less than 20%.

Monitoring in 2022 was somewhat completed in adherence with the 2022 Diffusion Tube Monitoring Calendar, whereby all changeovers were completed within ±2 days of the specified date with the exception of April and May (shorter than the recommended period (-4 days)) and December (longer than the recommended period (+4 days)).

Diffusion Tube Annualisation

The LAQM.TG22 states that annualisation is required for any site which has a data capture of less than 75%, but greater than 25%. Diffusion tube site DT16 required annualisation due to insufficient data capture in 2022 (33.3%). Annualisation was completed using version 3.0 of the ‘Diffusion Tube Data Processing Tool’. Due to there being insufficient continuous monitoring data, the four nearest AURN monitoring stations selected to annualise the data are:

- Canterbury;
- Rochester Stoke;
- Eastbourne; and
- St Osyth

During annualisation, Eastbourne recorded less than 85% data capture so was excluded from the process. The remaining continuous background monitoring sites were applicable to use as they all had >85% data capture and therefore could be used for annualisation. Table C.1 presents the annualisation summary, taken from the ‘Diffusion Tube Data Processing Tool’.

Table C. 1 – Annualisation Summary (concentrations presented in µg/m^3)

Site ID	Annualisation Factor St Osyth	Annualisation Factor Canterbury Military Road	Annualisation Factor Rochester Stoke	Average Annualisation Factor	Raw Data Annual Mean	Annualised Annual Mean
DT16	0.0684	0.8825	0.9206	0.8905	23.4	20.8

Diffusion Tube Bias Adjustment Factors

The diffusion tube data presented within the 2022 ASR have been corrected for bias using an adjustment factor. Bias represents the overall tendency of the diffusion tubes to under or over-read relative to the reference chemiluminescence analyser. LAQM.TG22 provides guidance with regard to the application of a bias adjustment factor to correct diffusion tube monitoring. Triplicate co-location studies can be used to determine a local bias factor based on the comparison of diffusion tube results with data taken from NO_x/NO_2 continuous analysers. Alternatively, the national database of diffusion tube co-location surveys provides bias factors for the relevant laboratory and preparation method.

Folkestone and Hythe District Council have applied a national bias adjustment factor of 0.76 to the 2022 monitoring data. A summary of bias adjustment factors used by Folkestone and Hythe District Council over the past five years is presented in Table C. 2.

No co-location studies are carried out by Folkestone and Hythe District Council therefore only a national factor can be applied. The national factor for SOCOTEC Didcot 50% TEA in acetone, as presented in the Diffusion Tube Bias Factors Spreadsheet v03_23, was 0.76 based on 26 studies. The National Bias Adjustment Spreadsheet is presented in Figure C. 1.

Table C. 2– Bias Adjustment Factor

Monitoring Year	Local or National	If National, Version of National Spreadsheet	Adjustment Factor
2022	National	03/23	0.76
2021	National	03/22	0.78
2020	National	09/19	0.76
2019	National	06/18	0.75
2018	National	09/17	0.76

NO_2 Fall-off with Distance from the Road

Wherever possible, monitoring locations are representative of exposure. However, where this is not possible, the NO_2 concentration at the nearest location relevant for exposure has been estimated using the Diffusion Tube Data Processing Tool/NO_2 fall-off with distance calculator available on the LAQM Support website.

No diffusion tube NO_2 monitoring locations within Folkestone and Hythe District Council required distance correction during 2022.

Figure C. 1 – National Bias Adjustment Factor Spreadsheet (03/23)

National Diffusion Tube Bias Adjustment Factor Spreadsheet — Spreadsheet Version Number: 03/23

Follow the steps below **in the correct order** to show the results of **relevant** co-location studies
Data only apply to tubes exposed monthly and are not suitable for correcting individual short-term monitoring periods
Whenever presenting adjusted data, you should state the adjustment factor used and the version of the spreadsheet
This spreadhseet will be updated every few months: the factors may therefore be subject to change. This should not discourage their immediate use.

This spreadsheet will be updated at the end of June 2023

LAQM Helpdesk Website

The LAQM Helpdesk is operated on behalf of Defra and the Devolved Administrations by Bureau Veritas, in conjunction with contract partners AECOM and the National Physical Laboratory.

Spreadsheet maintained by the National Physical Laboratory. Original compiled by Air Quality Consultants Ltd.

Step 1: Select the Laboratory that Analyses Your Tubes from the Drop-Down List

If a laboratory is not shown, we have no data for this laboratory.

Step 2: Select a Preparation Method from the Drop-Down List

If a preparation method is not shown, we have no data for this method at this laboratory.

Step 3: Select a Year from the Drop-Down List

If a year is not shown, we have no data[2]

Step 4:

Where there is only one study for a chosen combination, you should use the adjustment factor shown with caution. Where there is more than one study, use the overall factor[3] shown in blue at the foot of the final column.

If you have your own co-location study then see footnote[4]. If uncertain what to do then contact the Local Air Quality Management Helpdesk at LAQMHelpdesk@bureauveritas.com or 0800 0327953

Analysed By[1]	Method	Year[5]	Site Type	Local Authority	Length of Study (months)	Diffusion Tube Mean Conc. (Dm) (µg/m³)	Automatic Monitor Mean Conc. (Cm) (µg/m³)	Bias (B)	Tube Precision[6]	Bias Adjustment Factor (A) (Cm/Dm)
Socotec Didcot	50% TEA in acetone	2022	UB	Torfaen County Borough Council	13	13	10	33.4%	G	**0.75**
Socotec Didcot	50% TEA in acetone	2022	R	Bridgend Council	12	37	27	40.6%	G	**0.71**
Socotec Didcot	50% TEA in Acetone	2022	R	Cardiff Council / Shared Regulatory Services	11	42	33	27.3%	G	**0.79**
Socotec Didcot	50% TEA in Acetone	2022	R	Dacorum Borough Council	12	24	18	30.8%	G	**0.76**
Socotec Didcot	50% TEA in Acetone	2022	UB	Gravesham Borough Council	11	22	18	19.6%	G	**0.84**
Socotec Didcot	50% TEA in Acetone	2022	UB	Gravesham Borough Council	11	26	22	17.0%	G	**0.85**
Socotec Didcot	50% TEA in acetone	2022	R	Kingston Upon Hull City Council	12	30	23	27.3%	G	**0.78**
Socotec Didcot	50% TEA in acetone	2022	UB	Kingston Upon Hull City Council	12	24	18	35.0%	G	**0.74**
SOCOTEC Didcot	50% TEA in acetone	2022	UB	City Of York Council	12	16	13	31.6%	G	**0.76**
SOCOTEC Didcot	50% TEA in acetone	2022	R	City Of York Council	12	25	19	28.7%	G	**0.78**
SOCOTEC Didcot	50% TEA in acetone	2022	R	City Of York Council	11	23	17	37.2%	G	**0.73**
SOCOTEC Didcot	50% TEA in acetone	2022	R	City Of York Council	11	37	27	37.6%	G	**0.73**
SOCOTEC Didcot	50% TEA in acetone	2022	R	East Suffolk Council	11	32	23	38.6%	G	**0.72**
SOCOTEC Didcot	50% TEA in acetone	2022	R	Ipswich Borough Council	11	42	28	50.4%	G	**0.66**
SOCOTEC Didcot	50% TEA in acetone	2022	KS	Marylebone Road Intercomparison	12	60	42	40.7%	G	**0.71**
SOCOTEC Didcot	50% TEA in acetone	2022	R	North East Lincolnshire Council	10	46	31	49.4%	G	**0.67**
SOCOTEC Didcot	50% TEA in acetone	2022	R	North East Lincolnshire Council	10	28	27	3.7%	G	**0.96**
SOCOTEC Didcot	50% TEA in acetone	2022	R	Wrexham County Borough Council	12	16	14	15.5%	G	**0.87**
SOCOTEC Didcot	50% TEA in Acetone	2022	R	Horsham District Council	11	25	22	14.4%	G	**0.87**
SOCOTEC Didcot	50% TEA in acetone	2022	R	Leeds City Council	12	40	29	37.8%	G	**0.73**
SOCOTEC Didcot	50% TEA in acetone	2022	KS	Leeds City Council	11	33	23	44.6%	G	**0.69**
SOCOTEC Didcot	50% TEA in acetone	2022	R	Leeds City Council	12	43	34	26.0%	G	**0.79**
SOCOTEC Didcot	50% TEA in acetone	2022	R	Leeds City Council	11	41	30	34.2%	G	**0.75**
SOCOTEC Didcot	50% TEA in acetone	2022	R	Leeds City Council	12	30	22	36.3%	G	**0.73**
SOCOTEC Didcot	50% TEA in acetone	2022	UC	Leeds City Council	12	30	22	34.1%	G	**0.75**
SOCOTEC Didcot	50% TEA in Acetone	2022	R	Thanet District Council	12	23	17	29.1%	G	**0.77**
SOCOTEC Didcot	50% TEA in acetone	2022		**Overall Factor[3] (26 studies)**				**Use**		**0.76**

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

Figure D. 1 – Map of All Non-Automatic Monitoring Sites across Folkestone and Hythe District Council

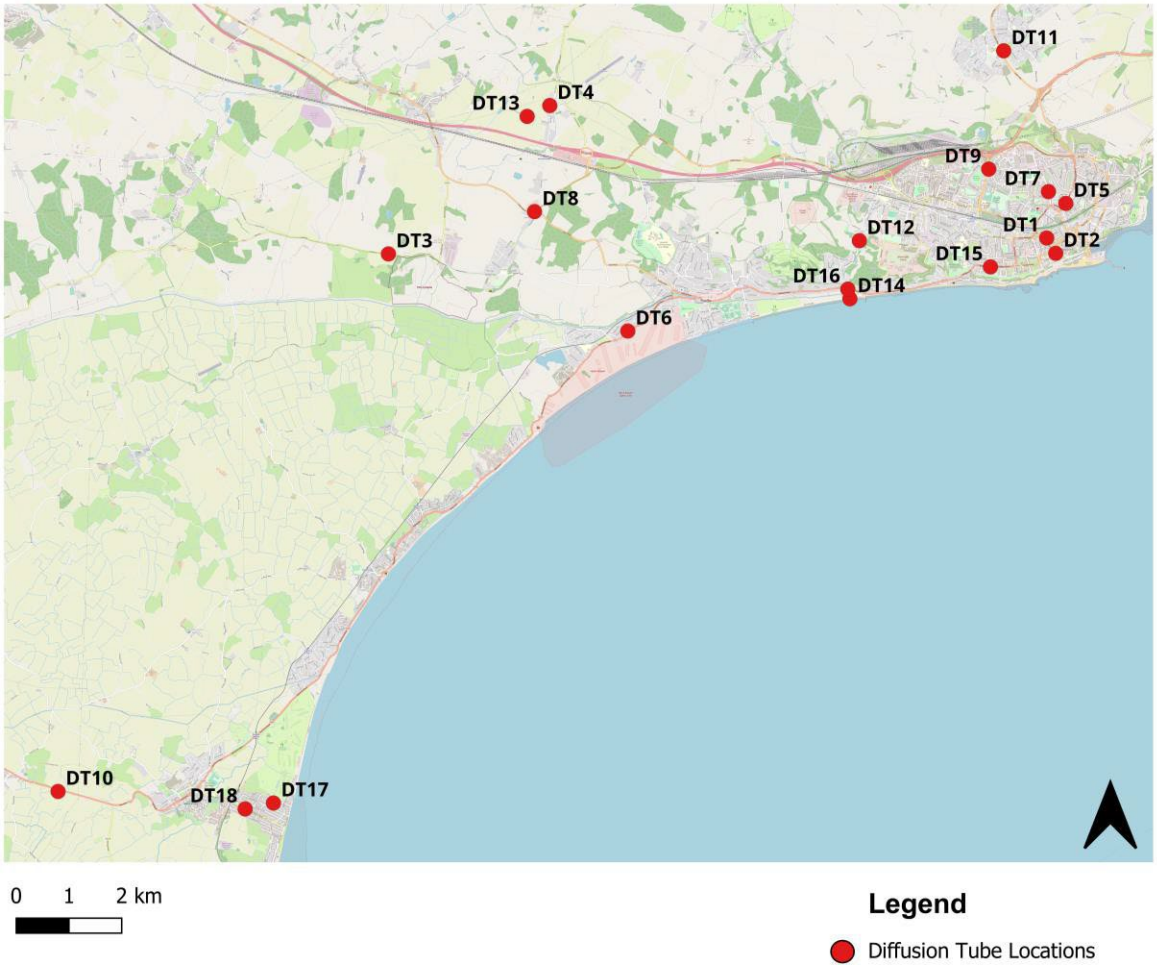


Figure D. 2 – Map of All Non-Automatic Monitoring Sites near Lympne

Figure D. 3 – Map of All Non-Automatic Monitoring Sites in Folkestone

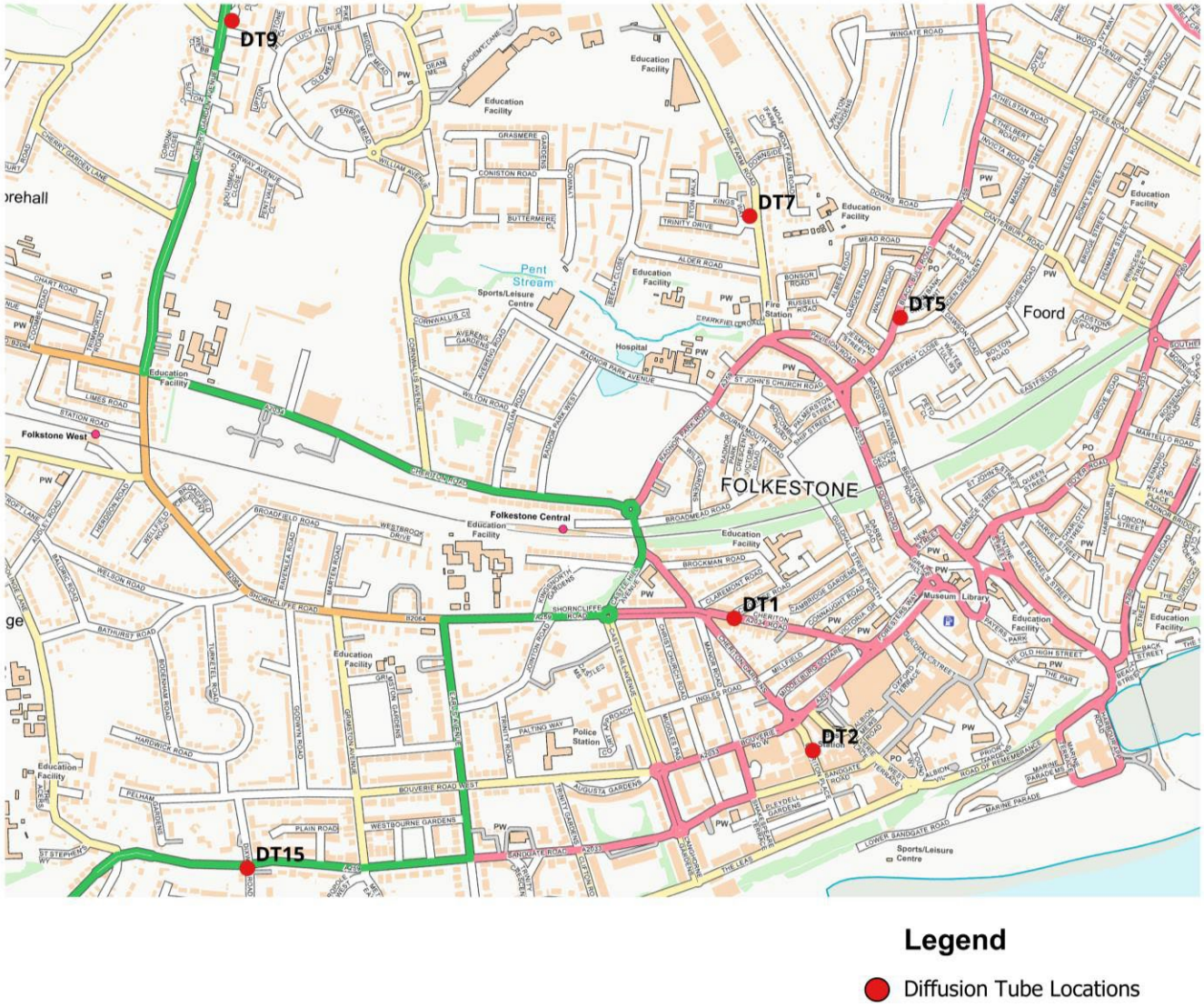


Figure D. 4 – Map of All Non-Automatic Monitoring Sites in Hawkinge

Figure D. 5 – Map of All Non-Automatic Monitoring Sites in Pennypot

Figure D. 6 – Map of All Non-Automatic Monitoring Sites in Romney

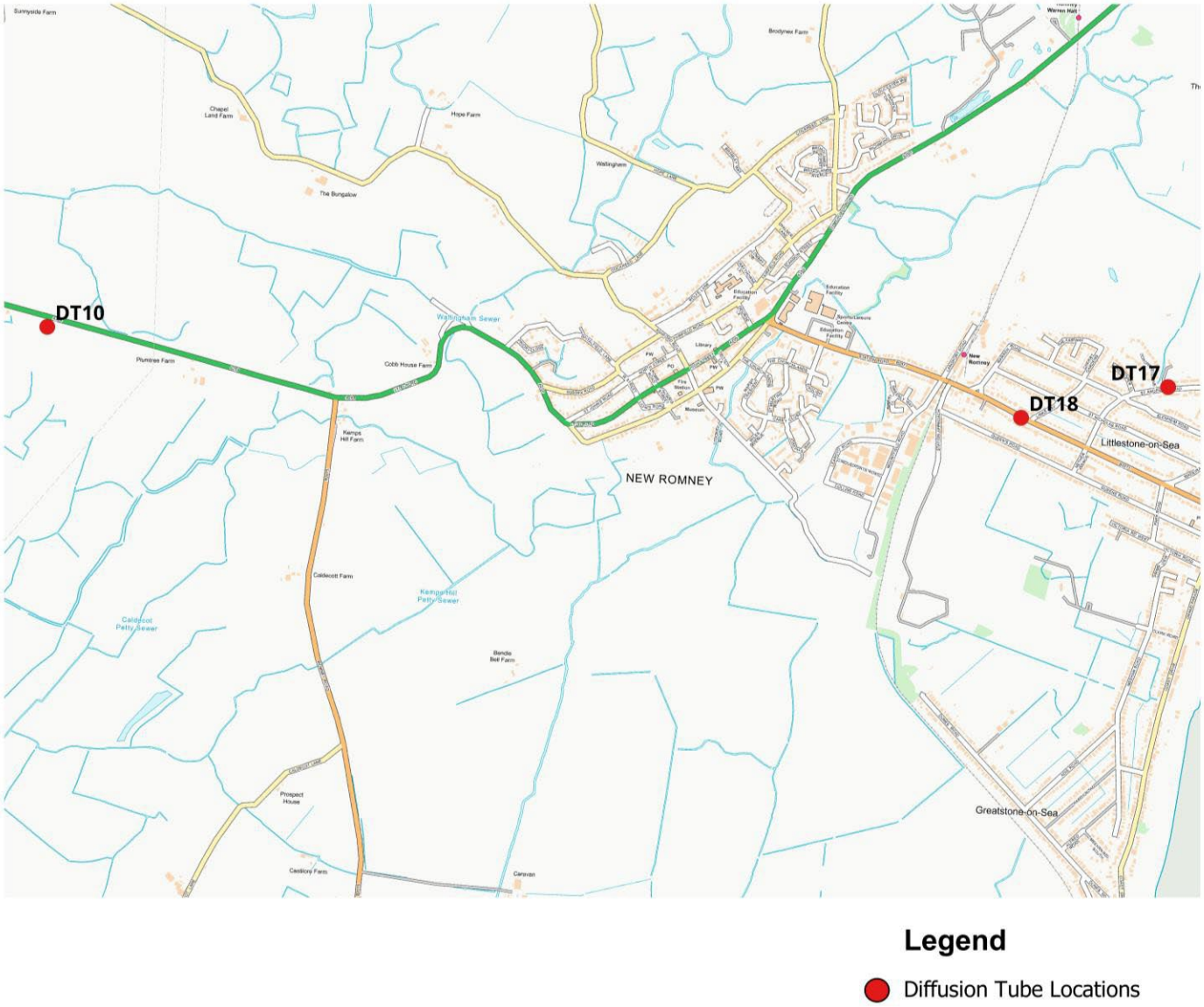


Figure D. 7 – Map of All Non-Automatic Monitoring Sites in Seabrook

Figure D. 8 – Map of All Non-Automatic Monitoring Sites in Stanford

Appendix E: Summary of Air Quality Objectives in England

Table E.1 – Air Quality Objectives in England[7]

Pollutant	Air Quality Objective: Concentration	Air Quality Objective: Measured as
Nitrogen Dioxide (NO_2)	200µg/m^3 not to be exceeded more than 18 times a year	1-hour mean
Nitrogen Dioxide (NO_2)	40µg/m^3	Annual mean
Particulate Matter (PM_{10})	50µg/m^3, not to be exceeded more than 35 times a year	24-hour mean
Particulate Matter (PM_{10})	40µg/m^3	Annual mean
Sulphur Dioxide (SO_2)	350µg/m^3, not to be exceeded more than 24 times a year	1-hour mean
Sulphur Dioxide (SO_2)	125µg/m^3, not to be exceeded more than 3 times a year	24-hour mean
Sulphur Dioxide (SO_2)	266µg/m^3, not to be exceeded more than 35 times a year	15-minute mean

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

Glossary of Terms

Abbreviation	Description
AQAP	Air Quality Action Plan - A detailed description of measures, outcomes, achievement dates and implementation methods, showing how the local authority intends to achieve air quality limit values'
AQMA	Air Quality Management Area – An area where air pollutant concentrations exceed / are likely to exceed the relevant air quality objectives. AQMAs are declared for specific pollutants and objectives
ASR	Annual Status Report
Defra	Department for Environment, Food and Rural Affairs
DMRB	Design Manual for Roads and Bridges – Air quality screening tool produced by National Highways
EU	European Union
FDMS	Filter Dynamics Measurement System
LAQM	Local Air Quality Management
NO_2	Nitrogen Dioxide
NO_x	Nitrogen Oxides
PM_{10}	Airborne particulate matter with an aerodynamic diameter of 10µm or less
$PM_{2.5}$	Airborne particulate matter with an aerodynamic diameter of 2.5µm or less
QA/QC	Quality Assurance and Quality Control
SO_2	Sulphur Dioxide

References

- Local Air Quality Management Technical Guidance LAQM.TG22. August 2022. 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.PG22. August 2022. Published by Defra in partnership with the Scottish Government, Welsh Assembly Government and Department of the Environment Northern Ireland.
- Folkestone and Hythe District Council Annual Status Report 2022