2024 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 2024

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1.1 Executive summary: Air Quality in our area

Air quality in Hart District Council

Hart District Council's Corporate Plan[1] identifies 'Planet', 'People' and 'Place' as the focus for the next four years. Within these priorities and goals, the Council is committed to reducing sources of air pollution and improving air quality across the district.

Breathing in polluted air affects our health and costs the NHS and our society billions of pounds each year. Air pollution is recognised as a contributing factor in the onset of heart disease and cancer and can cause a range of health impacts, including effects on lung function, exacerbation of asthma, increases in hospital admissions and mortality[2].

Air pollution particularly affects the most vulnerable in society, children, the elderly, and those with existing heart and lung conditions. Additionally, people living in less affluent areas are most exposed to dangerous levels of air pollution[3].

Table ES 1 provides a brief explanation of the key pollutants relevant to local air quality management and the kind of activities they might arise from.

[1] https://www.hart.gov.uk/sites/default/files/2023-02/Corporate%20Plan%202023%20to%202027%20APPROVED.pdf

[2] UK Health Security Agency. Chemical Hazards and Poisons Report, Issue 28, 2022.

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

Table ES 1 - Description of key pollutants

Pollutant	Description
Nitrogen dioxide (NO_2)	Nitrogen dioxide is a gas which is generally emitted from high-temperature combustion processes such as road transport or energy generation.
Particulate matter (PM_{10} and $PM_{2.5}$)	Particulate matter is everything in the air that is not a gas. Particles can come from natural sources such as pollen, as well as human made sources such as smoke from fires, emissions from industry and dust from tyres and brakes. PM_{10} refers to particles under 10 micrometres. Fine particulate matter or $PM_{2.5}$ are particles under 2.5 micrometres.

Air quality management areas (AQMAs) can be declared when there is an exceedance, or likely exceedance, of an air quality objective. Hart District Council does not currently have any AQMAs.

Hart District Council measures nitrogen dioxide (NO_2) at 13 locations within the district using passive diffusion tubes. All annual average NO_2 concentrations measured during 2023 were below the 40µg.m^{-3} annual mean air quality objective. NO_2 concentrations have generally declined over the past 5 years, with the exception of 2021-2022 which across all measurement sites presented a small increase over the previous year, likely affected by the easing of restrictions following the COVID-19 lockdowns in the year prior. However, all measurement sites remain below the baseline threshold of measurements taken in 2019. All measurement sites in 2023 showed a decrease in NO_2 concentrations compared to the previous year.

A review of planning applications, local road networks, and industrial processes operating within the district has not identified any major new sources of emissions in 2023.

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[4] sets out actions that will drive continued improvements to air quality and to meet the new national interim and long-term targets for fine particulate matter ($PM_{2.5}$), the pollutant of most harm to human health. The air quality strategy[5] provides more information on local authorities' responsibilities to work towards these new targets and reduce fine particulate matter in their areas.

The road to zero[6] details the government's approach to reduce exhaust emissions from road transport through a number of mechanisms, in balance with the needs of the local community. This is extremely important given that cars are the most popular mode of personal travel and the majority of air quality management areas (AQMAs) are designated due to elevated concentrations heavily influenced by transport emissions.

Hart District Council have undertaken several measures to help maintain and improve air quality in the district:

- Promoting the uptake of low and zero emission vehicles, through the installation of electric charge points.
- Upgrading council vehicles to electric as part of the council's commitment to net zero by 2035.
- Protecting air quality through their planning processes, local plan, and local transport plans and strategies. Active travel infrastructure is being encouraged through the framework set in place by the local cycling and walking infrastructure plan (LCWIP), and the inclusion of better connections for pedestrian and cyclist access to new developments required in the planning process.
- Approval of planning application for a new energy storage facility.

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[4] Defra. Environmental improvement plan 2023, January 2023

[5] Defra. Air quality strategy – framework for local authority delivery, August 2023

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

Conclusions and priorities

The NO_2 concentrations measured in Hart District Council were below the air quality objective (AQO) at all measurement sites. A review of 2023 planning applications identified no new developments that are likely to cause significant adverse impacts on air quality.

Hart District Council will continue to monitor NO_2 using a network of passive diffusion tubes, continue to encourage the uptake of low emission transport, and protect air quality through the local planning process.

Local engagement and how to get involved

A key source of localised air pollution is road traffic. The public may help improve air quality in the district by:

- Using alternative modes of transport such as public transport or active travel where possible.
- Car share if possible.
- Use low emission vehicles such as electric or hybrid cars.
- Avoid driving during peak hours to ease congestion.
- Avoid idling engines.

DEFRA have published their clean air strategy (2019) document, which highlights sources of air pollution and the best practice approaches to reduce emissions. For more information please visit: Clean Air Strategy 2019 for the UK

For more information about local air quality in Hart please visit: Hart District Council's Air Quality Webpage

DEFRA have also updated their air quality strategy which sets out a framework for local authority delivery, accessible at: DEFRA's Air quality strategy

For further information on the health impacts and cost that air pollution can exact on the population, see Public Health England’s air pollution guidance document: Public Health England's guidance, Health Matters: Air Pollution

Local responsibilities and commitment

This ASR was prepared by the Environmental Health team of Hart District Council with the support and agreement of the following officers and departments:

- Place directorate.

- Communities' directorate.
- Portfolio holder for regulatory.
- Climate Change Communications and Engagement officer.
- Environmental Health team.

This ASR has been approved by:

- Executive Director – Place.

If you have any comments on this ASR, please send them to the Environmental Health Department at:

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2 Local air quality management

This report provides an overview of air quality in Hart District Council during January to December 2023. 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 Hart 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.

3 Actions to improve air quality

3.1 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.

Hart District Council currently does not have any declared AQMAs. A local air quality strategy is under development to prevent and reduce polluting activities. For reference, a map of Hart District Council monitoring locations is presented in Appendix D: Map(s) of monitoring locations and AQMAs.

3.2 Progress and impact of measures to address air quality in Hart District Council

Defra's appraisal of last year's ASR concluded that the passive monitoring results continue to demonstrate that Hart District Council is compliant with national air quality objectives. Hart District Council were commended on their continued adherence to good practice regarding the monitoring of NO_2 in the district, and promotion of sustainable practices.

Hart District Council has taken forward a number of direct measures during the current reporting year of 2023 in pursuit of improving local air quality. Details of all measures completed, in progress or planned are set out in Table 2.1. Five measures are included within Table 2.1, with the type of measure and the progress Hart District Council have made during the reporting year of 2023 presented. Where there have been, or continue to be, barriers restricting the implementation of the measure, these are also presented within Table 2.1.

More detail on these measures can be found in their respective action plans. Key completed measures are:

- Cycle and car parking in new development supplementary planning document adopted.

- Local cycling and walking infrastructure plan published.
- New climate action plan published.
- Electric charge points set for installation at 7 car parks in Hart.

Hart District Council expects the following measures to be completed over the course of the next reporting year:

- Hart district's local cycling and walking infrastructure plan (LCWIP) encourages modal shift to more sustainable transport options. This is achieved through the identification of cycling routes and walking zones, and proposals for possible infrastructure improvements. The LCWIP was adopted by Hart's cabinet in January 2024 and is scheduled to be adopted by Hampshire County Council in summer 2024.
- Energy efficiency and heating audits on all Hart District Council owned buildings and assess the district for heat network potential.
- Continuation of the expansion of the electric charge point network in Hart.
- Investigate the possibility of ultra-low emission pool cars.
- Update policies (staff travel, maintenance and repair, procurement, home working) to encourage behaviour change.

Hart District Council's priorities for the coming year are:

- Continuing passive monitoring throughout the council and continue securing compliance with the air quality objectives.
- Continue the work implementing the actions laid out in the climate change action plan [7].

Hart District Council worked to implement these measures in partnership with stakeholders during 2023.

The principal challenges and barriers to implementation that Hart District Council anticipates facing are:

- Technological: Where not all vehicles can be converted to low emission alternatives.

[7] https://www.hart.gov.uk/sites/default/files/2023-07/Climate-Change-Action-Plan-July-2023-Hart-District-Council.pdf

- Limitations due to external processes/organisations: where restrictions are placed due to developments of new county-wide strategies which may delay/alter the delivery of certain objectives.
- Financial: Depending on the outcome of bids for funding certain actions.
- Communication: Where some stakeholders are very hard to reach.

3.2.1 Air quality management and climate change

- In April 2021, Hart District Council declared a climate emergency, committing to become a carbon neutral authority by 2035, and a carbon neutral district by 2040.
- Hart District Council's climate change action plan lays out the actions which Hart District Council have committed to completing. This plan has numerous co-benefits such as in the reduction of air pollution from transport.
- The action plan contains a range of measures grouped under key themes; "Buildings", "Energy", "Transport", "Communications and Reporting", and "District-wide actions".
- The Council is also supporting and encouraging a modal shift toward more sustainable forms of transport such as walking, cycling, and public transport. This is demonstrated in the local walking and cycling infrastructure plan, and the Hart District Council local plan.

3.2.2 How Hart District Council's planning policy will mitigate air pollution

Hart District Council adopted the Hart Local Plan (Strategy and Sites) 2032 on 30 April 2020. There are no AQMAs in the district for the adopted Hart local plan 2032 to take account of. The Hart local plan 2032 was prepared in accordance with national planning policy and guidance and includes policy NBE11 Pollution. The policy complies with and contributes towards European Union (EU) limit values and national objectives for pollutants and the cumulative impacts on air quality from individual sites in local areas (in Hart District Council LAQM Annual status report 2023 [8] in accordance with National

[8] https://www.hart.gov.uk/sites/default/files/2023-09/Air-quality-annual-status-report-2023.pdf

planning policy framework (NPPF) paragraph 192 [9], and National planning policy guidance (NPPG) paragraph 002 reference ID: 32-002- 20191101[10]). Policy NBE11 Pollution contained in the Hart local plan 2032 reads as follows:

> ***Policy NBE 11 Pollution***
>
> *Development will be supported provided:*
>
> *a) It does not give rise to, or would be subject to, unacceptable levels of pollution (including cumulative effects); and*
> *b) It is satisfactorily demonstrated that any adverse impacts of pollution, either arising from the proposed development or impacting on proposed sensitive development or the natural environment will be adequately mitigated or otherwise minimised to an acceptable level.*
>
> *Where development is proposed on or near a site that may be impacted by, or may give rise to, pollution, such a proposal must be accompanied by an assessment that investigates the risks associated with the site and the possible impacts on the development, its future users and the natural and built environment. The assessment shall propose adequate mitigation or remediation when required to achieve a safe and acceptable development. Impacts on air quality should be considered in combination with other relevant plans or projects.*

The Hart local plan 2032 also contains policy INF3 Transport which requires developments that would generate a significant transport impact to incorporate measures to reduce the need to travel by car and promote sustainable forms of travel, for example through travel plans. For more on travel plans see Hampshire County Council (HCC) website at: Travel plans | Hampshire County Council (hants.gov.uk) .

Additionally, to support the Hart local plan, the Habitat regulation assessment (HRA) was prepared. The objective of the HRA is to identify any areas of the Hart local plan that are likely to have a significant effect on Natura 2000 or European special areas of conservation (SACs), Special protection areas (SPAs) and Ramsar sites and it devises

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9 https://assets.publishing.service.gov.uk/media/65a11af7e8f5ec000f1f8c46/NPPF_December_2023.pdf

10 https://www.gov.uk/guidance/air-quality--3

appropriate mitigation strategies where such effects are identified. Much of Hart lies within five kilometres of the Thames basin heaths special protection area (TBHSPA) and it is therefore relevant to consider these issues.

The HRA confirms that the recreational impacts of proposed development on European sites can be avoided or mitigated. It also confirms that air quality is not likely to cause a significant effect on the SPA. Increased nitrogen deposition has the potential to result in earth land habitat change and loss of species diversity which could adversely affect the TBHSPA. The Council is committed to working with partners to monitor roadside air quality that may affect the Thames basin heaths SPA.

3.2.2.1 Supplementary planning guidance

In December 2023 Hart's cabinet adopted a Cycle and car parking in new development supplementary planning document (SPD). A key objective of the SPD is to ensure sufficient, well-designed and secure cycle parking which is convenient so as to encourage modal shift for shorter trips. This is achieved through a requirement for a greater quantum of residential cycle parking and an emphasis on high-quality cycle parking layout and design.

3.2.3 Developer contribution towards transport improvements including sustainable transport

The Council secures developer contributions for transport improvements on behalf of Hampshire County Council (see Hart's community infrastructure policy and Hampshire County Council's Transport Contributions Policy). These contributions go towards the implementation of the new Hampshire Local Transport Plan, and other schemes for which there is an up to date evidence base. These include measures to promote sustainable transport or alleviate traffic congestion. Hampshire County Council control the spending of transport contributions.

3.2.4 Local Transport Plans and strategies

The following documents are prepared by Hampshire County Council and aim to promote sustainable travel and reduce congestion:

- Hampshire Local Transport Plan 2011-2031
- Hampshire Local Transport Plan – Part B Three Year Implementation Strategy 2014- 2017

- Hart District Transport Statement, 2013
- Hart Transport Statement Live Scheme List, December 2013
- Walking Strategy, 2016
- Cycling Strategy, 2015
- Local Transport Plan 4 (LTP4)

Hampshire County Council (HCC) have prepared a new Local Transport Plan setting out how the county's transport system should develop over the next 30 years. LTP4 proposes transformational change which:

- shifts away from planning for vehicles towards planning for people and places,
- reduces the reliance on private car travel,
- promotes active lifestyles, and
- meets national priorities to decarbonise the transport system by reducing transport related carbon emissions to net zero by 2050.

LTP4 was endorsed by HCC's cabinet in February 2024 and it is scheduled for adoption at a meeting of HCC's full council later in 2024.

- Local cycling and walking infrastructure plan (LCWIP)

In September 2022, Hart District Council and Hampshire County Council jointly commissioned Sustrans to prepare an LCWIP for Hart district. LCWIPs identify cycling and walking infrastructure improvements at a local level and provide a long-term plan for developing local cycling and walking networks with the aim of promoting a shift away from private cars towards active travel.

Hart's LCWIP enables the Council to:

- demonstrate a clear commitment to walking and cycling through the identification and prioritisation of infrastructure improvements,
- make the case for future funding for active travel infrastructure and developer contributions, and
- ensure that consideration is given to active modes of travel through the integration of the LCWIP with local planning and transport strategies and policies.

The LCWIP was adopted by Hart's cabinet in January 2024 and is scheduled to be adopted by Hampshire County Council in summer 2024.

Table 2.1 – Progress on measures to improve air quality

Measure no.	Measure title	Category	Classification	Year measure introduced	Estimated / actual completion date	Bodies involved	Funding source / status	Measure status	Reduction in pollutant / emission from measure	Performance indicator	Progress to date	Comments / barriers to implementation
1	Planning policies and Local Transport Plans in place to help protect air quality	Policy guidance and development control	Other policy	Local plan policy NBE11 Pollution adopted April 2020 Hampshire Local Transport Plan 2011-2031 adopted 2011 Cycle and car parking in new developments supplementary planning document (SPD) adopted December 2023.	Policy already in place SPD adopted in December 2023	Local authority	Local authority		Not quantifiable	Number of planning applications where air quality has been screened/assessed		Hampshire County Council have prepared a new Local Transport Plan – LTP4. LTP4 represents a strong move towards prioritising environmental issues and places people including healthy environments and tackling air pollution. LTP4 was endorsed by HCC's cabinet in February 2024 and is scheduled for adoption by HCC's full council later in 2024.
2	Installation of an electric vehicle charging point	Promoting low emission transport	Procuring alternative refuelling infrastructure to promote low emission vehicles, EV recharging, gas fuel recharging		Ongoing	Local authority	Local authority		Not quantifiable	Use of the charging point	Implementation ongoing. Four EV charging points have been installed at civic offices (31st March 2023).	Documentation and car parks agreed for further installation of electric charge points. 7 car parks set for EV charge points. Working with HCC on county wide charge point strategy.
3	Local Cycling and Walking Infrastructure Plan	Promoting travel alternative	Promotion of walking and cycling / public transport improvements-interchanges stations and services	2021	The LCWIP project is now complete.	Local authority and Hampshire County Council.	Local authority and Hampshire County Council.	On-going	Not quantifiable		The LCWIP was adopted by Hart's cabinet in January 2024 and is scheduled to be adopted by Hampshire County Council in summer 2024. The Fleet Pond corridor, a pilot scheme improving cycling	Developing a green grid framework to encourage cycle paths and sustainable transport links between places in Hart is also an objective under the council's Climate action plan 2023 – 2027.

Measure no.	Measure title	Category	Classification	Year measure introduced	Estimated / actual completion date	Bodies involved	Funding source / status	Measure status	Reduction in pollutant / emission from measure	Performance indicator	Progress to date	Comments / barriers to implementation
											and walking infrastructure between Hartland village and Fleet station, was completed in July 2022.	
4	Offsetting projects	Other – planting wild gardens, urban trees, living walls in car parks, green/living roofs	Other	2020	Oct 2020	Local authority	Local authority / staffing costs	On-going			Creation of plan showing cost, air pollution and carbon reduction, submitted for consideration as a pilot project once suitable site found.	Objective under Hart District Council's Climate action plan 2023 – 2027. Several areas have been chosen for 'No Mow May' for 2023. Council will monitor and adjust mowing regime in future along with climatic issues and after an audit of all open spaces select areas for later cutting only and not for regular cutting.
5	Transition Hart DC fleet vehicles to ultra-low / low emission vehicles	Vehicle fleet efficiency	Fleet efficiency and recognition schemes	2020		Local authority		On-going	Not quantifiable		Two service vehicles have been updated for electric vans and these are in service as of May 2023. Several maintenance vehicles (grounds team and street sweepers) have also been updated for vehicles with upgraded Euro 6 engines which can run on hydrotreated vegetable oil (HVO) fuel, which is sometimes known as renewable diesel.	Objective under Hart District Council's Climate action plan 2023 – 2027. Hart Council will look to replace other vehicles as and when they come to their end of life and if suitable electrical replacements are available. Council are also looking to run mowers on HVO fuel in future.

3.3 $PM_{2.5}$ – Hart District Council's approach to reducing emissions and/or concentrations

As detailed in policy guidance LAQM.PG22 (Chapter 8) and the air quality strategy[11], local authorities are expected to work towards reducing emissions and/or concentrations of fine particulate matter ($PM_{2.5}$)). There is clear evidence that $PM_{2.5}$ (particulate matter smaller 2.5 micrometres) has a significant impact on human health, including premature mortality, allergic reactions, and cardiovascular diseases. Indicator D01 of the Public Health Outcomes Framework indicates the fraction of mortality attributable to particulate air pollution for England standing at 5.8% for 2022.

There are currently no automatic $PM_{2.5}$ monitoring stations within Hart District Council, nor PM_{10} monitoring. As recommended, in the absence of $PM_{2.5}$ monitoring and where a local authority does not undertake PM_{10} monitoring, the current Defra background mapping resource should be used to provide maximum background annual mean $PM_{2.5}$ concentrations. The current Defra 2018 background maps for Hart District Council provide background concentrations of $PM_{2.5}$. The highest concentration is predicted to be 9.89µg/m^3 within the 1 x 1km grid square with the centroid grid reference of 484500, 160500 for the year 2023. This indicates that $PM_{2.5}$ concentrations are expected to be under the proposed annual average limit value for $PM_{2.5}$ target of 10µg/m^3 to be met across England by 2040. This is an area in Blackwater that encompasses a stretch of the A30 and B3272. The Blackwater train station is in this location but is mainly comprised of residential and commercial properties.

3.3.1 Smoke control areas and guidance on domestic fires and wood burning

Although there are no smoke control areas in Hart District Council, the council do encourage good practice is met when using open fires and wood-burning appliances. Open fires and wood-burning appliances can be a source of air pollution. The public can help reduce poor air quality when using these appliances by:

- Regularly maintaining and servicing your stove.
- Regularly sweep chimneys.

[11] Defra. Air quality strategy – framework for local authority delivery, August 2023

- Burn seasoned wood (including “Ready to Burn”).
- Not burning treated waste wood or household rubbish.
- Consider purchasing a stove that has been approved for use in smoke control areas by Defra or “Ecodesign Ready” stove.
- Check whether you live in a smoke control area.

More information (including smoke control areas legislation) can be found at the following links:

- Open fires and wood-burning stoves - a practical guide (defra.gov.uk)
- Ready to Burn Scheme - Woodsure
- Fuels - Defra, UK
- Appliances - Defra, UK
- Burnright - Working together for cleaner air in the UK
- Burn Better, Breathe Better: Reduce the negative impact your stove or open fire can have on your health - Defra, UK

3.3.2 Domestic heating and air pollution

Heating systems for homes and other buildings can be a source of air pollution, for example the combustion of fuels (e.g. coal, gas or wood) result in emissions of pollutants to air. The emissions to air from domestic heating can be reduced by:

- Insulating your home efficiently and be energy efficient.
- Use electric heating powered by non-combustion forms of renewable energy.

More information on this and links to other resources are available at: DEFRA UK Air Information Resource and Air quality | Hart District Council .

3.3.3 Environmental permitting regulations

Local authorities administer some of the EPR permit types whilst others, such as waste carrier licenses, are issued by the Environment Agency. More information on the issuing body is available by clicking on the Environment Agency link for Environmental permits - GOV.UK (www.gov.uk).

Industrial processes that pollute the atmosphere are controlled by the council or the Environment Agency. Here you can find a register of the processes authorised by the Council which is kept by the Environmental Health team. You can also view the register at

our council offices at Civic offices, Harlington Way, Fleet during normal office hours (currently 09:00-16:00).

You must have an environmental permit if you operate a regulated facility in England or Wales. You can find out more and apply for a permit on GOV.UK's website. You can also Tell us about a change to your existing circumstances.

For more information on Hart District Council's EPR processes, including air quality, contaminated land and noise, please visit Environmental Health | Hart District Council.

3.3.4 Building regulations part S

The Regulation that became operational on 15th June 2022 provides a requirement for new homes and existing homes undergoing large renovations (of 10 or more dwellings) to have facilities for charging electric vehicles at home that may be parked on associated parking spaces at that home. Although a transition period is included where applications made prior to this date have a year before it becomes a requirement in June 2023. The document applies to the following projects:

- New residential and non-residential buildings.
- Buildings undergoing a material change of use to dwellings, such as converting a barn into a home.
- Residential and non-residential buildings undergoing a major renovation where 10 or more dwellings are being created.
- Mixed-use buildings that are either new or undergoing a major renovation.

All new build homes must have electric vehicle charging facilities for each associated parking space that is equal to the total number of dwellings.

4 Air quality monitoring data and comparison with air quality objectives and national compliance

This section sets out the monitoring undertaken within 2023 by Hart District Council and how it compares with the relevant air quality objectives. In addition, monitoring results are presented for a five-year period between 2019 and 2023 to allow monitoring trends to be identified and discussed.

4.1 Summary of monitoring undertaken

4.1.1 Automatic monitoring sites

Hart District Council do not currently conduct continuous automatic monitoring within the district.

4.1.2 Non-automatic monitoring sites

Hart District Council undertook non- automatic (i.e. passive) monitoring of NO_2 at 13 sites during 2023. Table A.1 – Details of non-automatic monitoring sites in Appendix A: Monitoring results presents the details of the non-automatic sites.

Maps showing the location of the monitoring sites are provided in Appendix D: Map(s) of monitoring locations and AQMAs. 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: Supporting technical information / air quality monitoring data QA/QC.

4.2 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: Supporting technical information / air quality monitoring data QA/QC.

4.2.1 Nitrogen dioxide (NO_2)

Table A.1 – Details of non-automatic monitoring sites and Table A.2 – Annual mean NO_2 monitoring results: non-automatic monitoring (µg/m^3)in Appendix A: Monitoring results 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 2023 dataset of monthly mean values is provided in Appendix B: Full monthly diffusion tube results for 2023. Note that the concentration data presented in Table B.1 – NO_2 2023 diffusion tube results (µg/m^3)includes distance corrected values, only where relevant.

5 Planning applications

A review of significant planning applications granted in 2023 and early 2024 identified no new or proposed developments where air quality was considered likely to be a concern by Hart District Council. Table 4.1 below contains significant planning applications granted in 2023 and early 2024 in the district, which are relevant in this context.

Table 4.1 – Hart District Council planning applications

Reference	Address	Proposal	Date of decision	Decision
22/02520/FUL	Silverlea, Cove Road, Fleet, Hampshire, GU51 2RR	Erection of a 70 Bed care home (use class C2) including access, parking, landscaping and other associated works, following demolition of existing dwellings	08-Feb-23	PER*[12]
22/02917/FUL	Land At Blue Bell Lodge, Rye Common Lane, Crondall, Farnham	Proposed energy storage facility encompassed by 2.4m high palisade fencing and 3.7m high acoustic fencing to provide energy balancing services to the National Grid and access to the public highway	22-May-23	PER[13]

[12] PER* - Appeal is allowed and planning permission is granted

[13] PER - permitted

Reference	Address	Proposal	Date of decision	Decision
22/01062/FUL	Motoright, Village Way, Yateley, Hampshire, GU46 7SE	Demolition of Village Service Station, erection of a part two, part two and a half storey building to accommodate 1 no. commercial unit (Use Classes E(a) & E(c)), 20 no. sheltered apartments, communal facilities and associated access, car parking and landscaping, demolition of toilet and utility at ground floor rear of Gayton House, erection of a single storey rear extension to accommodate refuse store and change of use to 2 sheltered apartments, guest suite and buggy store.	20-Sep-23	PER
21/02782/OUT	Land North Of Netherhouse Copse, Hitches Lane, Fleet, Hampshire	Hybrid planning application seeking Full Planning Permission for the erection of 185 residential dwellings (Use Class C3) with access, parking, landscaping, public open space and other associated works and Outline Planning Permission for the erection of up to 126 residential dwellings (Use Class C3) and a flexible mixed-use neighbourhood store/cafe coworking space of up to 150sqm (Use Class E) with all matters reserved except for access	17-Oct-23	PER
22/03050/FUL	Former Virgin Media Building, 280 Bartley Wood Business Park, Bartley Way, Hook	Erection of an industrial unit for flexible Use Class B2/B8/E(g)(i)-(iii) together with associated parking, landscaping and other associated works and construction of a vehicular access from Griffin Way South.	21-Nov-23	PER

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)
FL3	Fleet	Roadside	481161	154632	NO_2	No	22.0	1.0	No	1.5 - 2.0
OD1	Clover Leaf, Odiham	Roadside	473651	151085	NO_2	No	50.0	4.0	No	1.5 - 2.0
HO2	Dorchester Arms, Hook	Kerbside	471382	153407	NO_2	No	16.0	2.0	No	1.5 - 2.0
HO3	Hook	Kerbside	472469	154254	NO_2	No	6.0	1.5	No	1.5 - 2.0
HW2	The Phoenix, Hartley, Wintney	Kerbside	475884	155818	NO_2	No	30.0	2.0	No	1.5 - 2.0
HW3	Hartley, Wintney	Roadside	476684	156850	NO_2	No	16.0	1.0	No	1.5 - 2.0
YA2	Yateley	Roadside	481723	161015	NO_2	No	5.0	1.5	No	1.5 - 2.0
BL1	Vicarage Road, Blackwater	Kerbside	485114	159809	NO_2	No	3.0	3.0	No	1.5 - 2.0
AQ1	Blackwater (AQM 1)	Roadside	485251	159813	NO_2	No	22.0	4.0	No	2.0
AQ2	Blackwater (AQM 2)	Roadside	485251	159813	NO_2	No	22.0	4.0	No	2.0
M3EH	Elvetham Heath, Fleet	Kerbside	480290	155899	NO_2	No	10.0	15.0	No	2.0
M31	M3 Northbound	Roadside	479920	156030	NO_2	No	100.0	2.0	No	2.0
HS1	High Street, Fleet	Roadside	480592	153870	NO_2	No	22.0	2.0	No	2.0

Table A.2 – Annual mean NO_2 monitoring results: non-automatic monitoring (µg/m^3)

Site ID	X OS Grid ref (Easting)	Y OS Grid ref (Northing)	Site type	Valid data capture for monitoring period (%) (1)	Valid data capture 2023 (%) (2)	2019	2020	2021	2022	2023
FL3	481161	154632	Roadside	100	100	27.5	17.8	20.0	20.3	18.1
OD1	473651	151085	Roadside	100	100	16.1	11.0	13.1	13.5	11.5
HO2	471382	153407	Kerbside	100	100	26.5	19.9	21.5	20.6	18.2
HO3	472469	154254	Kerbside	100	83.1	29.0	19.8	21.3	20.9	18.8
HW2	475884	155818	Kerbside	100	100	28.4	18.4	21.0	20.2	18.5
HW3	476684	156850	Roadside	100	100	24.3	15.5	17.3	17.9	16.7
YA2	481723	161015	Roadside	100	100	28.5	18.7	20.7	19.6	19.0
BL1	485114	159809	Kerbside	100	92.5	28.1	19.9	21.8	22.5	19.9
AQ1	485251	159813	Roadside	100	92.2	23.6	16.2	19.0	17.9	16.4
AQ2	485251	159813	Roadside	100	92.2	21.4	16.6	18.8	17.6	16.2
M3EH	480290	155899	Kerbside	100	100	20.8	14.3	16.4	15.3	14.1
M31	479920	156030	Roadside	100	100	25.7	16.3	16.8	17.2	14.7
HS1	480592	153870	Roadside	100	100	24.8	16.1	19.9	17.5	16.1

☒ **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/m^3.

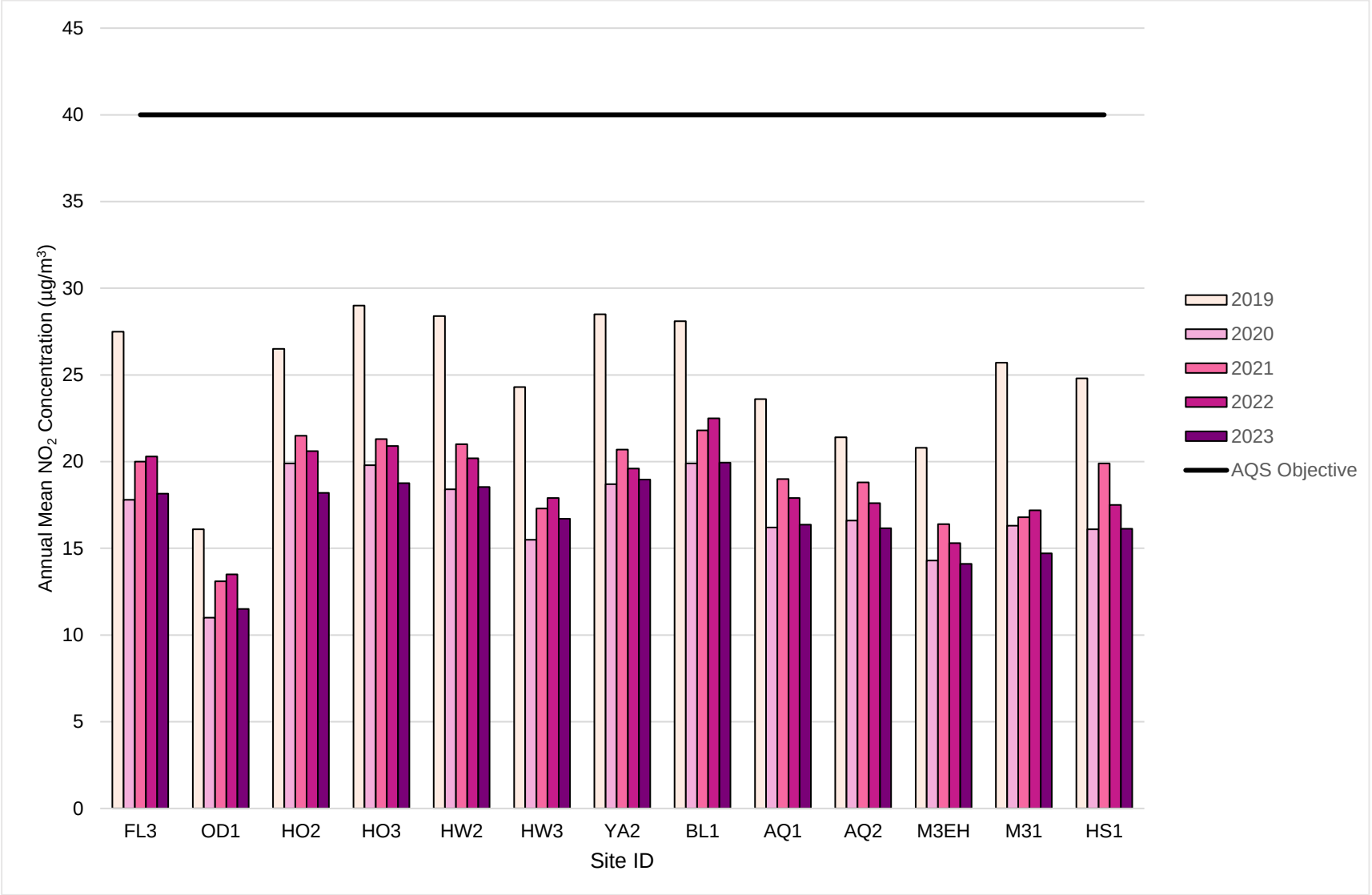
Means for diffusion tubes have been corrected for bias. See Appendix C for details.

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 2023

Table B.1 – NO_2 2023 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 (0.81)	Annual mean: distance corrected to nearest exposure	Comment
FL3	481161	154632	25.4	31.2	24.2	25.4	22.7	18.6	15.5	26.3	19.4	20.5	26.9	16.7	22.4	18.1	-	
OD1	473651	151085	16.5	19.5	13.7	15.7	15.8	12.0	7.6	17.0	13.3	11.9	19.2	10.5	14.2	11.5	-	
HO2	471382	153407	32.6	31.0	21.7	23.3	19.1	18.6	9.2	24.8	21.5	23.0	28.0	19.6	22.5	18.2	-	
HO3	472469	154254	30.7	32.2	24.4	28.4	21.4	18.4	15.8	-	-	20.8	26.2	16.4	23.2	18.8	-	
HW2	475884	155818	31.7	29.9	22.4	21.0	15.4	17.9	18.6	25.5	23.1	25.7	28.7	19.8	22.9	18.5	-	
HW3	476684	156850	21.8	22.7	19.1	20.2	16.2	20.2	15.6	27.9	23.1	22.3	24.9	15.2	20.6	16.7	-	
YA2	481723	161015	27.7	31.1	23.8	24.0	17.3	16.6	17.5	29.7	25.1	26.5	28.3	19.9	23.4	19.0	-	
BL1	485114	159809	29.6	29.6	23.6	25.4	19.6	20.0	16.9	29.0	24.7	26.8	30.8	-	24.6	19.9	-	
AQ1	485251	159813	27.6	-	19.1	23.4	23.1	15.5	13.1	24.9	18.1	18.7	24.2	17.7	20.2	16.4	-	
AQ2	485251	159813	27.3	-	18.8	22.4	21.0	16.2	13.6	25.0	17.8	18.9	24.6	16.8	19.9	16.2	-	
M3EH	480290	155899	23.6	23.0	13.1	18.8	14.1	11.8	17.6	28.5	12.7	19.0	18.6	13.2	17.4	14.1	-	
M31	479920	156030	20.3	21.3	22.6	17.6	17.1	16.6	17.7	16.7	18.7	13.2	21.3	16.3	18.2	14.7	-	
HS1	480592	153870	24.3	28.4	20.7	21.7	19.9	15.4	13.3	23.1	17.6	16.3	27.8	15.3	19.9	16.1	-	

☒ **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.**

☒ **National bias adjustment factor used.**

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

☒ **Hart District Council confirm that all 2023 diffusion tube data has been uploaded to the Diffusion Tube Data Entry System**.

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 Hart District Council during 2023

Hart District Council has not identified any new sources relating to air quality within the reporting year of 2023.

Additional air quality works undertaken by Hart District Council during 2023

Hart District Council has not completed any additional works within the reporting year of 2023.

QA/QC of diffusion tube monitoring

Hart District Council's non-automatic monitoring has been completed in adherence with the 2023 Diffusion Tube Monitoring Calendar[14].

The diffusion tubes deployed by Hart District Council are supplied and analysed by Gradko using a preparation mixture of 20% triethanolamine (TEA) in water. The bias adjustment factor of 0.81 reported in the national database of 23 different co-location studies, conducted using diffusion tubes prepared and analysed by Gradko during 2023, has been used to adjust the diffusion tube results (Figure C.1).

[14] https://laqm.defra.gov.uk/air-quality/air-quality-assessment/diffusion-tube-monitoring-calendar/

Figure C.1– National bias adjustment factor tool

National Diffusion Tube Bias Adjustment Factor Spreadsheet — Spreadsheet Version Number: 03/24

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 spreadsheet 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 2024

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 (To undo your selection, choose (All) from the pop-up list)	Year[5] (To undo your selection, choose (All))	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)
Gradko	20% TEA in Water	2023	R	Ards And North Down Borough Council	12	33	21	60.2%	G	0.62
Gradko	20% TEA in Water	2023	R	Lisburn & Castlereagh City Council	11	24	20	22.1%	G	0.82
Gradko	20% TEA in water	2023		Overall Factor[3] (23 studies)				Use		0.81

Gradko have participated in HSL and LGC Standards AIR-PT scheme, which is a UKAS accredited, independent proficiency testing scheme comparing laboratories undertaking the analysis of air quality monitoring[15].

In the 2020 AIR-PT results, Gradko scored 75% in AIR-PT AR036 (January to February 2020). No results were reported for AIR-PT AR037 (May – June 2020) and AIR-PT AR039 (July – August 2020), however AIR-PT AR040 (September – October 2020) scored 75%. The percentage score reflects the results deemed to be satisfactory based upon the z-score of < ±2.

Diffusion tube annualisation

All diffusion tube monitoring locations within Hart District Council recorded data capture above 75% therefore it was not required to annualise any monitoring data.

Diffusion tube bias adjustment factors

The diffusion tube data presented within the 2024 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

[15] https://laqm.defra.gov.uk/air-quality/air-quality-assessment/qa-qc-framework/

continuous analysers. Alternatively, the national database of diffusion tube co-location surveys provides bias factors for the relevant laboratory and preparation method.

Hart District Council have applied a national bias adjustment factor of 0.81 to the 2023 monitoring data. A summary of bias adjustment factors used by Hart District Council over the past five years is presented in Table C.1 – Bias adjustment factor

Table C.1 – Bias adjustment factor

Monitoring year	Local or national	If National, version of national spreadsheet	Adjustment factor
2023	National	03/24	0.81
2022	National	03/23	0.83
2021	National	03/22	0.84
2020	National	03/21	0.81
2019	National	03/20	0.93

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. Where appropriate, non-automatic annual mean NO_2 concentrations corrected for distance are presented in .

No diffusion tube NO_2 monitoring locations within Hart District Council required distance correction in 2023.

Appendix D: Map(s) of monitoring locations and AQMAs

Figure D.1- Diffusion tube location – Fleet (FL3)

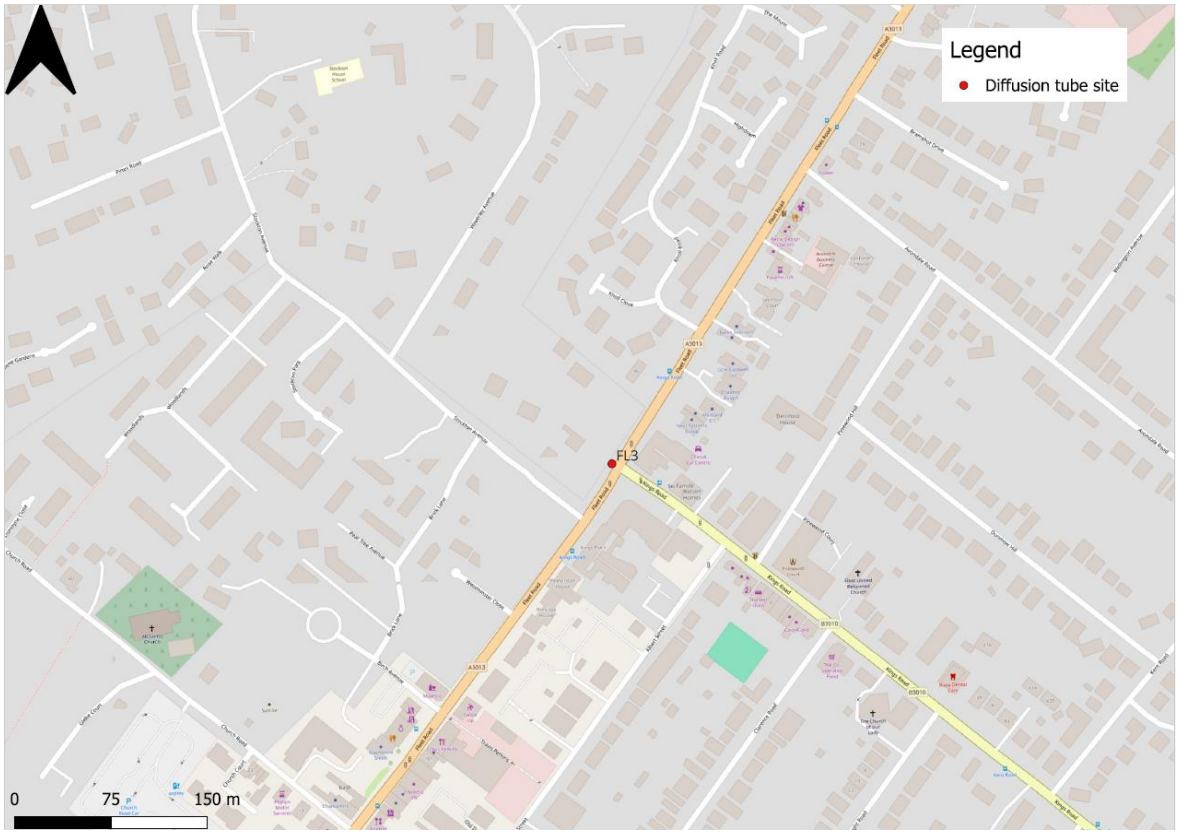


Figure D.2 – Diffusion tube location – Clover Leaf, Odiham (OD1)

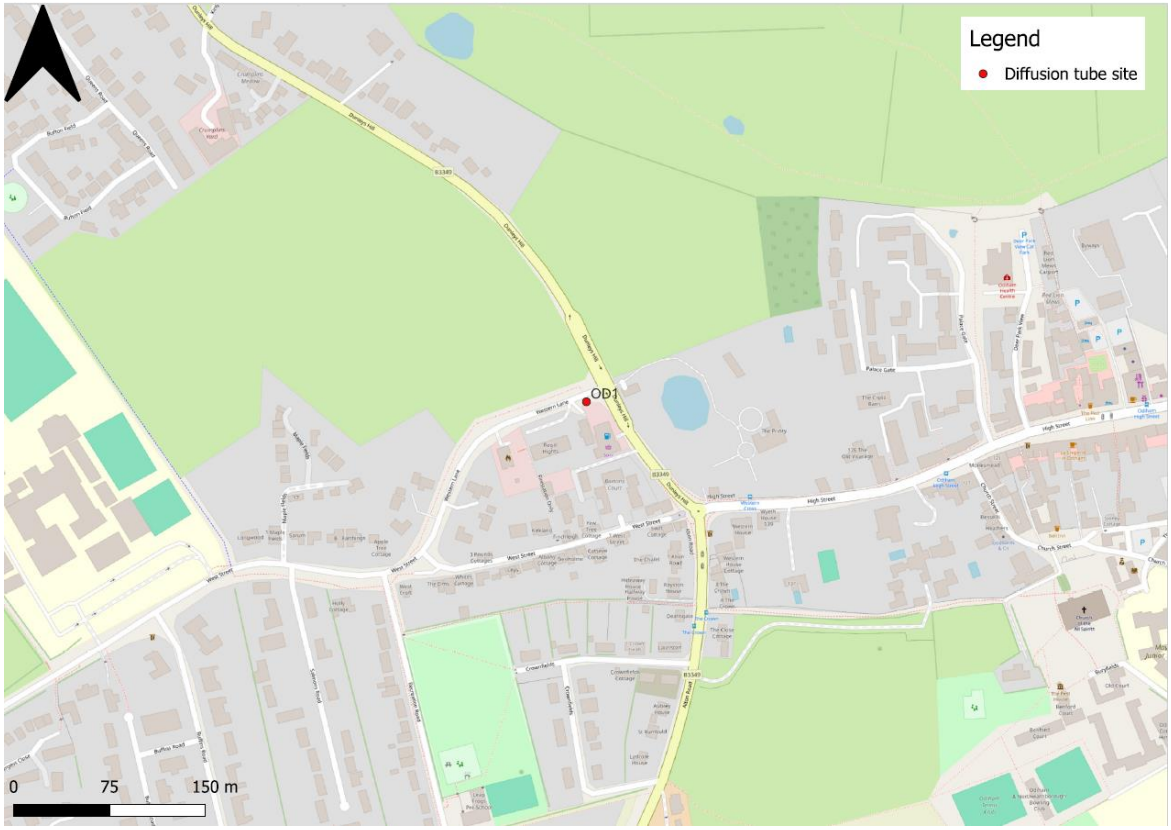


Figure D.1 – Diffusion tube location – Dorchester Arms, Hook (HO2)

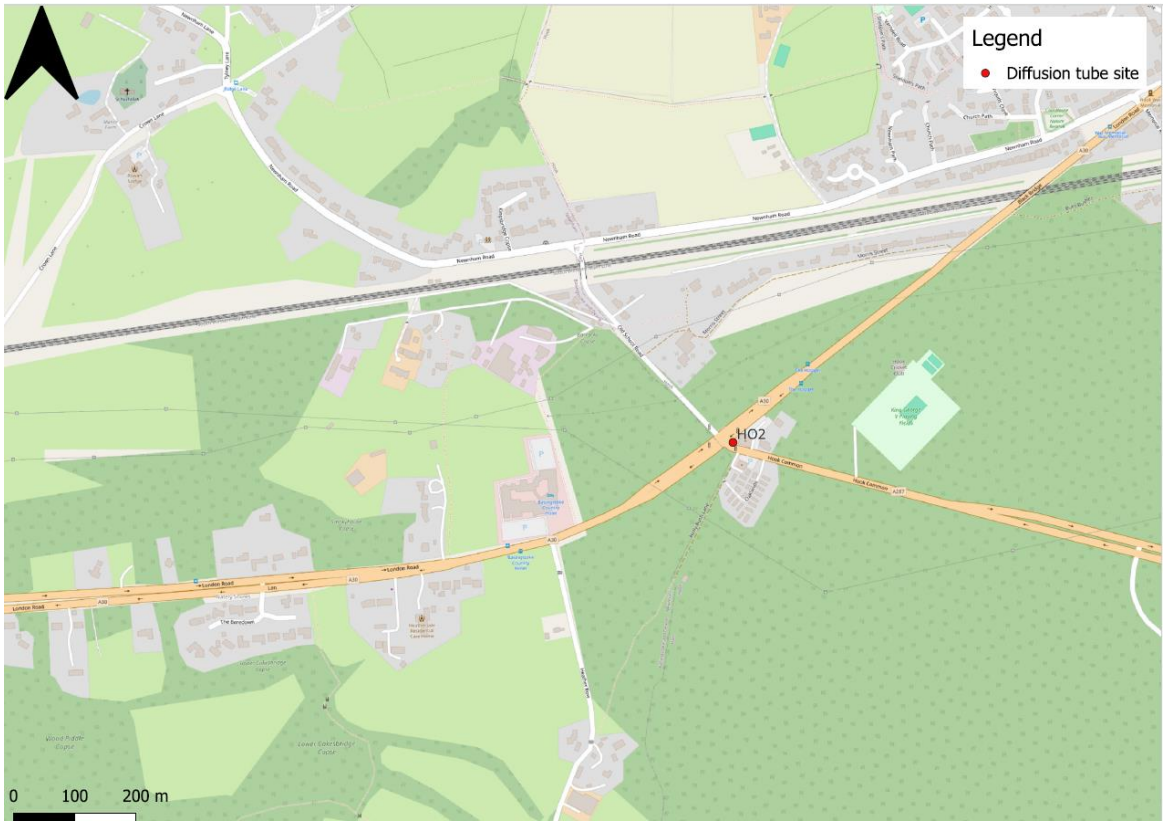


Figure D.2 – Diffusion tube location – Hook (HO3)

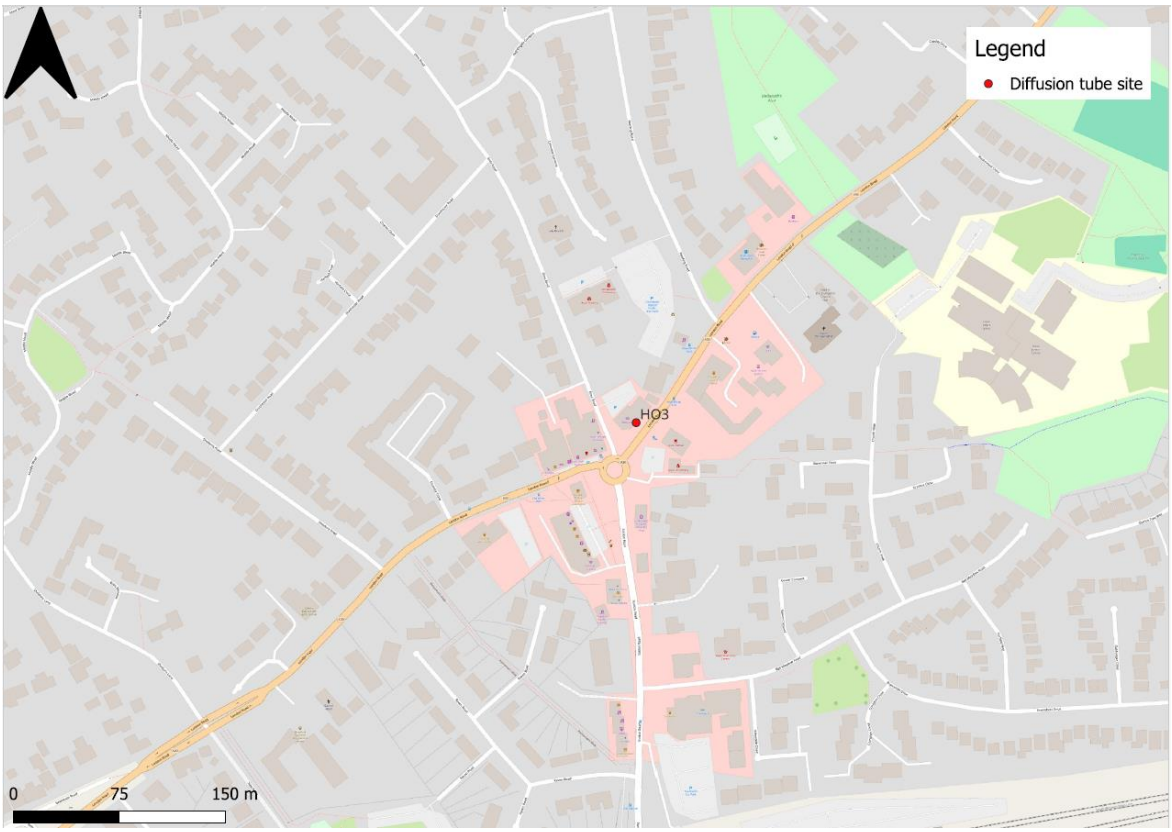


Figure D.3 – Diffusion tube location – The Phoenix, Hartley, Wintney (HW2)

Figure D.4 – Diffusion tube location – Hartley Wintney (HW3)

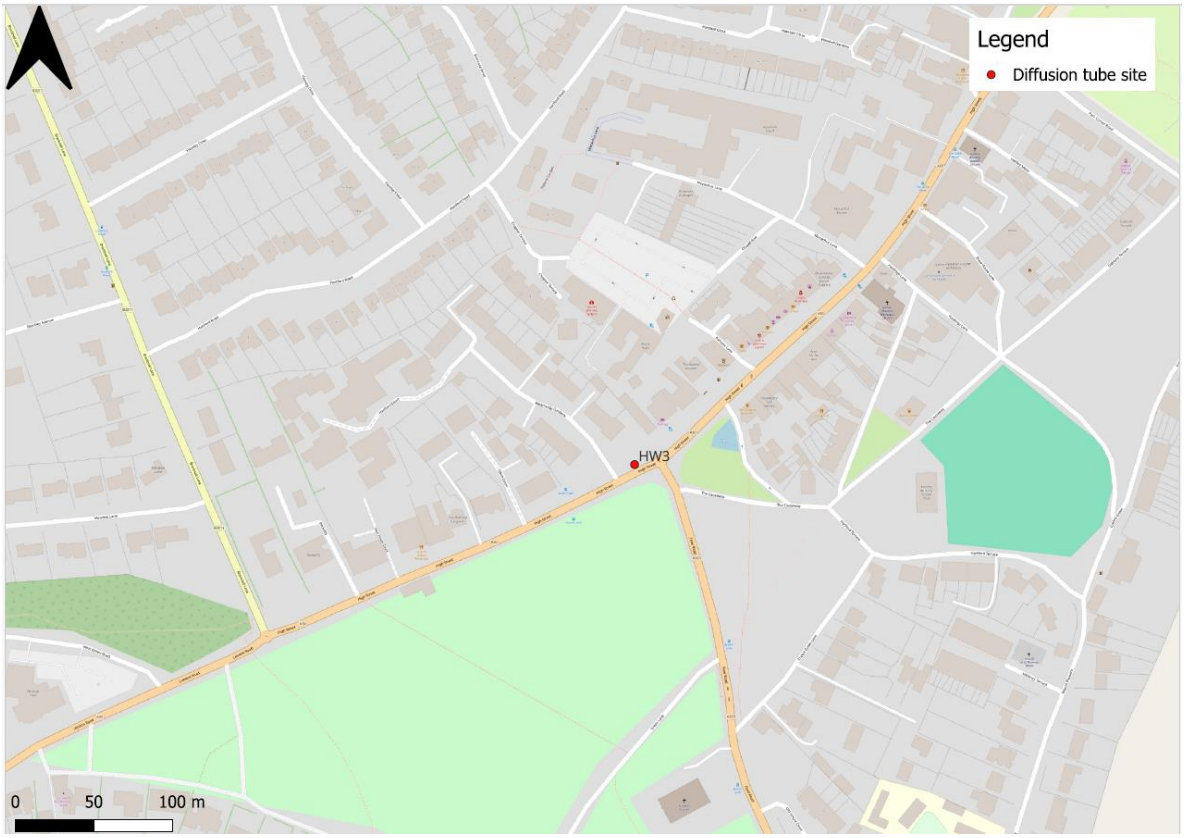


Figure D.5 – Diffusion tube location – Yateley (YA2)

Figure D.6 – Diffusion tube location – Vicarage Road, Blackwater (BL1)

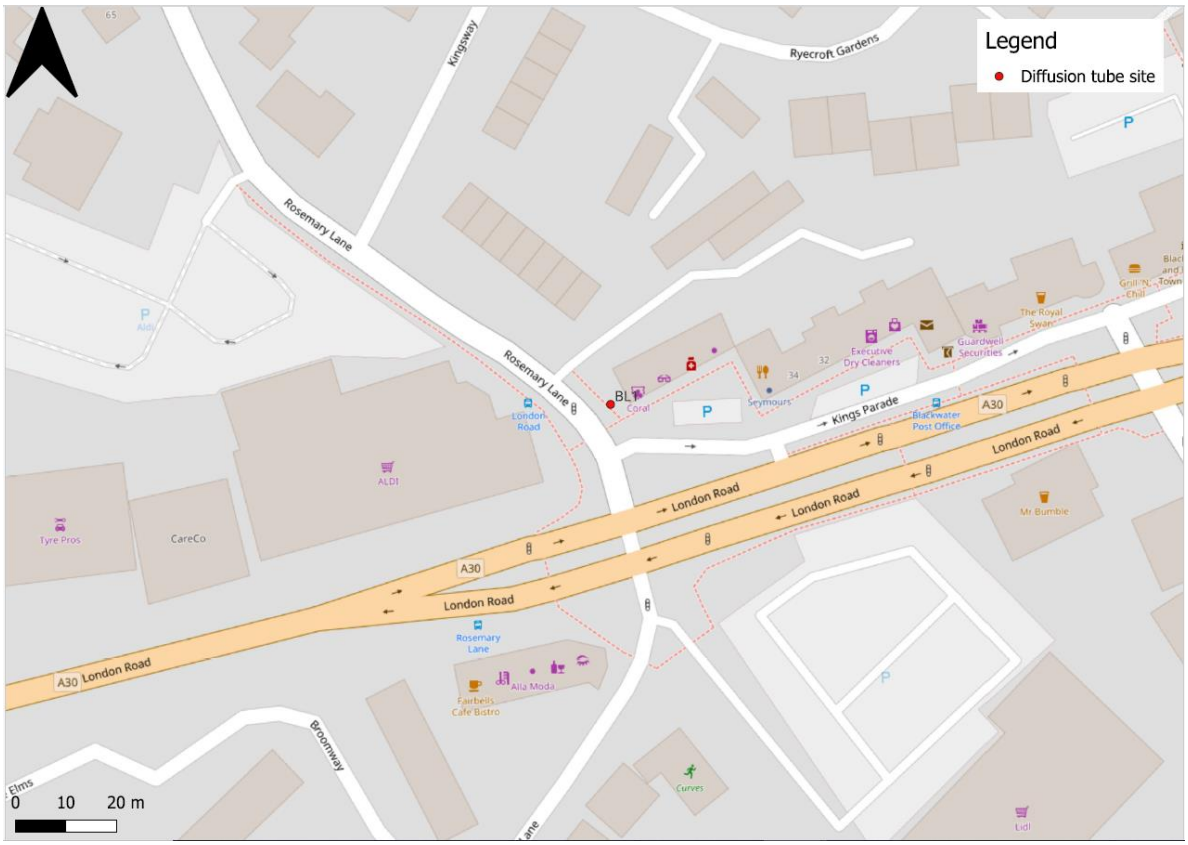


Figure D.7 – Diffusion tube location – Blackwater (AQ1, AQ2)

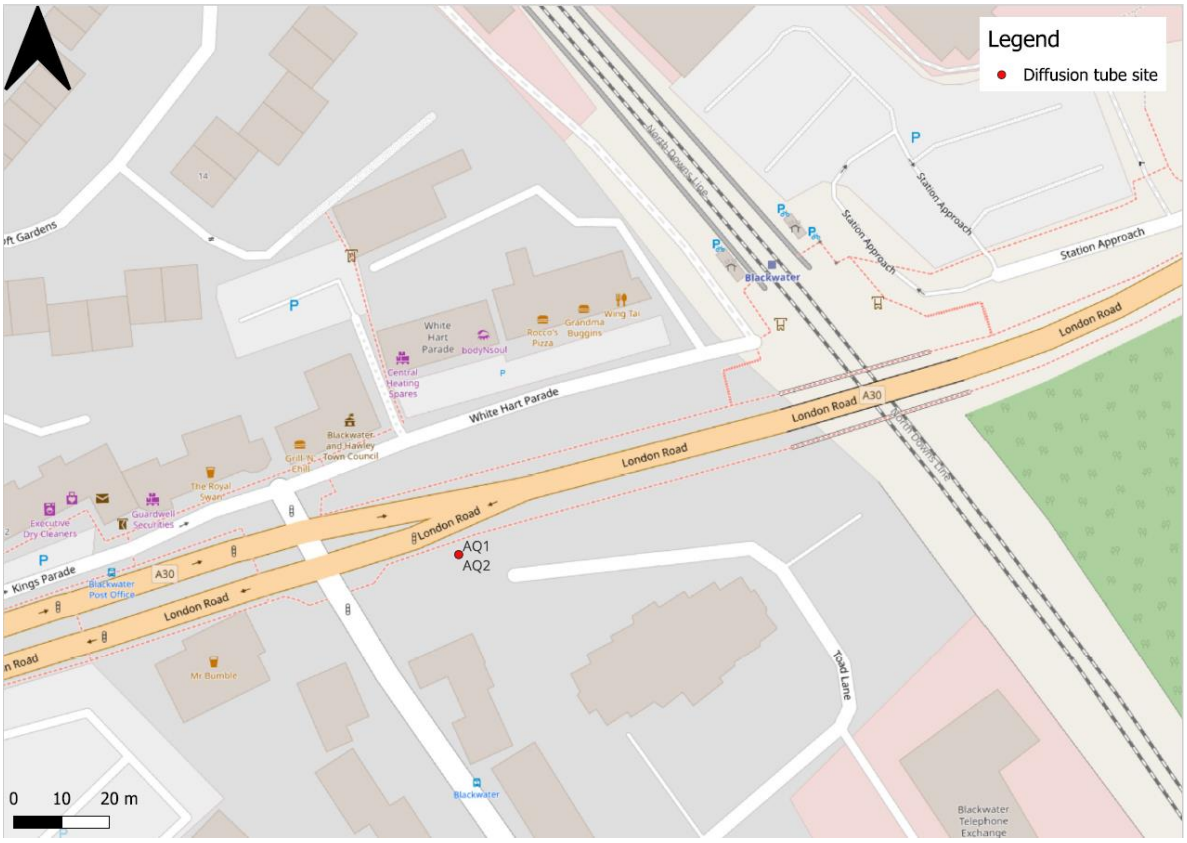


Figure D.8 – Diffusion tube location – Elvetham Heath, Fleet (M3EH)

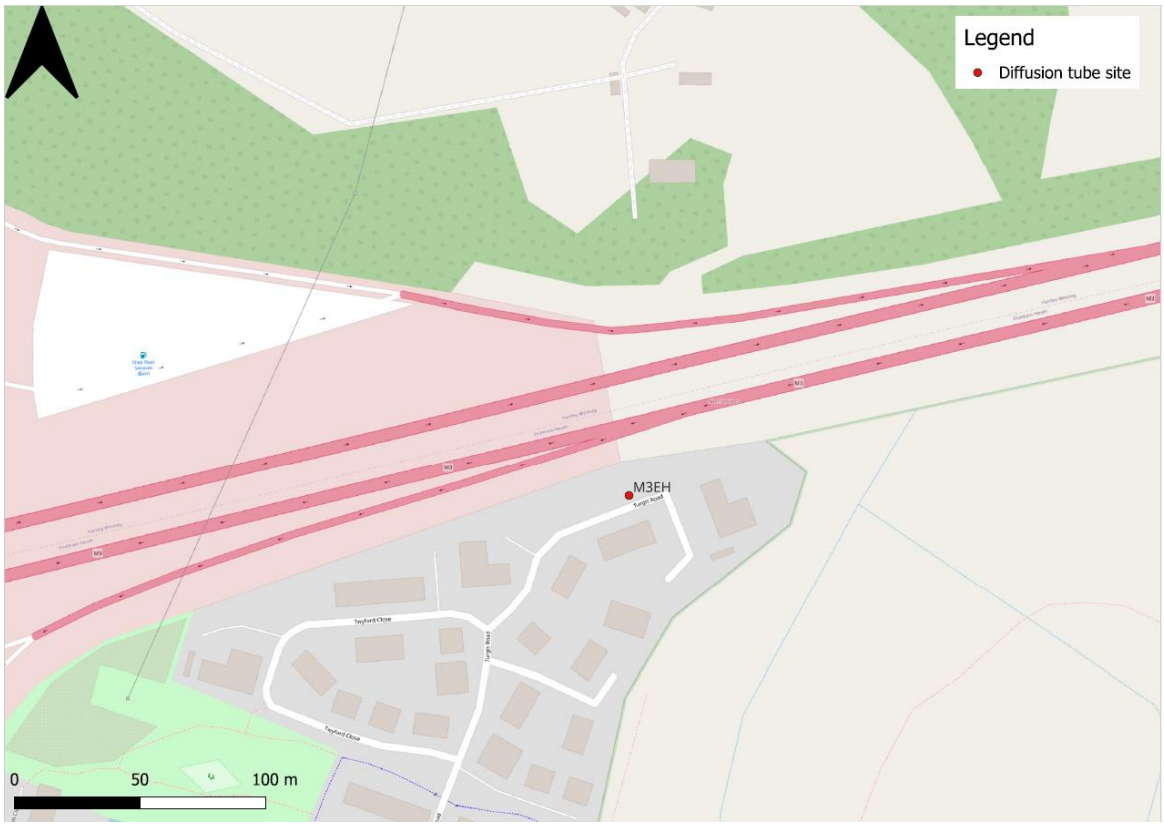


Figure D.9 – Diffusion tube location – M3 Northbound (M31)

Figure D.10 – Diffusion tube location – High Street, Fleet (HS1)

Appendix E: Summary of air quality objectives in England

Table E.1 – Air quality objectives in England[16]

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

[16] 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

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- UK Health Security Agency. Chemical hazards and poisons report, Issue 28, 2022.
- Defra. Air quality and social deprivation in the UK: an environmental inequalities analysis, 2006
- Defra. Environmental improvement plan 2023, January 2023
- Defra. Air quality strategy – framework for local authority delivery, August 2023
- DfT. The road to zero: Next steps towards cleaner road transport and delivering our industrial strategy, July 2018
- Hart District Council climate change action plan 2023-2027: Hart District Council's Climate Change Action Plan 2023-2027
- Hart local plan 2032 (strategy and sites) : Hart Local Plan (Strategy and Sites) 2032
- Hart District Council annual status report 2023: Hart District Council Annual Status Report 2023
- National planning policy framework: National Planning Policy Framework
- National air quality guidance: National Air Quality Guidance
- Defra. Air quality strategy – framework for local authority delivery, August 2023
- LAQM diffusion tube monitoring calendar: DEFRA's Nitrogen Dioxide diffusion tube monitoring calendar
- LAQM QA QC framework: DEFRA's quality assurance and quality control framework