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: September 2024

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Report Reference Number	ASRSHWD.008
Date	September 2024

Executive Summary: Air Quality in Our Area

Air Quality in South Hams and West Devon

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. In the UK, it is estimated that the reduction in healthy life expectancy caused by air pollution is equivalent to 29,000 to 43,000 deaths a year[1].

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[2].

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.

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.
Sulphur Dioxide (SO_2)	Sulphur dioxide (SO_2) is a corrosive gas which is predominantly produced from the combustion of coal or crude oil.
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.

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

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

This Annual Status Report (ASR) on Air Quality serves to provide a picture of air quality in South Hams District Council and West Devon Borough Council areas (henceforth referred to as South Hams/West Devon Councils) in recent years. Our websites also give information on air quality in our areas and on our Air Quality Management Areas (AQMAs) which are discussed below. Websites are at;

www.southhams.gov.uk

www.westdevon.gov.uk

Monitoring of air quality within both Council areas is for Nitrogen Dioxide (NO_2) using diffusion tubes. This is the only monitoring currently undertaken but the aim has always been to select the worst-case relevant locations for monitoring so that officers can screen out areas where necessary and remain attentive to those where there are problems.

There are three Air Quality Management Areas (AQMAs) in the South Hams, the first of these was declared in 2005 and constitutes just one residential property which is situated immediately next to the A38 Devon Expressway.

The other two are both in market towns (Ivybridge and Totnes). These were declared in 2009 though the Totnes one was extended due to new monitoring data in 2016.

All of the South Hams AQMAs were declared because of the exceedance of the annual average Nitrogen Dioxide (NO_2) objective of 40ug/m^3 at relevant receptors, and the main source of this pollutant at all locations is road traffic.

In general, Nitrogen Dioxide levels both in AQMAs and in areas outside AQMAs in our council areas have shown a recent, very noticeable decline over the last four years (see Appendix A and particularly Figures 1-6, pages 21-28) The decline initially could have been related partly to reductions in travel caused by the Covid pandemic and subsequent related changes in travel to work patterns etc; as well as to improvements in vehicle technology and initiatives to encourage people to use active travel. For the last year (2023), Nitrogen Dioxide levels in the main appear to have decreased again, or at worst, to have remained stable over the last couple of years.

The following paragraphs summarise the findings of this review regarding annual average Nitrogen Dioxide (NO_2) levels. Concentrations are rounded to the nearest whole number, details of the data can be found in Appendix A.

Levels in the original Totnes AQMA had hovered around the 40ug/m^3 level at the original worst-case location on Bridgetown Hill for many years with no obvious decline until 2019 when they reduced to 37ug/m^3. They were lower again in 2020, which may have been because of Covid and reduced traffic levels but these low levels have remained and indeed have fallen slightly further in 2023

When the Totnes AQMA was extended in 2016, it was to include a newly found pollution hotspot at True Street junction. Levels there were still exceeding the objective level for annual average NO_2 in recent years. For example, levels of around 48ug/m^3 were monitored there in 2018 and 2019 though this was substantially lower than the 56ug/m^3 monitored in 2017. For the last three consecutive years, the annual level here has remained below the objective, but individual months have exceeded the objective and, because the data here is rather variable over the year and 3 months of data were missing in 2023, we do *not* intend to revoke this AQMA this year.

It appears that The Ivybridge AQMA has been resolved because of recently completed changes in the road layout and parking arrangements undertaken by Devon County Council (DCC) in response to the air quality and traffic issues there which had been the subject of discussions between South Hams District Council Environmental Health officers and DCC traffic planners for some time. These changes were only implemented partway through 2020 and Nitrogen Dioxide levels at receptors along this road appear to have dropped quite dramatically since then and are now around 26 ug/m^3 (appropriately adjusted 2023 data) at the worst-case location on Western Road. In 2020 and 2021 levels were just over 31ug/m^3 and 27ug/m^3 respectively, whilst before this the worst-case levels at this AQMA had hovered around the 40ug/m^3 level. We *will* revoke this AQMA now.

At Dean Prior the appropriately adjusted diffusion tube result from a tube located at the worst (highest NO_2 concentration) position declined from 69ug/m^3 in 2016 to a level of 61ug/m^3 in 2019, then to between 48 and 49 ug/m^3 in 2021 and 2022 and was down to 46ug/m^3 in 2023. This AQMA must therefore stay in place but the reductions of Nitrogen Dioxide in the last few years are substantial.

There are no declared AQMAs in the West Devon area. One slight ‘hot spot’ of pollution at East Street/Exeter Road, Okehampton appears to have experienced declining levels of NO_2 since it was first monitored in 2016, (eg from 42 ug/m^3 in 2017 to 33 ug/m^3 in 2021 and then 31ug/m^3 in 2022 and again in 2023) and additional monitoring close to this location has found no further problems there.

There are no other apparent problems in West Devon although monitoring is carried out at locations in Tavistock as well as those in Okehampton. Monitoring results at Tavistock show levels well below the objective; for example, at Dolvin Road, Tavistock appropriately adjusted levels in 2023 were 23 ug/m^3 which is a reduction of 5ug/m^3 from the 2022 results. Dolvin Road is probably the worst-case location in Tavistock judging by local knowledge and observation. However, additional monitoring sites have now been installed there to check on this (see maps in Appendix D).

The reductions in Nitrogen Dioxide seen across both council areas have occurred despite the fact that traffic levels in 2023 appear to have been at a very similar level to those in 2018 (see Appendix G, DCC data).

Apart from Nitrogen Dioxide, there are no other pollutants of concern (ie. pollutants at or approaching the objective levels) in the South Hams and West Devon areas. This is known from screening exercises and some limited previous monitoring of PM_{10} and $PM_{2.5}$ undertaken at worst case and background locations in the South Hams area by the Council and by developers (see earlier annual Air Quality Reports, available on request from South Hams District Council, contact environmental.health@swdevon.gov.uk).

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[3] 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 harmful to human health. The Air Quality Strategy[4] 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[5] 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

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

[4] Defra. Air Quality Strategy – Framework for Local Authority Delivery, August 2023

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

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.

South Hams District and West Devon Borough councils are taking active measures to reduce pollution to below current objective levels and further (see section 2 below). In addition to consultation with Devon County Council over the traffic flow changes in Ivybridge outlined above and now completed; the Councils have also included requirements within their Local Plan (Plymouth and South West Devon 2019) to ensure that Air Quality Assessments and a variety of air quality measures are included for any new significant developments that could impact on any of our AQMAs, and in particular for the two AQMAs in market towns (Ivybridge and Totnes). The measures requested are detailed in section 2.2 and include ensuring that greener travel options and the use of Low Emission Vehicles are encouraged. Would-be developers are also asked to help to identify and tackle any air pollution problems that might arise from their proposed development as part of the planning process (see also Appendix F.) All of these measures relate primarily to AQMAs on roads managed by Devon County Council, and we are keen to continue to work with our partners at DCC.

The current Local Plan runs from 2014-2034. The Councils are now beginning to consider the replacement local plan and Environmental Health will ensure that air quality considerations are included as necessary.

Previously, it was found that reducing speed on the A38 trunk road at Dean Prior (due to lengthy road works and an enforced speed limit) was correlated with a notable decrease in Nitrogen Dioxide levels monitored at the AQMA there. This finding has been discussed with Highways England, but introducing permanent speed limits on this stretch of road was not seen as a realistic solution at that time. However, Highways England has now been designated by DEFRA as an Air Quality Partner under the Environment Act 2021, and South Hams District Council will therefore seek to re-engage with them to further reduce Nitrogen Dioxide levels in our Dean Prior AQMA.

Throughout the two districts, further work is currently also being undertaken by our climate change and biodiversity team who are in the process of developing a ‘Local Cycling and Walking Infrastructure Plan’. This project will develop a network-level infrastructure plan to enable and grow active travel in and around South Hams and West Devon. It will be accompanied by a behaviour change programme to further encourage walking, wheeling and

cycling. This team have also just installed a rapid charger for electric vehicles at the council offices and are working on an electric bike hub model (see section 2.2)

Conclusions and Priorities

Levels of Nitrogen Dioxide monitored via diffusion tubes throughout South Hams and West Devon areas appear to have either reduced further or stabilised at relatively low levels for the last two years. They are all at significantly lower levels than they were in 2018 (see Appendix A).

In 2023 (as was also the case in the past three years) the only location, including the three AQMAs, still showing an exceedance of the NO_2 annual mean objective was the one on the A38 Devon Expressway at Dean Prior. The Ivybridge AQMA will now be revoked; the Totnes AQMA will be subject to further detailed monitoring in the next year and if concentrations at all monitored locations remain below the 40ug/m^3 annual objective, it will be revoked next year.

The only developments that are known about that might have an impact on air quality in the future are;

- A general increase in house building – there has been a fairly extensive increase in house building over the last few years and this is expected to continue in line with national priorities. South Hams is also the location for the construction of an entire new settlement called Sherford, currently underway. All substantial new developments are obliged by our Local Plan to undertake air quality assessments and to mitigate any potential impacts (Plymouth and South West Devon, 2019, and see Appendix F). The Sherford developers have a programme, agreed with the Council, of monitoring Nitrogen Dioxide and particulate matter.
- The possible re-opening of a large open-cast tungsten mine on the edge of Dartmoor which has become more likely in recent months as the Environment Agency (EA) have now agreed the necessary permits. This could result in increases in NO_2 (from increased traffic) and of PM_{10} and $PM_{2.5}$. Strict conditions on pollution emissions are included in the permits issued by the EA and the mine company will also be obliged to undertake its own monitoring for particulate matter if it re-opens.

Our Air Quality Action Plans will shortly be updated in line with the requirements of the Environment Act 2021 (Defra 2022). The revised Air Quality Action Plans will be incorporated into a revised Air Quality Strategy which will also include West Devon. We are hopeful that there will continue to be no need to declare any AQMAs in West Devon although the concentrations in East Street/Exeter Road Okehampton will continue to be carefully monitored. Also, the new Environment Act requirement to take measures to generally reduce $PM_{2.5}$ levels will apply to *all* areas (whether designated AQMAs or not), and this will be a key part of our revised Air Quality Strategy.

A new strategy should also seek to better understand recent and future traffic levels in Devon. That will be important for all of our AQMAs, including the A38 one which may be the only place still exceeding NO_2 objective levels in future years. We will therefore seek information on traffic levels and trends from Devon County Council and Highways England for our new Air Quality Strategy.

Local Engagement and How to get involved

Officers at the Councils believe that all Nitrogen Dioxide pollutant hot spots throughout South Hams and West Devon areas have been or are being monitored. However, if you think that your area is suffering from significant Nitrogen Dioxide air pollution, please contact us and we will consider undertaking monitoring at that location. If you are concerned about other types of air pollution, also contact Environmental Health and we will investigate your concerns.

Details of the Councils' policies and previous years' monitoring data can be found on our websites at;

https://www.southhams.gov.uk/article/3902/Air-Quality

https://www.westdevon.gov.uk/article/4594/Air-Quality

Local Responsibilities and Commitment

This ASR was prepared by the Environmental Health Department of South Hams and West Devon Councils with the support and agreement of the following officers and departments:

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Paul King, Environmental Health SHWD

Adam Williams, climate change officer SHWD

Gemma Bristow, community digital connectivity officer SHWD

DCC

This ASR has been approved by:

Ian Luscombe, Head of Environmental Health, SHWD

This ASR has been sent to a Director of Public Health but the Council have not as yet (17.9.24) received a reply.

If you have any comments on this ASR please send them to Sarah Harcombe at

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1 Local Air Quality Management

This report provides an overview of air quality in South Hams District and West Devon Borough Council areas during 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 South Hams District and West Devon Borough Councils 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 in Appendix E.

2 Actions to Improve Air Quality

2.1 Air Quality Management Areas

Air Quality Management Areas (AQMAs) are declared when there is an exceedance or likely exceedance of an air quality objective. After declaration, the authority 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.

A summary of AQMAs declared by South Hams District Council can be found in Table 2.1. The table presents a description of the three AQMA(s) that are currently designated within South Hams.

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

provides maps of AQMA(s) and also the air quality monitoring locations in relation to the AQMA(s). The air quality objectives pertinent to the current AQMA designation(s) are as follows:

- NO_2 annual mean

Dean Prior AQMA is located immediately adjacent to the A38 Devon Expressway. Levels of annual average NO_2 have fallen here quite substantially since 2019 and are now well below the level of 60ug/m3 (the level which indicates that the hourly objective could also be exceeded.) However, the concentrations here are still above the annual mean objective so this AQMA must remain in place for now.

Although NO_2 levels throughout the Totnes AQMA have been below the objective for the past four years; there are still individual months where they are significantly above the objective in the True Street junction area and levels do seem to have been rather inconsistent here throughout 2023 (see section 2.2 and Appendix A below). We have therefore very recently added another diffusion tube to the True Street area to get a more

accurate picture of what is going on, and although we will not revoke this AQMA now, we will consider doing so next year if the monitoring provides us with sufficient confidence to do so.

At Ivybridge AQMA. NO_2 annual mean concentrations have been below the objective level for the last 5 years and we know that there is a clear reason for this as work was undertaken there to improve traffic flow during 2019. In line with our results and Defra guidance therefore, we will revoke this AQMA.

West Devon Borough Council currently does not have any declared AQMAs though we continue to monitor Nitrogen Dioxide in the areas that we feel are the worst-case locations for such pollution in West Devon. Results are shown in section 2.2 below

Details of the AQAPs are provided in our 2019 Air Quality Strategy. Although we have been unable to update this strategy in the last year as originally hoped, we do plan to develop a new one as soon as possible to prevent and reduce polluting activities in all areas of the two local authorities. This new strategy will also be updated regarding the latest status of the AQMAs.

Table 2.1 – Declared Air Quality Management Areas

AQMA Name	Date of Declaration	Pollutants and Air Quality Objectives	One Line Description	Is air quality in the AQMA influenced by roads controlled by Highways England?	Level of Exceedance: Declaration	Level of Exceedance: Current Year	Number of Years Compliant with Air Quality Objective	Name and Date of AQAP Publication	Web Link to AQAP
A38 Dean Prior AQMA	03.03.2005	NO2 Annual Mean	single residential property immediately adjacent to A38	YES	70	47	none	Clean Air Strategy for South Hams and West Devon, 2019	www.southhams.gov.uk
Ivybridge Western Road AQMA	17.07.2009	NO2 Annual Mean	an area encompassing all properties fronting Western Road, Ivybridge	NO	55	No exceedance (27)	five	Clean Air Strategy for South Hams and West Devon, 2019	www.southhams.gov.uk
Totnes AQMA	declared 13/07/2009; amended on 08.06.2016	NO2 Annual Mean	An area encompassing properties fronting a stretch of the A385 in Totnes between True Street junction and the junction of Clay Lane	NO	43	No exceedance (28)	four	Clean Air Strategy for South Hams and West Devon, 2019	www.southhams.gov.uk

☒ **South Hams/West Devon Councils confirm the information on UK-Air regarding their AQMA(s) is up to date.**

South Hams/West Devon Councils confirm that all current AQAPs have been submitted to Defra.

2.2 Progress and Impact of Measures to address Air Quality in South Hams/West Devon

Defra's appraisal of last year's ASR concluded as follows (see italics).

The report is well structured, detailed, and provides the information specified in the Guidance. The following comments are designed to help inform future reports:

1. *All graphs are well presented and are clear to read. Both Councils have also provided a detailed discussion of the trends, and it is encouraged that this continues with future ASRs.*

2. *The maps of monitoring locations and AQMAs in SHDC are informative and well presented. Although there is no AQMAs in WDBC, it would be beneficial to include a map showing the locations of the monitors in Okehampton and Tavistock.*

3. *Comments from last year's ASR have been mentioned and addressed, which is welcomed.*

4. *Updates to the Air Quality Action Plans are imminent, aligning with the Environment Act 2021 (Defra 2022) mandates. These updated plans will be integrated into a revised Air Quality Strategy, which will also encompass West Devon. Special attention will be given to monitoring the concentrations at Exeter Road in Okehampton. The progress of these initiatives is positively noted, and an update is anticipated in the next year's ASR.*

5. *The Councils have taken seven measures to improve air quality. Those measures include the promotion of travel alternatives, such as walking and cycling, and the development of infrastructure for alternative refuelling options to support low-emission transportation. These measures are deemed suitable for the intended purpose.*

6. *The Councils have robust QA/QC procedures, which were applied appropriately and accurately to the 2022 non-automatic monitoring data with a relevant national bias adjustment factor having been determined and selected. It would be beneficial to include a screenshot of the tool so the factor can be verified.*

7. *The Council have not discussed the health outcomes attributable to particulate air pollution. No information was included on the area's fraction of mortality due to the long-term exposure to PM pollution in the region (e.g., D01-Fraction of Mortality Attributable to Particulate Air Pollution, which can be found at: http://fingertips.phe.org.uk/public-health-outcomes-framework).*

8. *Overall, the report is well-structured and provides really useful information on Council's work and the current and future measures to improve air quality.*

Our responses to these points, where applicable, are as follows;

1 We will include some maps of the West Devon monitoring locations with this report

2 Unfortunately we have not had the resources (due to an increase in the amount of other essential Environmental Health and Animal Licensing work) to produce the Air Quality Strategy incorporating updated Air Quality Action Plans in the past year. We will aim to do this in the coming year however, and this will include updates to the status of the AQMAs in the area (ie. the revocation of Ivybridge AQMA – see section 2.1 above).

3 The measures regarding promotion of low emission vehicles and active travel are being progressed by our climate change officer and his team (see section 1 above and Table 2.2 below).

4 A screenshot of the national bias adjustment factor will be included in the QA/QC Appendix of this report.

5 Information on the area's fraction of mortality due to the long-term exposure to PM pollution in the region has now been found and is included in this report (see section 2.3 below).

We have increased the number of diffusion tube monitoring locations both within and outside of AQMAs as Defra have previously asked.

South Hams/West Devon Councils have 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 2.2. Seven measures are included within Table 2.2, with the type of measure and the progress South Hams/West Devon councils 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 2.2.

More detail on these measures can be found in their respective Action Plans within our previous Air Quality Strategy (SHDC/WDBC 2019) and the forthcoming Local Walking and Cycling Infrastructure Plan.

Key completed measures are:

- Changes to parking and road layout in Western Road, Ivybridge

- Requirements for developers' Air Quality Assessments and any necessary mitigation specified in our Local Plan and Planning Validation checklist (Plymouth and South West Devon, 2019, Appendix F).
- Significant new developments which could impact on AQMAs have included measures to improve green travel planning, infrastructure and incentives within their planning applications (eg. planned developments at Dartington, Ivybridge and Sherford). Similar measures have already been implemented where new developments have been built (eg at Steamer Quay, Totnes). At this latter site, a green travel coordinator has also been appointed via S106 monies. This coordinator is employed by Totnes town council.
- We are close to completion of a local Cycling and Walking Infrastructure Plan (LCWIP) and Behaviour Change Strategy for both councils that is being undertaken by Phil Jones Associates and Cycling UK.
- A rapid charger for electric vehicles has been installed at the main council offices in South Hams. It will be available for public use after an internal trial with staff and council vehicle fleet.
- Development of a public e-bike network will be rolled out across Totnes in 2025, possibly to be the first entirely Council run initiative in the UK.
- Some climate awareness training for council staff has taken place and more is planned.

South Hams and West Devon councils expect the following measures to be completed over the course of the next reporting year:

- A continuation of planning measures as new developments likely to impact on our AQMAs go through the planning application process, and as developments are actually built.
- The LCWIP should be completed.
- Our climate change team work on a new e-bike hub model for Totnes will proceed.
- The new rapid charger will be available for use by all electric vehicle owners.

The two councils' priorities for the coming year are;

- To implement the requirements of the Environment Act 2021, to engage with Defra's new Environment Strategy for England (Defra 2023) and to update our own Air Quality Plans and strategy accordingly.
- To continue to form and foster partnership working with bodies such as DCC and Highways England and to strengthen internal working relationships, notably with the climate change work being done within the Councils.
- To continue and extend NO_2 monitoring of any areas where we are concerned about pollution levels.
- To monitor whether the traffic changes in Ivybridge continue to result in reduced NO_2 levels. Notwithstanding the continued monitoring, we will revoke the AQMA there in the light of the last five years' monitoring results
- To continue monitoring in the Totnes AQMA (particularly around True Street to see if the objective continues to be met in all locations there, ultimately with a view to revoking that AQMA next year if possible.
- To specifically discuss the Dean Prior AQMA and possible solutions to it, with Highways England.
- To ensure that any new developments that meet the criteria specified in our Local Plan undertake Air Quality Assessments as necessary and, where they may have an impact, that the developers include and ultimately act upon mitigation measures with their proposals.
- To ensure that air quality issues are considered as the replacement Local Plan is drawn up.
- To make available Climate Awareness (Literacy) training for all staff who are interested.
- To complete the Local Cycling and Walking Infrastructure Plan (LCWIP)
- To complete the Totnes e bike model in conjunction with Totnes town council.

The principal challenges and barriers to implementation that the Councils anticipate facing are limited in-house staff resources coupled with increasing workload in other Environmental Health areas of work, and also of money to pay for contractors etc. However, it is hoped that the Council's stated climate change emergency and biodiversity agendas will allow additional resources that can be used to improve air quality in future

We have already implemented a strong policy basis for air quality in our Local Plan, and this will need to be updated when the new Local Plan is developed. We would also like to develop other low resource options to promote air quality awareness elsewhere, such as councillor training and information sessions, raising awareness and behaviour changes via nudges. This has begun with the climate awareness training noted above and the LCWP should promote more 'nudges'.

Progress on updating our Air Quality plans and Strategy and on furthering discussions with Highways England regarding the Dean Prior AQMA have been slower than expected due to very limited time resources in Environmental Health.

South Hams/West Devon Councils anticipate that the measures stated above and in Table 2.2 will achieve compliance in the Ivybridge and Totnes AQMAs.

Whilst the measures stated above and in Table 2.2 will help to contribute towards compliance, South Hams/West Devon Councils anticipate that further additional measures not yet prescribed will be required in subsequent years to achieve compliance and enable the revocation of the Dean Prior AQMA. Engagement with Highways England is required to progress this, and we will seek this next year. However, it should be noted to Defra that Highways England have not approached us at all in recent years about the long standing Dean Prior AQMA on the A38 Devon Expressway.

Table 2.2 – Progress on Measures to Improve Air Quality, 3 key measures in bold

Measure No.	Measure Title	Category	Classification	Year Measure Introduced in AQAP	Estimated / Actual Completion Date	Organisations Involved	Funding Source	Defra AQ Grant Funding	Funding Status	Estimated Cost of Measure	Measure Status	Reduction in Pollutant / Emission from Measure	Key Performance Indicator	Progress to Date	Comments / Barriers to Implementation
1	**Transport**	**Promoting Travel Alternatives**	**Promotion of walking**	**2018**	**2025**	**Local Authority Environmental Health and climate change officer, Local Authority Transport Dept,**	**s106/CIL monies**	**NO**	**Funded**	**< £10k**	**Implementation**	**reduced vehicle emissions**	**Measured Concentration at AQMAs within towns- aim to be below AQO then reduce further**	**implementation on-going**	**ongoing as new developments buiolt, walking initiatives are built in where possible. The LCWIP will focus on this in future**
2	**Transport**	**Promoting Travel Alternatives**	**Promotion of cycling**	**2018**	**2025**	**Local Authority Environmental Health and climate change officer, Local Authority Transport Dept, Totnes town council**	**s106/CIL monies**	**NO**	**Funded**	**< £10k**	**Implementation**	**reduced vehicle emissions**	**Measured Concentration at AQMAs within towns- aim to be below AQO then reduce further**	**implementation on-going**	**ongoing as new developments built, new cycling facilities are included where possible. The LCWIP a e-bike network will focus on this in future**
3	**promoting technology**	**Promoting Low Emission Transport**	**Procuring alternative Refuelling infrastructure to promote Low Emission Vehicles, EV recharging, Gas fuel recharging**	**2018**	**2025**	**Local Authority Environmental Health and climate change officer, Local Authority Transport Dept**	**s106/CIL monies**	**NO**	**Partially Funded**	**£500k - £1 million**	**Implementation**	**reduced vehicle emissions**	**Measured Concentration at AQMAs within towns- aim to be below AQO then reduce further**	**Implementation on-going**	**ongoing as new developments built, new charging points are installed. New rapid charger at council offices.**
4	transport	Promoting Travel Alternatives	Encourage / Facilitate home-working	2018	2025	Local Authority Environmental Health and climate change officer, Local Authority Transport Dept	s106/CIL monies	NO	Funded	< £10k	Implementation	reduced vehicle emissions	Measured Concentration at AQMAs within towns- aim to be below AQO then reduce further	implementation on-going	ongoing as new developments built, facilities for home working are built in where possible
6	information/education	Public Information	Via the Internet	2019	2030	Local Authority Environmental Health, climate change officer, Local Authority Transport Dept. (DCC)	s106/CIL monies	NO	Partially Funded	< £10k	Implementation	2%	not measureable	implementation on-going	limited impact

Measure No.	Measure Title	Category	Classification	Year Measure Introduced in AQAP	Estimated / Actual Completion Date	Organisations Involved	Funding Source	Defra AQ Grant Funding	Funding Status	Estimated Cost of Measure	Measure Status	Reduction in Pollutant / Emission from Measure	Key Performance Indicator	Progress to Date	Comments / Barriers to Implementation
6	Transport (Ivybridge)	Transport Planning and Infrastructure	Other	2020	2021	Devon County council highways	S106/CIL monies	NO	Funded	£50k - £100k	Implementation	5ug/m3	to meet AQO	Completed in Ivybridge	Done in Ivybridge
7	Transport	Promoting Travel Alternatives	Workplace Travel Planning	2018	2025	Local Authority Environmental Health and climate change officer, Local Authority Transport Dept	s106/CIL monies	NO	Funded	< £10k	Implementation	reduced vehicle emissions	Measured Concentration at AQMAs within towns- aim to be below AQO then reduce further	implementation on-going	ongoing as significant new developments built, developers are asked to produce green travel plans The LCWIP will focus on this in future

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

As detailed in Policy Guidance LAQM.PG22 (Chapter 8) and the Air Quality Strategy[6], 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.

Information from the Public Health section at Devon County Council indicates that the percentage of deaths attributable to ambient particulate matter across Devon is below the figure for the whole of England (3.4-4% compared to 5.1% respectively) (DCC 2020). Nevertheless, it is an issue that still needs to be addressed here and South Hams District and West Devon Borough councils are taking the following measures to address $PM_{2.5}$.

All measures identified in the section above to reduce Nitrogen Dioxide within AQMAs and elsewhere are aimed at reducing all emissions from transport sources. As these are also a source of PM_{10} and $PM_{2.5,}$ they should also help to reduce levels of these pollutants.

The Councils have no smoke control areas but we have drawn up a leaflet on how to use wood burning stoves correctly so as to reduce emissions from them as far as possible. Such stoves are quite popular in our relatively rural districts, so aiming at this source is important. This leaflet will be made available on the website and to any stove owners who are the subject of smoke complaints. The councils will seek to work with others, such as Public Health at DCC, to alert residents to the issues of smoke from any domestic wood burning appliances and bonfires and how best to control emissions. However, it is recognised that this may be a problem during this coming winter because of the high cost of energy and people with fireplaces and solid fuel burners may see the burning of cheap wood as a way to deal with the high costs.

The Councils will control all particulate emissions from building works throughout the areas by ensuring that Construction Environment Management Plans (CEMPs) are drawn up, agreed and implemented for all major developments. These CEMPs will include conditions to ensure that nuisance dust and smaller particulate matter is monitored

[6] Defra. Air Quality Strategy – Framework for Local Authority Delivery, August 2023

routinely by the developers and controlled through dampening and other means as necessary.

The Councils will ensure that significant new developments that may increase particulate matter emissions such as the tungsten mine, will have a robust monitoring programme for PM_{10} and $PM_{2.5}$ and will control the emissions of such pollutants carefully.

Complaints of smoke from bonfires or other sources will be investigated under our nuisance procedure and appropriate information provided or enforcement action undertaken where necessary. We will also work closely with our internal partners to encourage recycling and with the Environment Agency in cases of commercial waste burning.

There are a number of permitted processes within the two council areas where the emissions of particulate matter are controlled via permit conditions. These include;

- A clay calcining process (A2 permit)
- A clay drying process
- A powder paint spray process
- Mobile crushing processes
- Cement batching processes
- Non-ferrous foundry process

For all of the above, permit conditions are enforced by regular site visits to check for compliance and (where applicable) emissions tests are undertaken and checked by the Councils.

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

This section sets out the monitoring undertaken within 2023 by South Hams and West Devon Councils 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.

3.1 Summary of Monitoring Undertaken

3.1.1 Automatic Monitoring Sites

Neither of the councils have any automatic air monitoring sites for any pollutants

Non-Automatic Monitoring Sites

As previously requested by Defra, South Hams and West Devon Councils increased our non-automatic monitoring (ie. passive monitoring with diffusion tubes) last year and undertook such monitoring of NO_2 at 31 sites during 2023. No automatic monitoring is undertaken by South Hams/West Devon Councils

Table A.2 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 and annualisation (where the annual mean data capture is below 75% and greater than 25%). Further details on adjustments are provided in Appendix C.

3.2.1 Nitrogen Dioxide (NO_2)

Table A.2 and Table A.3 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 2023 dataset of monthly mean values is provided in Appendix B. Note that the concentration data presented in Table B.1 only need to include distance corrected values if relevant (ie. where tubes are not representative of a receptor and the concentration is more than 36ug/m^2 (Defra guidance)). In our case, none of the tubes met these criteria, therefore no distance corrections have been made.

The Executive Summary at the start of this report has included information on the key findings and trends of our NO_2 diffusion tube monitoring data, so they will not be repeated here.

In general, the concentrations of this pollutant at all the sites have either declined or stabilised over the past four years and the trend over the last six years is downwards for the key sites within our Air Quality Management Areas and at non AQMA monitoring areas in West Devon (see also tables in Appendix A and the graphs on pages 21-28). The decline in Nitrogen Dioxide has occurred despite an apparent stablisation of traffic levels compared to those pre covid in 2018 and 2019 (see Appendix G, DCC traffic count data

The only site where diffusion tube monitoring indicates that the annual mean NO_2 objective is still not being met is at the Dean Prior site on the A38 trunk road, though that too has declined in recent years and now is likely to meet the hourly NO_2 objective according to Defra guidance (Defra LAQM.TG22).

3.2.2 Particulate Matter (PM_{10})

No monitoring of PM_{10} was undertaken by the councils in South Hams/West Devon areas in the year 2023

3.2.3 Particulate Matter ($PM_{2.5}$)

No monitoring of $PM_{2.5}$ was undertaken by the councils in South Hams/West Devon areas in the year 2023

3.2.4 Sulphur Dioxide (SO_2)

No monitoring of SO_2 was undertaken by the councils in South Hams/West Devon areas in the year 2023

Appendix A: Monitoring Results

Table A.1 – Details of Automatic Monitoring Sites

No automatic monitoring is undertaken by South Hams/West Devon Councils

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

Diffusion Tube ID	Site Name	Site Type	X OS Grid Ref (Easting)	Y OS Grid Ref (Northing)	Pollutants Monitored	In AQMA? Which AQMA?	Distance to Relevant Exposure (m) (1)	Distance to kerb of nearest road (m) (2)	Tube Co-located with a Continuous Analyser?	Tube Height (m)
TSH1	Queens Terrace (Cranmore house)	Roadside	280085	60765	NO2	Totnes	0.0	3.0	No	2.0
TSH3	Puddavine old	Roadside	279612	61407	NO2	Totnes	5.0	1.0	No	2.0
TSH5	Bridgetown Hill Terrace	Roadside	281097	60510	NO2	Totnes	0.0	1.0	No	3.0
TSH6	Bridgetown Hill bottom	Roadside	280920	60387	NO2	Totnes	0.0	1.0	No	3.0
TSH9	Bridgetown Hill busstop	Roadside	281063	60493	NO2	Totnes	0.0	1.0	No	3.0
TSH10	Bridgetown Hill corner	Roadside	280742	60285	NO2	Totnes	0.0	1.0	No	3.0
TSH12	True Street	Kerbside	282103	60609	NO2	Totnes	2.0	1.0	No	1.0
TSH13	Candletree	Kerbside	282066	60579	NO2	Totnes	10.0	1.0	No	2.0
ISH1	Western Road End	Roadside	263192	56011	NO2	Ivybridge	0.0	1.0	No	3.0

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)
ISH5	Western Road Old	Roadside	263192	55989	NO2	Ivybridge	0.0	1.0	No	2.0
ISH6	Sportsmans Arms Ivybridge	Roadside	263220	55981	NO2	Ivybridge	0.0	2.0	No	2.0
DPSH1	Dean Prior Farm	Roadside	263784	56276	NO2	Dean Prior	3.0	1.0	No	3.0
DPSH2	Dean Prior	Roadside	272956	56273	NO2	Dean Prior	0.0	1.0	No	2.0
DPSH3	Dean Prior Sign	Roadside	272665	63484	NO2	Dean Prior	0.0	5.0	No	2.0
TWD1	Dolvin Road Tavistock	Roadside	273005	63496	NO2	no aqma	0.0	1.0	No	3.0
TWD4	Vets Plymouth Road, Tavistock	Roadside	248421	74556	NO2	no aqma	2.0	1.0	No	2.0
OWD2	Exeter Road Oke 1	Roadside	259066	95233	NO2	no aqma	0.0	1.0	No	3.0
OWD3	Exeter Road Oke 2	Roadside	25906	95222	NO2	no aqma	0.0	1.0	No	2.0
OWD4	Exeter Road Oke opp	Roadside	259196	95213	NO2	no aqma	0.0	1.0	No	2.0
TSH13	Candletree	Roadside	282066	60579	NO2	Totnes	0.0	1.0	No	2.0
TSH14	Totnes Hospital	Roadside	280464	60613	NO2	Totnes	0.0	2.0	No	3.0
TSH15	Devon Ceramics	Roadside	280296	60704	NO2	Totnes	8.0	2.0	No	3.0
TSH16	Totnes tyres	Roadside	280008	60704	NO2	Totnes	0.0	2.0	No	2.0
TSH17	Puddavine new	Roadside	279468	61542	NO2	Totnes	1.0	1.0	No	2.0
TSH18	The Lamb, Totnes	Roadside	279468	61542	NO2	Totnes	0.0	2.0	No	2.0
ISH4	Western Road Imperial Pub	Roadside	263235	55986	NO2	Ivybridge	5.0	1.0	No	3.0
ISH7	Western Road New	Roadside	263246	55992	NO2	Ivybridge	0	1.0	No	3.0
ISH9	Western road busstop	Roadside	262944	55928	NO2	Ivybridge	2	2.0	No	4.0

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)
TWD5	Terrace Plymouth Road, Tavistock	Roadside	248093	73037	NO2	No aqma	0	7.0	No	2.0
TWD6	Callington road, Tavistock	Roadside	247505	74018	NO2	No aqma		1	No	3.0
TSH19	Harbertonford	Roadside	278402	56173	NO2	No aqma	0	1	no	3.0
TSH20	Dartington A385	kerbside	278456	62036	NO2	No aqma	1	0	No	3.0

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.3 – Annual Mean NO_2 Monitoring Results: Non-Automatic Monitoring (µg/m^3)

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 2023 (%) (2)	2019	2020	2021	2022	2023
TSH1	280085	60765	Roadside	100	100.0	29.8	24.2	23.7	24.6	24.6
TSH3	279612	61407	Roadside	83	83	17.6	15.1	15.8	14.0	10
TSH5	281097	60510	Roadside	100	100.0	37.0	30.5	29.5	31.7	26.7
TSH6	280920	60387	Roadside	100	100.0	35.7	28.4	26.4	24.7	24.5
TSH9	281063	60493	Roadside	100	100.0	28.9	25.1	27.2	27.3	24.4
TSH10	280742	60285	Roadside	100	100.0	19.7	15.9	17.4	20.1	18.1
TSH12	282103	60609	Kerbside	75	75.0	**47.7**	38.7	33.7	35.1	27.8
TSH13	282066	60579	Kerbside	100	100.0	23.7	22.8	23.8	23.5	21.1
ISH1	263192	56011	Roadside	100	100.0	29.5	22.9	20.2	20.5	19.5
ISH5	263192	55989	Roadside	83	83	39.4	31.4	27.3	25.6	26.9
ISH6	263220	55981	Roadside	100	100.0	22.0	20.6	19.3	20.7	19.9
DPSH1	263784	56276	Roadside	83	83	21.7	17.5	17.4	19.2	16.6
DPSH2	272956	56273	Roadside	92	92	**61.2**	**53.3**	**48.1**	**49.2**	**46.7**
DPSH3	272665	63484	Roadside	92	92	33.9	26.2	26.9	29.4	26.9
TWD1	273005	63496	Roadside	75	75.0	31.4	26.1	26.0	27.8	23.1
TWD4	248421	74556	Roadside	83	83	25.4	21.5	23.3	22.4	18.1
OWD2	259066	95233	Roadside	92	92	**39.1**	28.4	33.0	31.4	31.1
OWD3	25906	95222	Roadside	92	92	29.8	19.3	18.2	17.7	12.6
OWD4	259196	95213	Roadside	83	83	20.7	21.9	23.8	20.0	23.5
TSH14	280464	60613	Roadside	100	100	-	-	-	-	19.8
TSH15	280296	60704	Roadside	100	100	-	-	-	-	22.9
TSH16	280008	60704	Roadside	100	100	-	-	-	-	21.4
TSH17	279468	61542	Roadside	83	83	-	-	-	-	23.0
TSH18	279468	61542	Roadside	92	92	-	-	-	-	20.0
ISH4	263235	55986	Roadside	83	83	-	-	-	-	21.3
ISH7	263246	55992	Roadside	100	100	-	-	-	-	24.1
ISH9	259066	55927	Roadside	83	83	-	-	-	-	20.7
TWD5	248093	73037	Roadside	New in 2024	New in 2024	-	-	-	-	-

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 2023 (%) (2)	2019	2020	2021	2022	2023
TWD6	247505	74018	Roadside	92	92	-	-	-	-	23.4
TSH13	282066	60579	roadside	New in 2024	New in 2024	-	-	-	-	-
TSH19	278402	56173	Roadside	100	100	-	-	-	-	12.6
TSH20	278456	62036	Roadside	100	100	-	-	-	-	11.6

☒ **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/m^3.

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**.

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 1; Bridgetown Hill Totnes, Tube TSH5, results 2018-2023

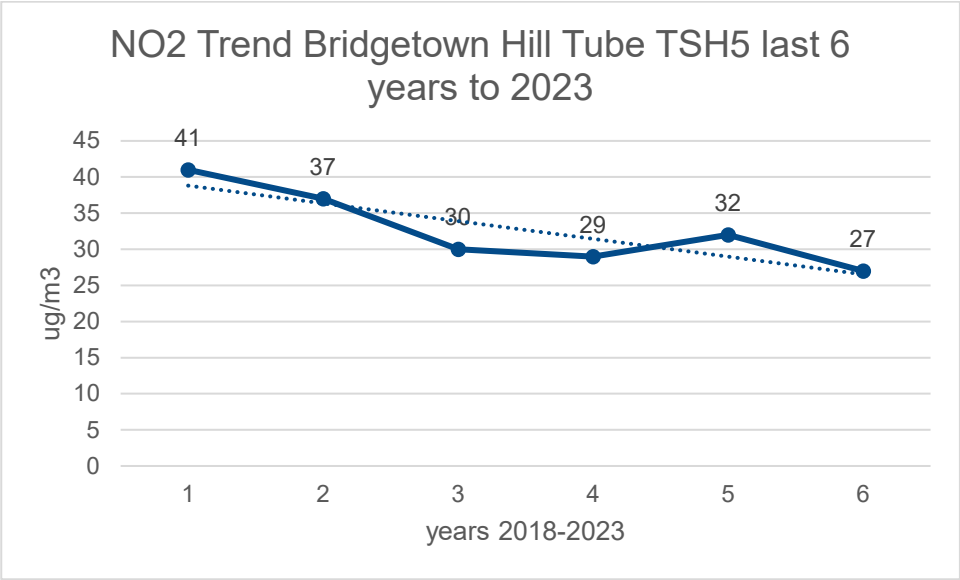


Figure 2; True Street, Totnes, Tube TSH12, results 2018-2023

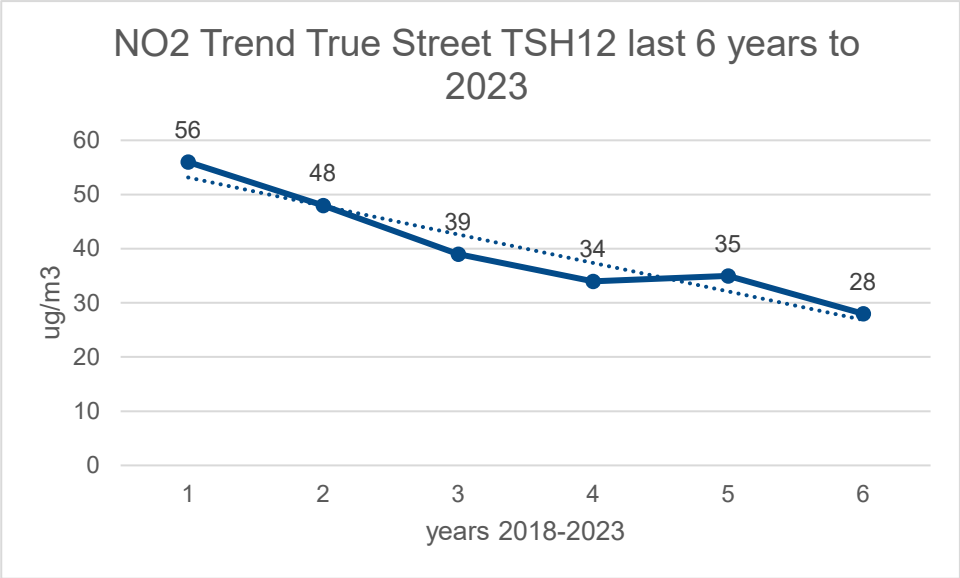


Figure 3; Western Road, Ivybridge Tube ISH5, results 2018-2023

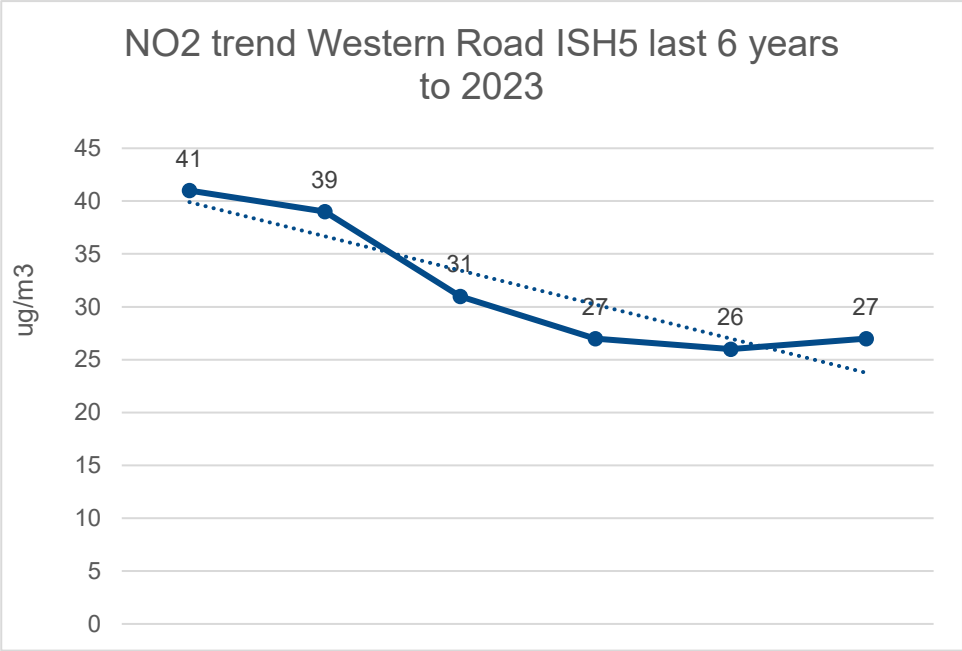


Figure 4; Dean Prion, A38 Tube DPSH2, results 2018-2023

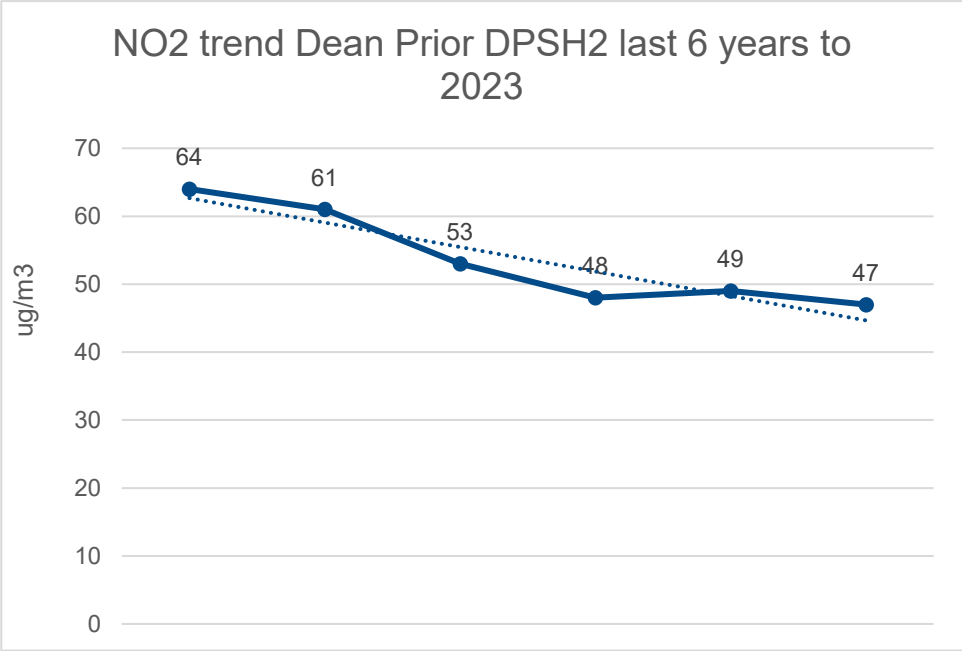


Figure 5; East Street/Exeter Road, Okehampton Tube OWD2, results 2018-2023

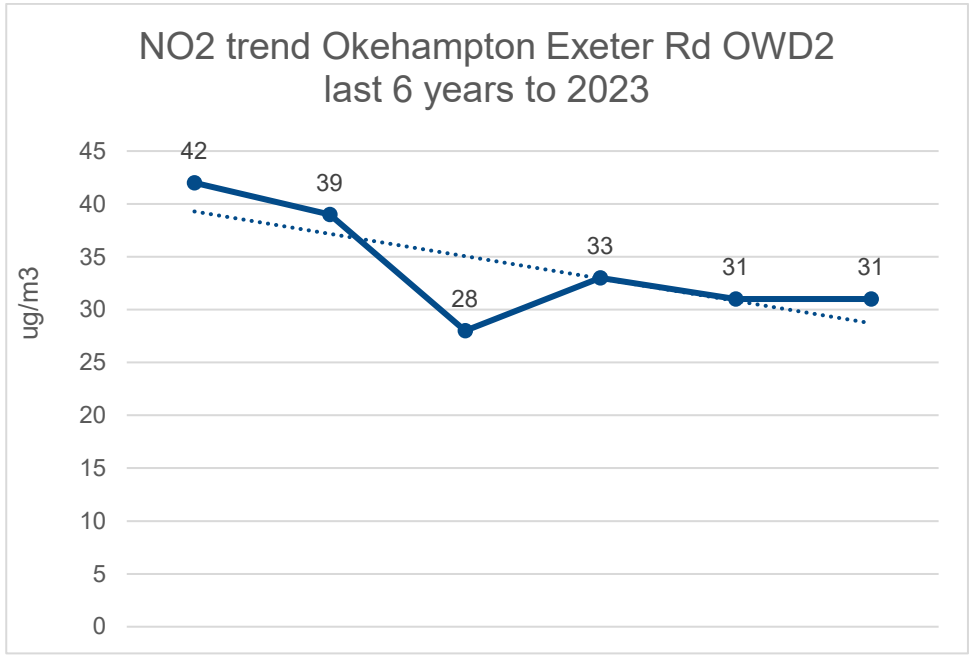
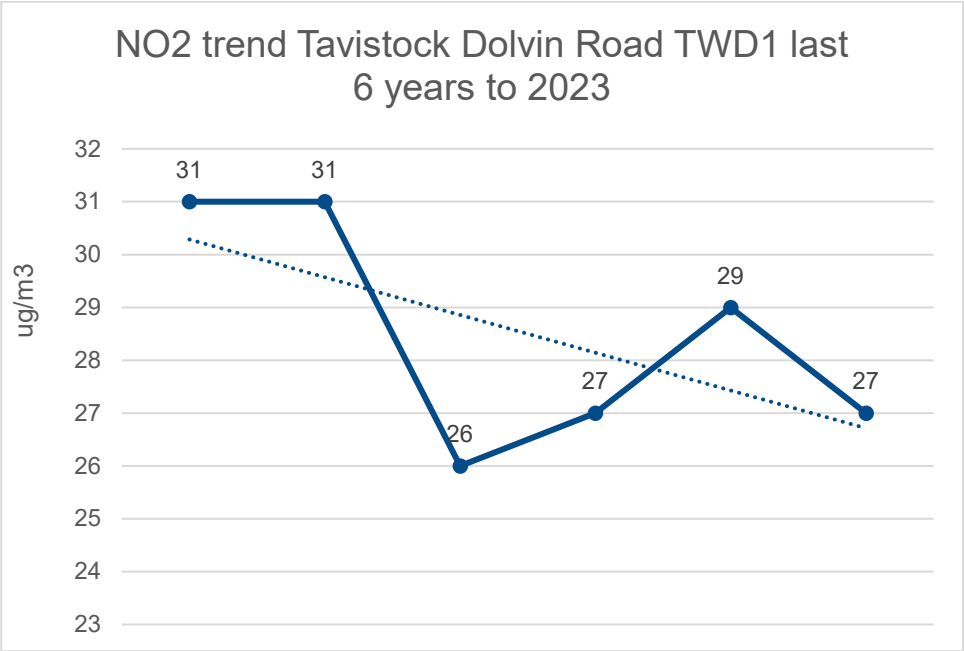


Figure 6; Dolvin Road, Tavistock, Tube TWD1, results 2018-2023



Appendix B: Full Monthly Diffusion Tube Results for 2023

Table B.1 – NO_2 2023 Diffusion Tube Results ($\mu g/m^3$)

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 <(x.x)>	Annual Mean: Distance Corrected to Nearest Exposure	Comment
TSH1	280085	60765	34.9	32.1	23.1	27.9	24.3	32.4	26.5	26.4	33.5	33.5	29.2	25.8	29.1	23.6	23.6	
TSH3	279612	61407		16.8	12.1	14.4	11.4	11.5	9.5	10.8	12.2	12.9	15.5	9.4	12.4	10.0	10.0	
TSH5	281097	60510	**40.9**	37.6	35.9	35.4	34.3	32.1	18.5	33.7		37.5	31.2	26.2	33.0	26.7	26.7	
TSH6	280920	60387	25.1	39.5	29.0	30.1	27.8	17.4	27.1	31.8	35.3	34.5	39.1	25.7	30.2	24.5	24.5	
TSH9	281063	60493	38.7	36.5	25.9	32.0	33.9	28.4	21.3	29.2	30.6	31.8	31.0	21.8	30.1	24.4	24.4	
TSH10	280742	60285	**45.3**	23.5		17.6	20.2	21.7	12.7		19.1	18.1	21.3	13.4	22.3	18.1	18.1	
TSH12	282103	60609	**52.5**	32.9	26.4	28.4	**41.3**	**50.6**	17.3	36.4			23.4		34.3	27.8	27.8	
TSH13	282066	60579	30.8	31.0	21.9	31.2	34.9	29.1	19.9	25.5	23.3	23.4	25.8	16.8	26.1	21.1	21.1	
ISH1	263289	56002	33.2	26.5	21.2	24.8	22.1	22.7	15.3	20.6	24.8	27.6	26.2		24.1	19.5	19.5	
ISH5	263192	55989	**42.5**	39.5	31.2	31.3	28.0	32.4	24.9	26.9	33.5	38.0	30.0	28.2	32.2	26.1	26.1	
ISH6	263811	56269	35.3	28.0	22.8	23.9	19.2	23.3	17.8	19.8	28.1	29.5	25.1	22.3	24.6	19.9	19.9	
DPSH1	263784	56276	26.6	22.3	17.7	20.7	23.2	21.8	14.7	20.5	22.5	24.3	21.1	10.9	20.5	16.6	16.6	
DPSH2	272956	56273	**61.7**	**60.9**	**57.2**	**59.8**	**61.6**	**53.7**	**48.7**	**56**	**64.5**	**67.8**	**50.2**	**48.6**	**57.6**	**46.7**	26.9	
DPSH3	272665	63484	35.3	34.2	33.9	32.4	31.5	36.0	27.9	31.5	34.2	**40.1**	29.3	32.3	33.2	26.9	26.9	
TWD1	273005	63496	35.4	30.2	28.3	29.3	28.0	26.4	25.7	23.5	32.6	31.5	30.4	21.3	28.5	23.1	23.1	
TWD4	248421	74556	21.6	25.6	28.8	28.0	26.4	27.8	31.8	24.9	24.9	31.2	31.2	23.9	22.3	18.1	18.1	
OWD2	259066	95233	39.4	46.0	30.3	**41.5**	**41.6**	**40.3**	30.9	37.2	**43.4**	35.5	**44.8**	30.4	38.4	31.1	31.1	
OWD3	25906	95222	18.4	22.3	19.4	24.9	17.8	19.9			16.0		25.1	19.5	15.6	12.6	12.6	
OWD4	259196	95213		32.9	27.8	30.3			29.0	26.6	29.0	28.9	32.4	23.9	29.0	23.5	23.5	
TSH14	280464	60613	32.7	31.5	228.0	23.5	22.8	22.9	18.2	22.8	26.9	23.3	27.2	18.9	24.4	19.8	19.8	

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 <(x.x)>	Annual Mean: Distance Corrected to Nearest Exposure	Comment
TSH15	280296	60704	38.7	34.5	23.1	30.0	30.4	28.0	19.3	26.3	27.8	27.3	31.0	23.3	28.3	22.9	22.9	
TSH16	280008	60704	31.9	32.0	20.8	27.5	31.9	26.5	13.8	28.1	25.6	29.5	29.0	20.5	26.4	21.4	21.4	
TSH17	279468	61542	39.2	34.1	24.6	28.6	25.5	25.3	23.2	27.5	29.8			25.9	28.4	23.0	23.0	
TSH18	279468	61542		29.6	24.6	21.3	19.9	22.2	22.4	23.4	31.4	24.6	27.8	24.0	24.7	20.0	20.0	
ISH4	263235	55986	40.4	29.8	22.8	23.8	18.6		19.1	19.1		27.5	30.4	31.3	26.3	21.3	21.3	new
ISH7	263246	55992	44.9	32.2	28	30.5	23.4	28.2	24.5	24.8	36.2	31	24.7	27.5	29.7	24.1	24.1	new
ISH9	259066	55927	37.3		22.1	24.1	19.3	25.2	22.1	21.5	27.6	32.3		24.9	25.6	20.7	20.7	new
TWD5	248093	73037	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	New-only started 2024
TWD6	247505	74018	34.5	33.5	23.7	23.6	22	24.4		41.4	29.1	28.1	31.8	25.7	28.9	23.4	23.4	new
TSH19	278402	56173	21.4	18.9	12.5	16.8	14.6	14.1	10	14.2	16.2	17.3	16.8	13.5	15.6	12.6	12.6	New
TSH20	278456	62036	22.2	20.6	11.8	14.5	11	11	10	13.1	15.1	9.1	20.4	13	14.3	11.6	11.6	new

☒ **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 .**

☒ South Hams/West Devon councils **confirm that all 2023 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

Sources Identified Within South Hams/West Devon During 2023

South Hams/ West Devon councils have not identified any new sources of air pollution relating to air quality within the reporting year of 2023

Additional Air Quality Works Undertaken by South Hams/West Devon Councils During 2023

South Hams/West Devon Councils have not completed any additional works within the reporting year of 2023..

QA/QC of Diffusion Tube Monitoring.

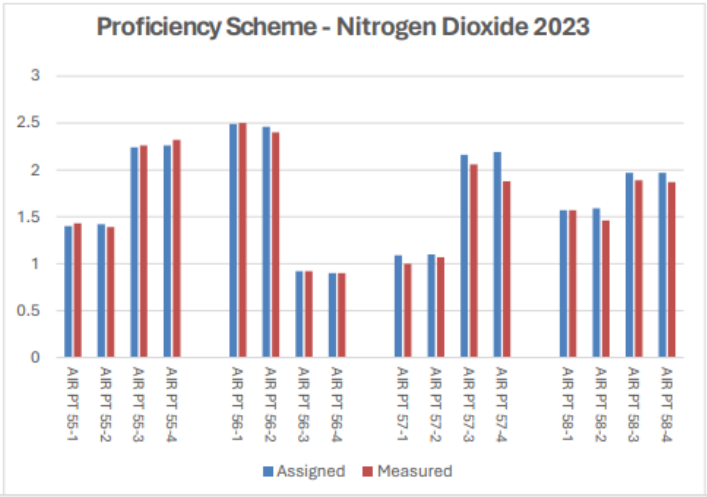
The councils use Gradko diffusion tubes 20% TEA in water. These are provided and analysed by Gradko International Ltd. (trading as Gradko Environmental) and a copy of their accreditation certificate has been provided to us. This was issued on 19.12.22 by UKAS, accreditation is to standard ISO/IEC 17025:2017.

Gradko proficiency scheme results for Nitrogen Dioxide for 2023 are shown in the table and charts below.

AIR PT Nitrogen Dioxide Proficiency Scheme Results 2023

Methods: GLM 7 – CARY 60 Spectrophotometer

AIR PT Proficiency Scheme - Nitrogen Dioxide 2023					
Date	Round	Assigned value	Procedure GLM 7		
			Measured concentration	z-Score	% Bias
Feb-23	AIR PT 55-1	1.4	1.43	0.29	2.1%
Feb-23	AIR PT 55-2	1.42	1.39	-0.28	-2.1%
Feb-23	AIR PT 55-3	2.24	2.26	0.11	0.9%
Feb-23	AIR PT 55-4	2.26	2.32	0.34	2.7%
Jun-23	AIR PT 56-1	2.49	2.5	0.05	0.4%
Jun-23	AIR PT 56-2	2.46	2.4	-0.33	-2.4%
Jun-23	AIR PT 56-3	0.92	0.92	0	0.0%
Jun-23	AIR PT 56-4	0.9	0.9	0	0.0%
Aug-23	AIR PT 57-1	1.09	1.00	-1.1	-8.3%
Aug-23	AIR PT 57-2	1.10	1.07	-0.36	-2.7%
Aug-23	AIR PT 57-3	2.16	2.06	-0.62	-4.6%
Aug-23	AIR PT 57-4	2.19	1.88	-1.89	-14.2%
Oct-23	AIR PT 58-1	1.57	1.57	0	0.0%
Oct-23	AIR PT 58-2	1.59	1.46	-1.09	-8.2%
Oct-23	AIR PT 58-3	1.97	1.89	-0.54	-4.1%
Oct-23	AIR PT 58-4	1.97	1.87	-0.68	-5.1%



Diffusion Tube Annualisation

All diffusion tube monitoring locations within South Hams/West Devon Council areas recorded data capture of 75% or more, therefore it was not required to annualise any monitoring data.

Bias Adjustment Factors

The diffusion tube data presented within the 2023 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.

South Hams/West Devon Councils have applied a national bias adjustment factor of 0.81 to the 2023 monitoring data. A summary of bias adjustment factors used by South Hams/West Devon Councils over the past five years is presented in Table C.1.

The Bias Adjustment Factor spreadsheet used for this report is copied below.

Table C.1 – Bias Adjustment Factor

Monitoring Year	Local or National	If National, Version of National Spreadsheet	Adjustment Factor
2023	National	06/24	0.81
2022	National	06/23	0.84
2021	National	09/22	0.84
2020	National	6/21	0.81
2019	National	03/20	0.93

National Diffusion Tube Bias Adjustment Factor Spreadsheet — Spreadsheet Version Number: 06/24

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 September 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 (Enter your selection, choose [All] from the drop-list)	Year[2] (Enter 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[4]	Bias Adjustment Factor (A) (Cm/Dm)
Gradko	20% TEA in Water	2023	R	Monmouthshire County Council	11	33	26	26.5%	G	**0.79**
Gradko	20% TEA in water	2023	R	Blackburn With Darwen Bc	12	23	16	43.8%	G	**0.70**
Gradko	20% TEA in water	2023	R	Lancaster City Council	10	35	27	28.6%	G	**0.78**
Gradko	20% TEA in water	2023	R	Eastleigh Borough Council	12	33	26	26.4%	G	**0.79**
Gradko	20% TEA in water	2023	R	Eastleigh Borough Council	12	22	19	12.5%	G	**0.89**
Gradko	20% TEA in water	2023	R	Plymouth City Council	12	35	26	38.3%	S	**0.72**
Gradko	20% TEA in water	2023	R	Plymouth City Council	10	39	31	24.2%	S	**0.80**
Gradko	20% TEA in water	2023	UC	Belfast City Council	10	26	19	38.3%	G	**0.72**
Gradko	20% TEA in water	2023	R	Cheshire West And Chester	12	35	32	10.0%	G	**0.91**
Gradko	20% TEA in water	2023	R	Cheshire West And Chester	10	32	28	14.6%	G	**0.87**
Gradko	20% TEA in water	2023	R	Dudley Mbc	12	27	23	17.1%	G	**0.85**
Gradko	20% TEA in water	2023	UB	Dudley Mbc	12	19	13	45.4%	G	**0.69**
Gradko	20% TEA in water	2023	R	Dudley Mbc	12	40	37	7.7%	G	**0.93**
Gradko	20% TEA in water	2023	R	Gateshead Council	12	23	20	17.7%	G	**0.85**
Gradko	20% TEA in water	2023	R	Gateshead Council	11	23	18	26.9%	G	**0.79**
Gradko	20% TEA in water	2023	R	Gateshead Council	12	27	22	20.7%	G	**0.83**
Gradko	20% TEA in water	2023	R	Gateshead Council	12	29	23	25.9%	G	**0.79**
Gradko	20% TEA in water	2023	R	Gateshead Council	12	30	33	-7.8%	G	**1.08**
Gradko	20% TEA in water	2023	KS	Marylebone Road intercomparison	11	45	38	20.3%	G	**0.83**
Gradko	20% TEA in water	2023	B	South Holland District Council	10	8	7	12.4%	G	**0.89**
Gradko	20% TEA in water	2023	R	Worcestershire	12	12	12	3.3%	G	**0.97**
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	R	Nottingham City Council	11	30	21	41.8%	G	**0.71**
Gradko	20% TEA in water	2023	R	Belfast City Council	12	46	35	29.3%	G	**0.77**
Gradko	20% TEA in water	2023	R	Belfast City Council	12	25	21	18.6%	G	**0.84**
Gradko	20% TEA in water	2023	R	Belfast City Council	12	37	28	30.2%	G	**0.77**
Gradko	20% TEA in water	2023		**Overall Factor[3] (27 studies)**				**Use**		**0.81**

[1] For Casella Stanger/Bureau Veritas (NOT Bureau Veritas Labs) use Gradko 50% TEA in Acetone.
For Casella Seal/GMSS/Casella CRE/Bureau Veritas Labs/Eurofins/ use Environmental Scientific Groups.
From 2011 for Environmental Scientific Groups use ESG Glasgow.
From 2011 for Harwell Scientific Services use ESG Didcot.
For 2017 for SOCOTEC use ESG Didcot, as name changed mid year.
For 2018 SOCOTEC entered as Didcot and Glasgow. Glasgow analysis lab moved to Didcot mid 2018.
For Staffordshire CC SS/Staffordshire County Analyst use Staffordshire Scientific Services.

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 Table B.1.

Table C.2 – Non-Automatic NO_2 Fall off With Distance Calculations (concentrations presented in µg/m^3)

There is no need to do this as all of our monitoring sites are either on the façade of a relevant exposure, are at a position which is representative of a relevant exposure and/or have concentrations of less than 36ug/m3 which negates the need to do this calculation according to the guidance at the start of this template document.

QA/QC of Automatic Monitoring

South Hams/West Devon Councils undertake no automatic monitoring

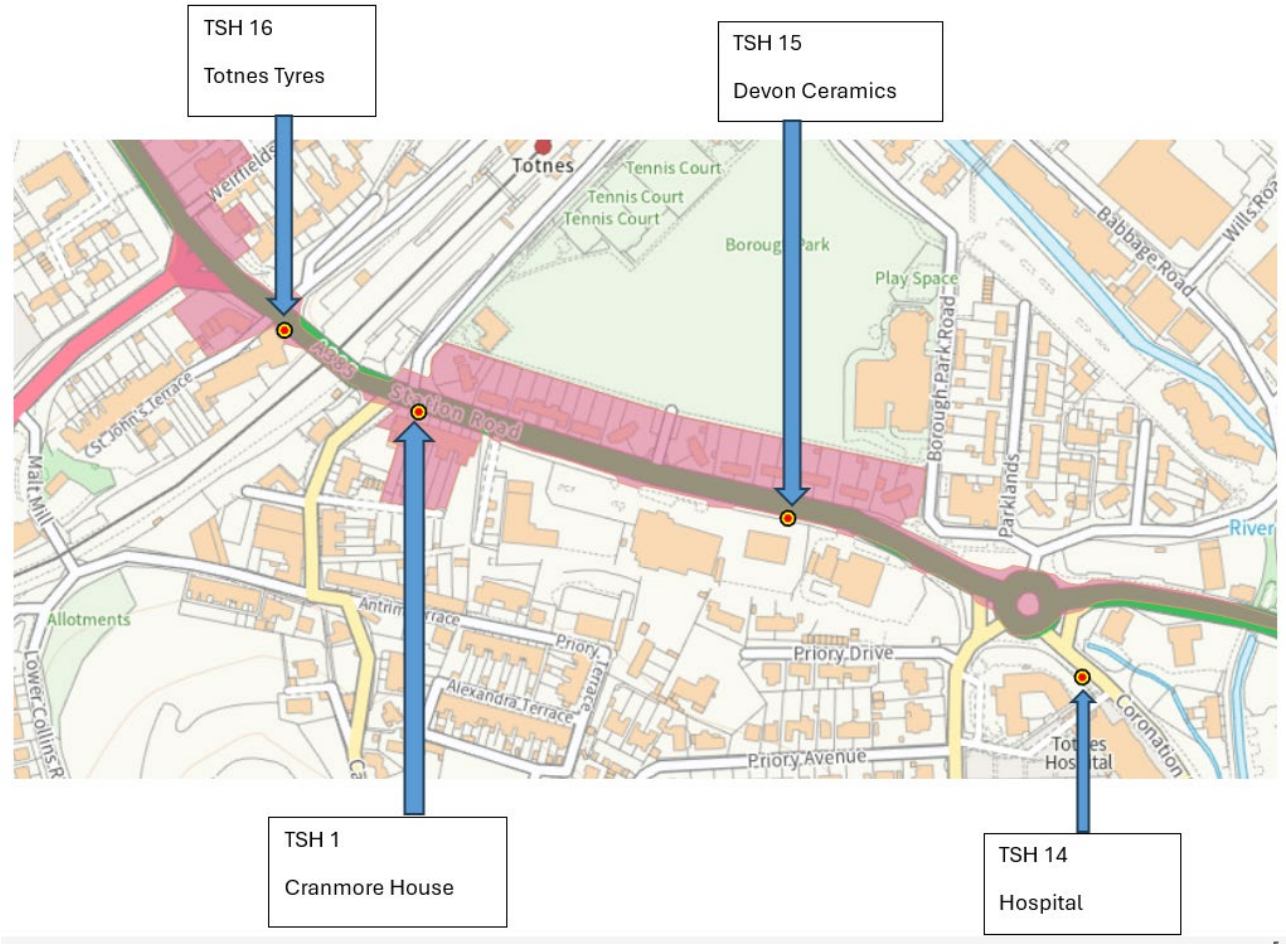
Appendix D: Map(s) of Monitoring Locations and AQMAs

Figure D.1 – Map of Non-Automatic Monitoring Site

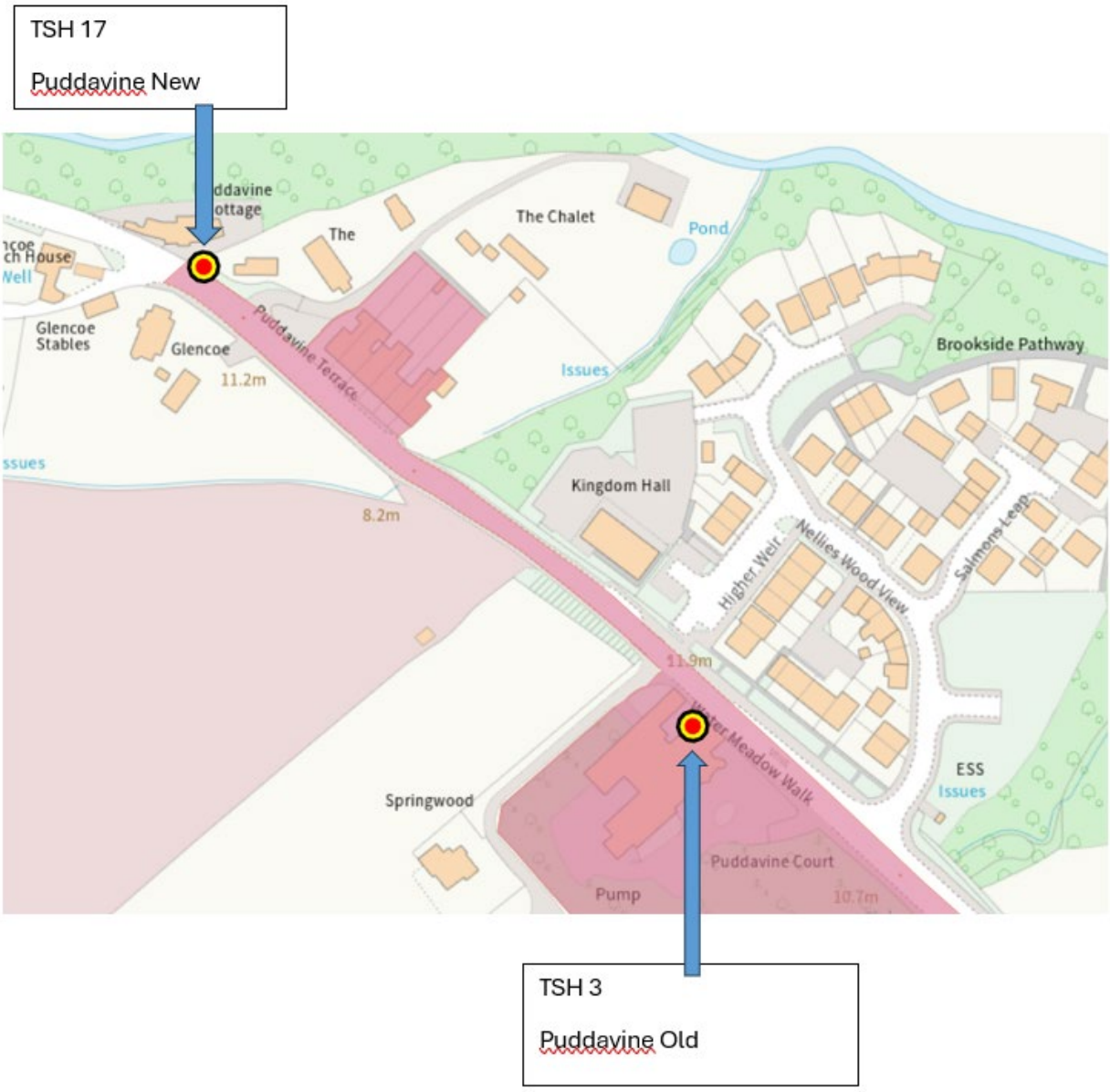
Dean Prior AQMA

Totnes AQMA

Station Road, Totnes diffusion tubes

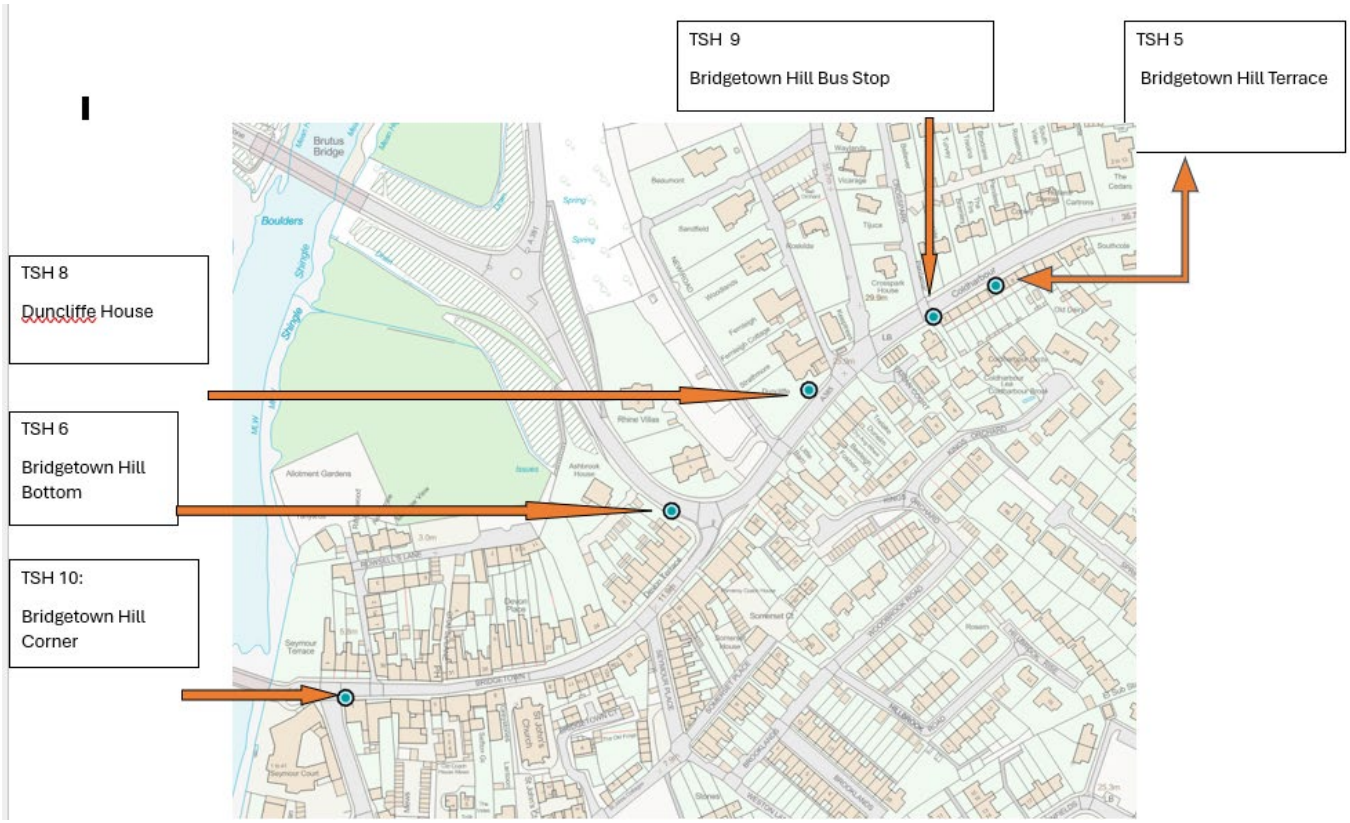


Puddavine, Totnes; diffusion tubes

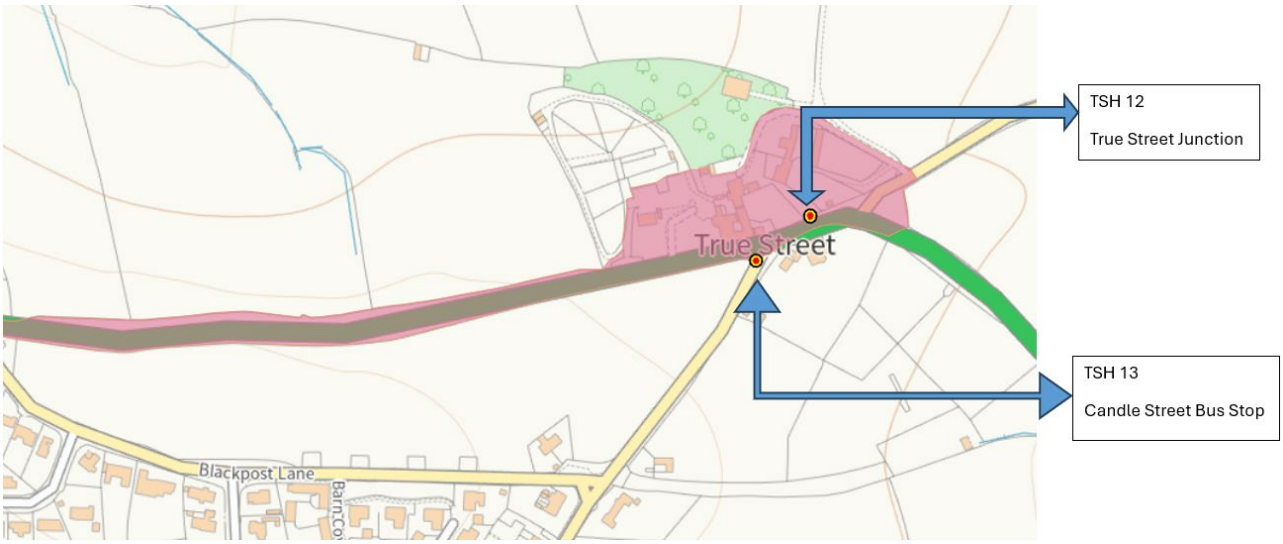


Lamb, Totnes; diffusion tube

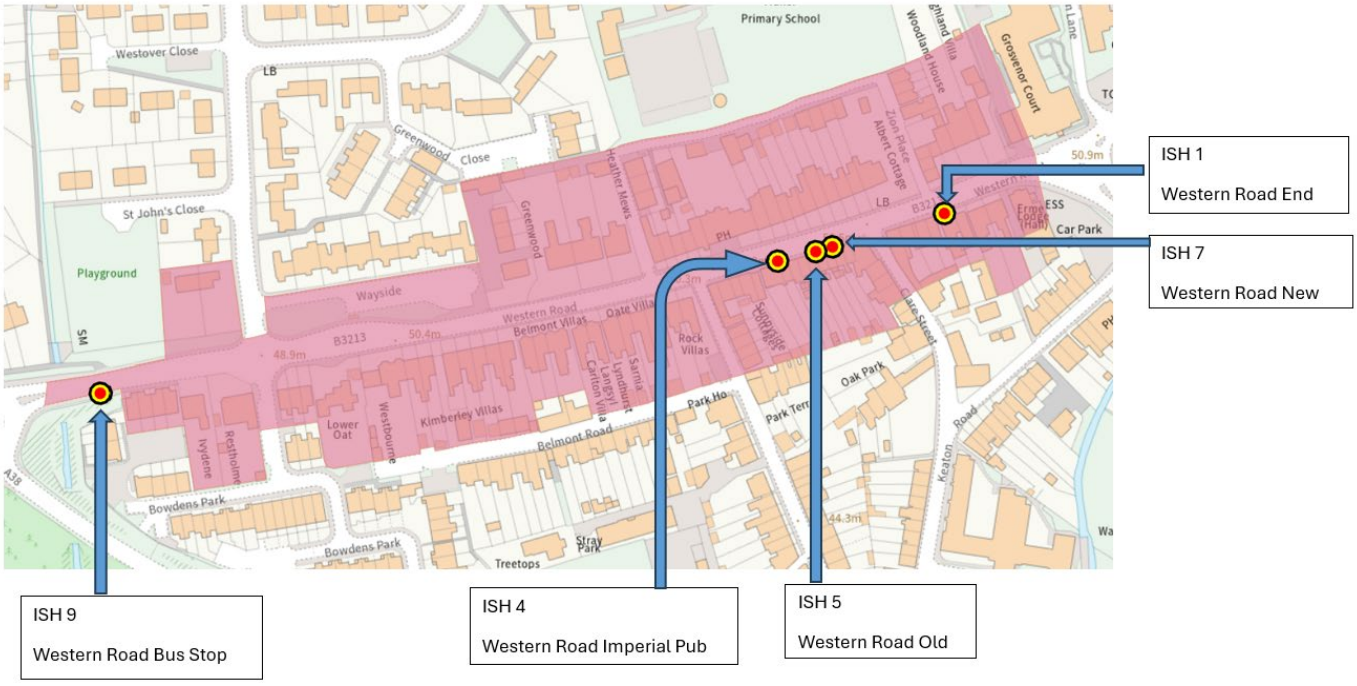
Bridgetown Hill, Totnes; diffusion tubes



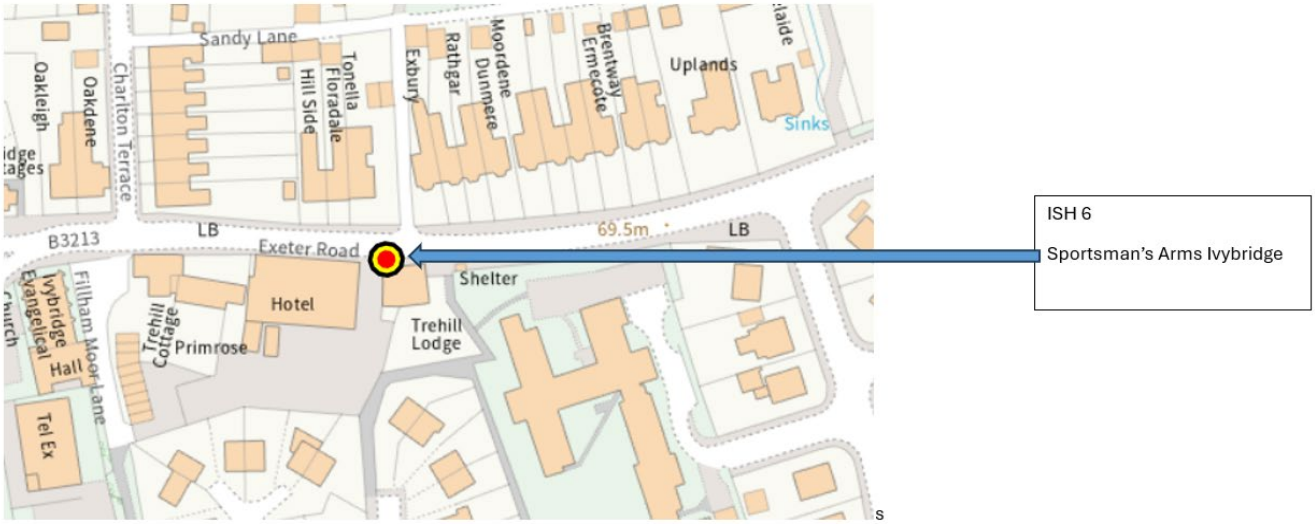
True Street, Totnes; diffusion tubes



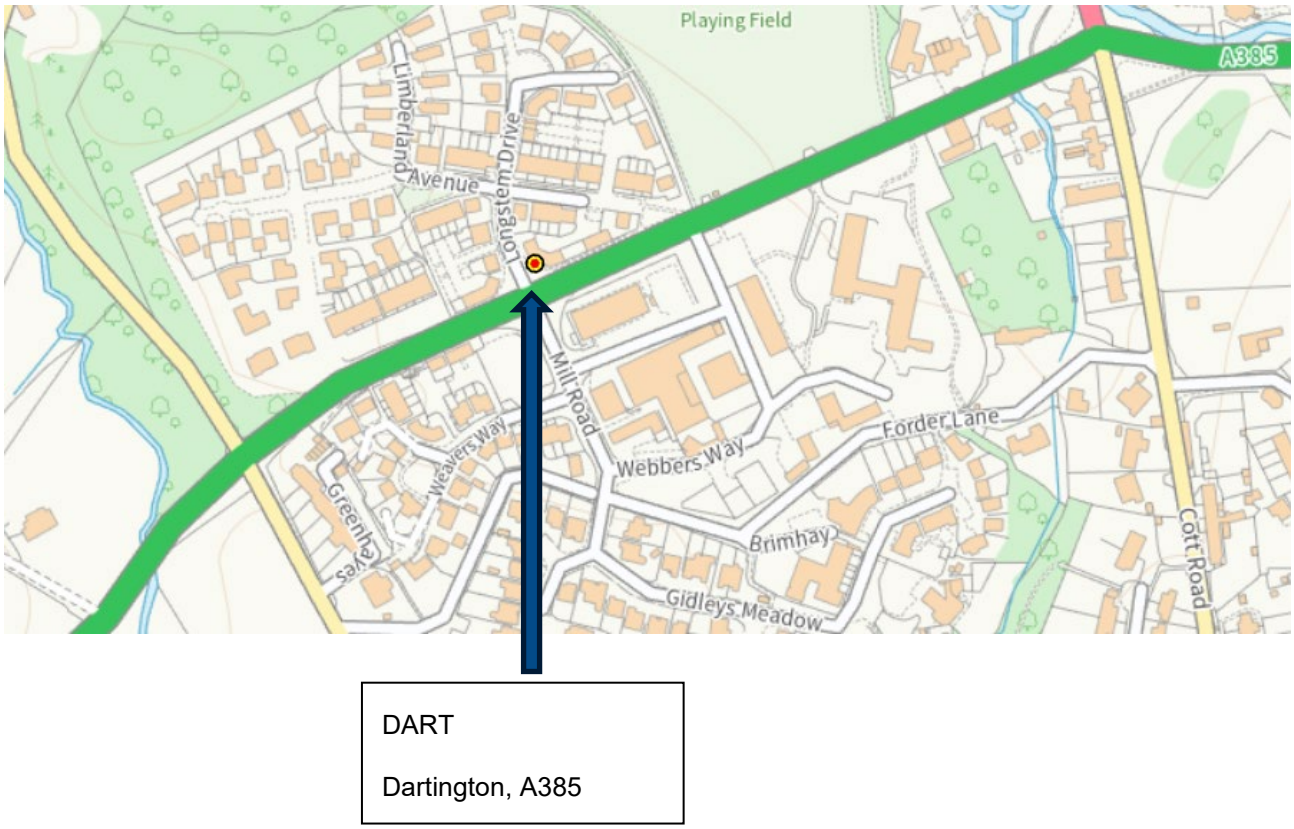
Ivybridge AQMA; diffusion tubes



Sportsmans Arms, Ivybridge; diffusion tube



Dartington: diffusion tube



Okehampton: diffusion tube

Plymouth Road Tavistock: diffusion tube

Callington Road Tavistock: diffusion tube

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).

APPENDIX F; Air Quality Assessment Requirements specified in Planning Validation Checklist for SHDC/WDBC

Air Quality Assessment

Information required and when required	Information Required/Guidance
Required for: Major dwellings Major heavy industry/ storage/ warehousing Large scale major offices, industry and retail in excess of 10,000m2 Within 1km of a sensitive area, for example an Air Quality Management Area or an Air Quality Area of Concern (AQMA/AQAC) Car parking more than 100 spaces Introduces new exposure to existing sources of air pollutants such as busy roads Will have a significant impact on traffic in terms of volume or change of vehicle composition Will include biomass boilers, combined heat and power plants, short Term Operating Reserve electricity generating systems Major road infrastructure changes Will introduce its own potentially polluting source, for example power plants, mineral sites, spraying processes or manufacturing Will involve significant dust emissions	There are AQMAs within South Hams; Ivybridge, Totnes and Dean Prior. There are none within West Devon. Proposals that impact upon air quality or are potential pollutants must be supported by an air quality assessment. This should indicate the change in air quality resulting from the proposed development and outlining appropriate mitigation measures as necessary. An Air Quality Assessment must be prepared by a suitably qualified expert, in accordance with the latest guidance from the Institute of Air Quality Management available. Development may result in the need for a Section 106 contribution to mitigate impacts on air quality and where the presence of a source of odour and/or dust that may affect amenity for future occupants of the development. Pre-application advice should be sought from the Environmental Health Team in order to determine the level of assessment required.

Appendix G; Traffic Counts Totnes, Okehampton, Tavistock (from DCC, 2024)

Town	Road	Easting	Northing	Annual Average Daily Traffic					
				2018	2019	2020	2021	2022	2023
Okehampton	B3260 Exeter Road	260200	095402	10,711	10,811	8,103	10,184	10,330	10,721
Tavistock	A386 North of Tavistock	249352	075750	6,388	6,596	4,890	5,564	6,039	6,176
	B3357 Moorshop Cross	251374	074592	2,345	2,301	1,743	2,267	2,281	2,324
Totnes	A381 South of Totnes	279749	059584	9,973	10,113	7,905	9,051	9,685	9,359
	A385 South of Dartington	279027	062061	13,543	14,078	11,045	12,527	13,419	13,191
	A385 Station Road	280177	060748	20,677	20,926	16,339	18,458	20,045	19,961
	A385 Brutus Bridge	280799	060539	16,593	16,900	13,504	15,325	16,372	16,140
	A385 East of Totnes	281933	060569	17,621	17,558	13,943	15,855	16,448	16,288

Please note the following:

- Flows are automatically enumerated using inductive loops, and as such are subject to minor discrepancies.

- In some cases (where highlighted in peach above), it was necessary to estimate flows for certain months, due to limited coverage (i.e. data only being recorded on a limited number of days). AADTs were then recalculated using these estimated monthly flows.
- Flows are for 24-hour periods, including weekdays, weekends and Public Holidays.

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.
- Chemical hazards and poisons report: Issue 28. June 2022. Published by UK Health Security Agency
- Air Quality Strategy – Framework for Local Authority Delivery. August 2023. Published by DCC 2020 Health Impacts of Climate Change, by Dr Katherine McHale, Public Health, Devon County Council
- DCC 2024; Devon County Council, Pers. Comm, 17.9.2024