Bath & North East Somerset Council

Improving People's Lives

2022 Air Quality Annual Status Report (ASR)

In fulfilment of Part IV of the Environment Act 1995

Local Air Quality Management

Date: June, 2022

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Report Reference Number	ASR0622
Date	June 2022

Executive Summary: Air Quality in Our Area

Air Quality in Bath & North East Somerset Council

Air pollution is associated with a number of adverse health impacts. Long-term exposure to air pollution (over years or lifetimes) reduces life expectancy, mainly due to cardiovascular and respiratory diseases and lung cancer. Short-term exposure (over hours or days) to elevated levels of air pollution can also cause a range of health impacts, including effects on lung function, exacerbation of asthma, increases in respiratory and cardiovascular hospital admissions and mortality. Additionally, air pollution particularly affects the most vulnerable in society: children, the elderly, and those with existing heart and lung conditions. There is also a strong correlation with health inequalities because areas with poor air quality are also often less affluent areas[1,2].

The mortality burden of air pollution within the UK is equivalent to 28,000 to 36,000 deaths at typical ages[3], with a total estimated healthcare cost to the NHS and social care of £157 million in 2017[4].

Bath and North East Somerset is a mainly rural district with Bath as the major urban area, together with the small towns of Keynsham, Radstock and Midsomer Norton. The main pollutant source within the area is road traffic. This is exacerbated in Bath with the city being set in a valley surrounded by hills which can trap the pollution within the city.

As the source of air pollution in Bath and North East Somerset is overwhelmingly from traffic, the approach to improving air pollution is by traffic and transport improvement measures. There is a strong collaboration between the four West of England authorities in transport terms through the West of England Combined Authority and the Travel West brand, which acknowledges that commuters don't think in terms of authority boundaries.

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

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

[3] Defra. Air quality appraisal: damage cost guidance, July 2021

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

In Bath, through traffic travels into the Air Quality Management Area (AQMA) on four main corridors:

- M4 junction 18 to A36 south;
- M4 junction 18 to A367;
- A4 west (Bristol) to A36 south; and
- A4 west to A4 east (with 7.5t weight limit).

The lack of alternative routes and a restricted number of River Avon crossing points means that the streets are often congested during peak periods, despite a very high proportion of employed Bath residents using sustainable modes for travel to work. The 2011 census indicated that only 25% of employed Bath residents working in the city, drive to work. This has been supported by substantial investments in cycling and walking infrastructure.

In Bath and North East Somerset, five Air Quality Management Areas (AQMAs) have been declared for nitrogen dioxide (NO_2), including the major road network within Bath, Keynsham High Street, a small section of the A4 in Saltford, and sections of the A37 in Temple Cloud and Farrington Gurney. Details of the AQMAs are given in Table 2.1 and maps of the AQMAs are in Appendix E. Details of the AQMAs can also be found on the Council's Air Quality Webpage.

There is no clear evidence of a safe level of exposure to particulate matter (PM) or NO_2 below which there is no risk of adverse health effects. This means that further reduction of PM or NO_2 concentrations below air quality standards is likely to bring additional health benefits[5].

Bath and North East Somerset Council had 180 NO_2 monitoring sites and 3 particulate matter monitoring sites in 2020. At the end of every year the Council reviews the information which it has collected throughout the year and applies a correction factor. Corrected data is then compared to the national air quality objectives which are detailed in Appendix E.

Headlines from the 2021 continuous analysers are:

- Bath and North East Somerset Council has monitors at 4 locations in 2021, including 4 NO_2, 2 PM_{10} and 1 $PM_{2.5}$ analysers, detailed in Table A.1, Appendix A.

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

- NO_2 – all monitoring results were below the annual average objective of 40 µg/m^3 and there were no exceedances of the 1-hour objective (18 exceedances allowed). NO_2 remained at similar levels compared to results in 2020 with the Guildhall increasing slightly and Chelsea House and Bath A4 Roadside decreasing slightly; this is similar to the levels across the National AURN network. Overall, the decrease from 2019 was 18% which is slightly lower than average decrease across the AURN which was 20%
- PM_{10} – all monitoring results were below the annual average objective of 40 µg/m^3 and there was 1 exceedance of the 24-hour mean objective (35 exceedances allowed) at both Bath A4 Roadside and Windsor Bridge. The results were similar to 2020.
- $PM_{2.5}$ – monitoring was below the annual average objective of 25 µg/m^3. The results were similar to 2020.
- There was a peak in both PM_{10} and $PM_{2.5}$ on Bonfire Night but it was short lived and did not cause an exceedance of the 24-hour objective.

A summary of NO_2 results from diffusion tubes across B&NES:

- Bath & North East Somerset has monitored NO_2 at 176 locations with 48 of these locations using triplicate diffusion tubes in 2021. A triplicate site is where 3 diffusion tubes are located at one site, this makes the data more robust as a fault with one tube (e.g. spider's nest in a tube, water ingress etc.) will not lead to loss of monitoring data for the month.
- A further 10 sites were monitored in Temple Cloud which were locations at the rear of properties and indoor to consider residents exposure to the higher concentrations on the roadside. A further 6 sites around the district were added at the end of 2021 which will be considered in 2022 when the data capture is greater.
- The average decrease across the long-term sites was 21% compared with 2019 monitoring data and 2% compared with 2020. The diffusion tubes were similar to the continuous sites with some decreasing and others increasing. The changes were influenced by the CAZ in Bath and roadworks.
- Bath – despite the traffic almost returning to pre-pandemic levels by the end of 2021 pollution concentrations remain lower than 2019, 3 sites remain above the annual average objective of 40 µg/m^3 across Bath in 2021 (DT020 – Wells Road, DT224 – Walcot Parade 2 and DT042 Dorchester Street). Dorchester Street reduces to below 40 µg/m^3 at façade.

- Keynsham –All sites were below the objective of 40 µg/m^3 in 2021.
- Saltford – All sites were below the objective of 40 µg/m^3 in 2021.
- Temple Cloud – Monitoring remains above the objective of 40 µg/m^3 at two locations with concentrations similar to 2020 at other locations. Further monitoring was carried out to compare with concentrations on the eastern side of A37 and in the gardens and indoors of properties directly affected by the higher pollution on the western side of the A37 (those closest to the road), these concentrations are all well below 40 µg/m^3.
- Farrington Gurney – All sites were below the objective of 40 µg/m^3 in 2021.
- Pensford – Monitoring in Pensford on the A37 has remained below the objective of 40 µg/m^3.
- Whitchurch – Monitoring in Whitchurch was below the objective of 40 µg/m^3.
- Batheaston/Bathampton – monitoring remains below 40 µg/m^3 at all locations.
- Midsomer Norton/Radstock/Westfield - monitoring remains below 40 µg/m^3 at these locations.
- 1-hour objective – All sites in Bath & North East Somerset are below 60 µg/m^3 – this suggests that the 1-hour NO_2 objective is unlikely to be exceeded.
- As there is a long-term trend showing the concentrations of NO_2 are remaining below 40 µg/m^3 in Keynsham and Saltford; the ASR will recommend revoking these AQMAs. This will require a formal consultation once the ASR is published and a legal revocation.

Summary of the monitoring using Zephyr analysers:

- Indicative monitoring was carried out at Gay St and Windsor Bridge using two Zephyrs as part of the Clean Air Plan (CAP).
- The monitor at Gay Street is linked with the traffic lights in Queen Square, where a high 15 minute concentration would trigger a change in the traffic light sequence to discourage traffic and lower pollution. The second monitor spent most of the time at Windsor Bridge co-located with the continuous analyser but was also co-located with the Gay Street monitor to verify the results. The Zephyr results compare very well with the nearby reference stations and with each other. The Zephyrs may have underestimated the PM_{10} and $PM_{2.5}$ peaks during the November bonfire celebrations.
- The monitor at Gay Street had annual average NO_2 concentrations of 29 µg/m^3, PM_{10} 13 µg/m^3 and $PM_{2.5}$ 9 µg/m^3.

- The monitor at Windsor Bridge had annual average NO_2 concentrations of 23 µg/m^3, PM_{10} 12 µg/m^3 and $PM_{2.5}$ 8 µg/m^3.
- The traffic light trigger value was not triggered during 2021, this concentration will be reviewed (level at which the traffic light timings are changed due to a high nitrogen dioxide reading, initial set at 180 µg/m^3 as a 15-minute average in April 2021 and reduced to 118 µg/m^3 in December 2021 following evaluation of monitoring during the year). The annual average concentration at the diffusion tube at this was 36 µg/m^3.

Covid-19 continued to influence on nitrogen dioxide concentrations in 2021, with national lockdowns keeping traffic at a reduced level early in the year. Traffic levels slowly returned to nearer normal levels over 2021.

Actions to Improve Air Quality

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

The 2019 Clean Air Strategy[6] sets out the case for action, with goals to reduce exposure to harmful pollutants. The Road to Zero[7] sets out the approach to reduce exhaust emissions from road transport through a number of mechanisms; this is extremely important given that the majority of Air Quality Management Areas (AQMAs) are designated due to elevated concentrations heavily influenced by transport emissions.

The core actions are:

Bath Clean Air Plan

- The Clean Air Zone commenced on 15th March 2021. Average 2021 annual NO_2 concentrations within the CAZ are 21% lower than in 2019; 22% lower in the area immediately surrounding the CAZ and 18% lower across with the wider authority area. The lowering of NO_2 concentrations took place in the context of

[6] Defra. Clean Air Strategy, 2019

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

traffic levels returning to close to pre-pandemic levels by the end of 2021. The percentage of chargeable non-compliant vehicles entering the zone each week reduced from 6% in the launch week to an average of 1% by the end of 2021.

- In total, the Council's Financial Assistance Scheme enabled 739 vehicles to be upgraded by the end Dec 2021 (21 coaches, 19 HGVs, 603 LGVs, and 96 taxis).
- Compliance percentages rose between launch week and the end of 2021 from 63% to 80% for Van/LGVs; 67% to 93% for Taxi/PHVs; 73% to 99% for buses (as a result of the CAZ bus retrofit scheme); 86% to 96% for smaller HGVs and 93% to 96% for larger HGVs.
- In addition to the bus retrofit scheme and financial assistance scheme, the government awarded Implementation Fund and Clean Air Fund helped in the delivery of the following;
    - Setting up of a team of travel advisors to deliver and promote sustainable travel and behavioural change and encourage the uptake of various CAZ-related mitigation schemes by impacted groups
    - Setting up of a team of business support officers to oversee the processing of CAZ penalty charge notices with the aim of engaging customers to promote behaviour change and signpost them to the mitigation schemes which are available.
    - Piloting a scheme for community anti-idling signage and development of a toolkit to support community activities.
    - Discounted residents parking permit charges for ultra-low emission vehicles continued throughout 2021.

Other measures

- The West of England Combined Authority (WECA) coordinated Future Transport Zone new technology trials included the launch of an e-scooter hire scheme on 29 October 2020 to help understand any issues and challenges of legalising e-scooter use on the region's roads. The scheme initially included 50 scooters in Bath, but given the success of the trial this has now doubled to 100. There have been 104,000 rides and 262,500km travelled by scooters. The trial will continue at least until November 2022 to see if it can replace more car journeys. The hop-on hop-off (also known as free floating) model, is a pay as you go (via Smartphone app) model where users can pick up an e-scooter from various locations across Bath.

- The Loan Bike Scheme is funded by The Council and operated by local bike shops. Intended to help people swap from their car to a bike, the scheme lets people trial bikes before purchasing. It allows users to borrow both standard push bikes as well as electric bikes, which are very popular due to Bath's terrain.
- The Local Cycling and Walking Infrastructure Plan (LCWIP) was consulted on in Feb 2020 and the adopted plan was published in January 2021. The Plan includes infrastructural improvements on existing roads including on-road cycle lanes linking potential new development.

Conclusions and Priorities

In 2021, monitoring at existing locations showed a decrease in concentrations at most locations compared with 2019. There were 5 exceedances of the annual average NO_2 objective, these were all located within existing AQMAs.

Bath and North East Somerset Council expects the following actions to be taken forward over the course of the next reporting year:

- Support for a delivery trial using E-cargo bikes (to avoid the use of non-compliant vehicles for deliveries) and a city centre cargo locker.
- Liveable neighbourhoods (LN) an initiative based on the Low Traffic Neighbourhoods scheme in London. The following programme milestones are planned for 2022:
    - Establish schemes for fast-tracking (Jan 2022)

  - Co-design of schemes (Mar-Jul 2022)
  - Preliminary design and consultation (Aug-Nov 2022)

- The Journey To Net Zero (JNZ) provides a delivery plan which identifies transport measures for carbon neutrality by 2030. It includes: micro-mobility schemes; Mobility as a Service platform (MaaS); P&R sites as multi-modal interchanges; bus stop improvements; and a road freight package (consolidation and restrictions). The plan is being amended in response to the consultation and business cases for the options will be developed and there is an ambition to consider a local target for NO_2 to build upon the progress which has already been achieved with the implementation of the CAZ in Bath.
- Temple Cloud Air Quality Action Plan sign-off and completion of two key measures of installation of Vehicle Activated Signs using height sensors to identify HGVs and show 'oncoming vehicles in the middle of the road' to vehicles at the opposite end of the AQMA, and the improvement of the footpath to the west of the A37. These measures are expected to help reduce exposure to pollution for pedestrians and reduce emissions on the A37 by reducing stop-starting, particularly of larger vehicles.
- Additional weight restriction enforcement in Bath to ensure that non-compliant vehicles attempting to avoid the CAZ do not breach weight limits. Enforcement will commence with a Trading Standards Officer tasked with leading on a project to investigate allegations of violations of weight limits in Bath in 2022.
- Further community resources in relation to the anti-idling toolkit will be developed and released in 2022.
- Completion date for the Cleveland Bridge repairs is currently unknown. However, feasibility work is ongoing in response to a 2021 Cabinet request for further investigation into the potential to restrict HGVs over 12 tonnes travelling across the bridge by varying the Bath Clean Air Zone Charging Order 2021.
- Commissioning of newly installed fast charge points in Bath and the completion of the installation of all eight new sites with rapid and fast chargers. One site in central Bath is due for commissioning in late Spring 2022.
- Development of an Air Quality Strategy that connects the broad air quality related measures more formerly as well as improving strategic connections with the West of England Combined Authority to ensure effective co-ordination and

collaboration with neighbouring authorities and Climate and Ecological Emergency related actions.

- Further development of the Council's air quality web pages to improve the display of live air quality data and coordination with smoke control and transport related initiatives such as Liveable Neighbourhoods.
- Develop a pilot project focused on Farrington Gurney and Temple Cloud relating to effective community engagement and behaviour change around air quality.

Bath & North East Somerset Council's priorities for the coming year are:

- Achieving success in relation to the Clean Air Zone in terms of compliance with nitrogen dioxide limits.
- Revocation of the Keynsham and Saltford Air Quality Management Areas following more than 3 years of measured concentrations below objective levels.
- Close cooperation with the Sustainability Team on the declared Climate Emergency and planned carbon neutrality by 2030 across the authority area.
- Adoption of the Temple Cloud and Farrington Gurney Air Quality Action Plans;
- Continued development of the air quality webpages as part of an authority wide upgrade to ensure user friendly air quality data visualisations.
- Development of an Air Quality Strategy.
- Engagement with stakeholders on detailed design of the Liveable Neighbourhoods initiative based on the Low Traffic Neighbourhoods scheme in London;

The principal challenges and barriers to implementation that Bath and North East Somerset Council anticipates facing are:

- Covid-19 and other national and international factors affecting economic vibrancy and supply chains that impact the ability of fleet operators to upgrade their vehicles.

Progress on the following measures has been slower than expected due to:

- Planning for the installation of electric vehicle charging infrastructure has continued for those funded by OLEV's Go Ultra Low West fund and the Ultra-Low Emission Taxi Fund, although no points had been installed due to Covid-19 infrastructure related delays.

- Sign off of the Temple Cloud Air Quality Action Plan due to a Cabinet Member request that measures should be in progress before sign off could be completed.

Local Engagement and How to get Involved

As the main source of air pollution in Bath and North East Somerset is from road sources, the Council wishes to encourage a greater amount of active travel across the district. The cycling infrastructure in Bath and North East Somerset is improving all the time and there are more opportunities to hire electric bikes being developed. There is also an ongoing e-Scooter trial.

We recommend that people visit the 'Travel West' website, as this provides live data on public transport (bus checker app) for journey planning as well as route information for walkers and cyclists; car clubs; traffic reports; electric vehicle charging infrastructure; and other information that simplifies travel choices. This site is administered by the West of England Combined Authority.

Further information on what the Council is doing to improve air quality in Bath and North East Somerset as part of the National Air Quality Plan and local engagement events can be found at Clean Air Zone website. For further information on current and historic data on air quality levels visit the Council's Air Quality website.

Local Responsibilities and Commitment

This ASR was prepared by the Environmental Monitoring Team of Bath & North East Somerset Council with the support and agreement of the following departments:

- Climate and Environmental Sustainability
- Planning & Conservation
- Planning Policy
- Traffic Management and Network
- Human Resources
- Active Travel
- Green Infrastructure & Nature Recovery
- Transport Development & Policy
- Parking Services

- Public Health & Prevention
- CAZ Project Team

This ASR has been approved by:

Director of Place Management (Chris Major); Head of Building Control and Public Protection (Phil Mansfield); Environmental Protection Team Manager (Aled Williams); Highways and Traffic Deputy Group Manager (Gary Peacock); CAZ Manager (Cathryn Brown).

This ASR has been signed off by the Director of Public Health, Rebecca Reynolds.

If you have any comments on this ASR please send them to Environmental Monitoring at:

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Tables

1 Local Air Quality Management

This report provides an overview of air quality in Bath & North East Somerset Council during 2021. It fulfils the requirements of Local Air Quality Management (LAQM) as set out in Part IV of the Environment Act (1995) and the relevant Policy and Technical Guidance documents.

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

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

2 Actions to Improve Air Quality

Air Quality Management Areas

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

A summary of AQMAs declared by Bath & North East Somerset Council can be found in Table 2.1. The table presents a description of the 5 AQMAs that are currently designated within Bath & North East Somerset Council (2 AQMAs are for both NO_2 annual mean and hourly mean objectives, 3 are only for NO_2 annual mean objective). Appendix D provides maps of AQMAs and also the air quality monitoring locations in relation to the AQMAs. The air quality objectives pertinent to the current AQMA designations are as follows:

- NO_2 annual mean;
- NO_2 hourly mean;

We propose to revoke The Keynsham High Street Air Quality Management Area 2010 and The Saltford Air Quality Management Area 2013 AQMAs (see Appendix G).

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 National Highways?	Level of Exceedance: Declaration	Level of Exceedance: Current Year	Name and Date of AQAP Publication	Web Link to AQAP
The Bath London Road Air Quality Management Area – 2013	Declared 1 February 2002, Amended v1 19 August 2005, Amended v2 30 July 2008, Amended v3 18 July 2013	NO_2 Annual Mean	The area covers the major road network in Bath, encompassing any buildings whose facades are within the area.	YES	London Road AURN 2001 - 57 µg/m^3	Walcot Parade 2 2021 – 43 µg/m^3	Bath Air Quality Action Plan (2011)	Visit the AQAP for Bath London Road AQMA
The Bath London Road Air Quality Management Area – 2013	Declared 18 July 2013	NO_2 1 Hour Mean	The area covers the major road network in Bath, encompassing any buildings whose facades are within the area.	YES	Lambridge - 2012 – 62 µg/m^3	Walcot Parade 2 2021 – 43 µg/m^3	Bath Air Quality Action Plan (2011)	Visit the AQAP for Bath London Road AQMA
The Keynsham High Street Air Quality Management Area 2010	Declared 31 July 2010	NO_2 Annual Mean	An area covers the town centre and extends along the High Street and Charlton Road encompassing the facades of the buildings within the area.	NO	Keynsham - High Street 2009 – 45 µg/m^3 at façade	Keynsham - High Street 2021 – 28 µg/m^3	Air Quality Action Plans for Keynsham and Saltford (2016)	Visit the AQAP for Keynsham AQMA
The Saltford Air Quality Management Area 2013	Declared 4 July 2013	NO_2 Annual Mean	An area which covers the Bath Road, Saltford, encompassing any buildings whose facades are within the area, extending from its junction with Beech Road until 150m south of the Glen	NO	Saltford - The Crown 2012 - 47 µg/m^3	Saltford - The Crown 2021 - 23 µg/m^3	Air Quality Action Plans for Keynsham and Saltford (2016)	Visit the AQAP for Saltford AQMA

AQMA Name	Date of Declaration	Pollutants and Air Quality Objectives	One Line Description	Is air quality in the AQMA influenced by roads controlled by National Highways?	Level of Exceedance: Declaration	Level of Exceedance: Current Year	Name and Date of AQAP Publication	Web Link to AQAP
Temple Cloud Air Quality Management Area 2018	Declared 20 August 2018	NO_2 Annual Mean	The area starts approximately 245 metres north of the A37/Temple Inn Lane junction and runs along the A37 to approximately 150 metres south of the A37/Eastcourt Road junction.	NO	Temple Cloud 1 2017 – 67 µg/m^3	Temple Cloud 1 2021 – 44 µg/m^3	Consultation Draft - Farrington Gurney and Temple Cloud Air Quality Action Plan (Feb 2020)	Visit the draft AQAP for Temple Cloud AQMA
Temple Cloud Air Quality Management Area 2018	Declared 20 August 2018	NO_2 1 Hour Mean	The area starts approximately 245 metres north of the A37/Temple Inn Lane junction and runs along the A37 to approximately 150 metres south of the A37/Eastcourt Road junction.	NO	Temple Cloud 1 2017 – 67 µg/m^3	Temple Cloud 1 2021 – 44 µg/m^3	Consultation Draft - Farrington Gurney and Temple Cloud Air Quality Action Plan (Feb 2020)	Visit the draft AQAP for Temple Cloud AQMA
Farrington Gurney Air Quality Management Area 2018	Declared 20 August 2018	NO_2 Annual Mean	The area starts approximately 165 metres north of the A37/Church Lane junction and runs south along the A37 to the Bath and North East Somerset Council boundary, and additionally extends approximately 100 metres east along the A362 from the A37/A362 junction.	NO	Farrington Gurney 2 2017 - 52 µg/m^3	Farrington Gurney 2 2021 - 32 µg/m^3	Consultation Draft - Farrington Gurney and Temple Cloud Air Quality Action Plan (Feb 2020)	Visit the draft AQAP for Farrington Gurney AQMA

☒ **Bath & North East Somerset Council confirm the information on UK-Air regarding their AQMA(s) is up to date.**

☒ **Bath & North East Somerset Council confirm that all current AQAPs have been submitted to Defra.**

Progress and Impact of Measures to address Air Quality in Bath & North East Somerset Council

Defra's appraisal of last year's ASR concluded; (the Council's responses are denoted in blue):

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. The Council have provided a thorough report which contains the required content and more.
2. There have been understandable delays to the AQAPs for the Temple Cloud and Farrington Gurney AQMAs, and the assessment of the Keynsham and Saltford AQMAs. The Council should try to prioritise these in 2021 though, given these are carried over from previous reports.

   The AQMAs in Keynsham and Saltford have been reviewed in 2021 see Appendix G. The AQAPs for Temple Cloud and Farrington Gurney have been adopted in Summer 2022.
3. If the assessment of the Keynsham and Saltford AQMAs leads to their revocation, the AQAPs for these AQMAs will not need to be updated. However, if they are retained, these AQAPs should be updated within the next reporting year given they were published five years ago.

   The AQMAs in Keynsham and Saltford have been recommended for revocation.
4. For ease of interpretation and greater accuracy, it would be helpful if the decimal place was retained in the diffusion tube results from Table B.1 to Table A.4.

   Noted. The final continuous data annual average concentrations are only provided to whole numbers by both AQDM and the AURN on the UK-Air website. As the diffusion tube results are less accurate is seems wrong to quote these to 1 decimal place when the continuous analysers are not provided to this accuracy. Historically we have only provided the diffusion tube results to 1 d.p. if they are at 40 µg/m^3, we are going to continue to do this in the Table A.4.
5. Whilst triplicate data can be more robust in the event of data loss, the Council may wish to consider reducing the number of triplicate sites to save on the cost of the survey.

The majority of the triplicate sites have been installed as part of the monitoring for the Clean Air Plan. The guidance from JAQU for this was to use triplicate sites. As the data is being submitted as part of the Clean Air Plan the triplicate sites have been maintained.

6. It is encouraging to see the Council respond to comments raised during the previous appraisal which should be repeated in future reporting.
7. The monitoring location mapping clearly demonstrates the Council's monitoring network and AQMA boundaries.

Bath & North East Somerset Council has taken forward a number of direct measures during the current reporting year of 2021 in pursuit of improving local air quality. Details of all measures completed, in progress or planned are set out in Table 2.2. 57 measures are included within Table 2.2, with the type of measure and the progress Bath & North East Somerset Council have made during the reporting year of 2021 presented. Where there have been, or continue to be, barriers restricting the implementation of the measure, these are also presented within Table 2.2.

More detail on these measures can be found in their respective Action Plans; Clean Air Plan: Full Business Case (2020), Bath AQAP (2011) and Keynsham and Saltford AQAP (2016). Details of the proposed actions for Temple Cloud and Farrington Gurney are in the Draft AQAP for Temple Cloud and Farrington Gurney (2020). A final plan will be published in 2022.

Key completed measures are:

Bath Clean Air Plan

- The Clean Air Zone commenced on 15th March 2021. Average 2021 annual nitrogen dioxide (NO_2) concentrations within the CAZ are 21% lower than in 2019; 22% lower in the area immediately surrounding the CAZ and 18% lower across with the wider authority area. The lowering of NO_2 concentrations took place in the context of traffic levels returning to close to pre-pandemic levels at around 1% to 5% below the pre pandemic baseline by August 2021.

- The percentage of chargeable non-compliant vehicles (as a percentage of all traffic) entering the zone each week reduced from 6% in the launch week to an average of 1% by the end of 2021.

- In total, the Council's Financial Assistance Scheme (introduced as part of the Clean Air Fund) enabled 739 vehicles to be upgraded by the end Dec 2021 (21 coaches, 19 HGVs, 603 LGVs, and 96 taxis).

- Compliance percentages rose between launch week and the end of 2021 from 63% to 80% for Van/LGVs; 67% to 93% for Taxi/PHVs; 73% to 99% for buses (as a result of the CAZ bus retrofit scheme); 86% to 96% for smaller HGVs and 93% to 96% for larger HGVs.
- In addition to the bus retrofit scheme and financial assistance scheme, the government awarded Implementation Fund and Clean Air Fund helped in the delivery of the following;
    - Setting up of a team of travel advisors to deliver and promote sustainable travel and behavioural change and encourage the uptake of various CAZ-related mitigation schemes by impacted groups
    - Setting up of a team of business support officers to oversee the processing of CAZ penalty charge notices with the aim of engaging customers to promote behaviour change and signpost them to the mitigation schemes which are available.
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    - Discounted residents parking permit charges for ultra-low emission vehicles continued throughout 2021.

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- The West of England Combined Authority (WECA) coordinated Future Transport Zone new technology trials included the launch of an e-scooter hire scheme on 29 October 2020 to help understand any issues and challenges of legalising e-scooter use on the region's roads. The scheme initially included 50 scooters Bath, but given the success of the trial this has now doubled to 100. There have been 104,000 rides and 262,500km travelled by scooters. The trial will continue at least until November 2022 to see if it can replace more car journeys. The hop-on hop-off (also known as free floating) model, is a pay as you go (via Smartphone app) model where users can pick up an e-scooter from various locations across Bath.

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- The Local Cycling and Walking Infrastructure Plan (LCWIP) was consulted on in Feb 2020 and the adopted plan was published in January 2021. The Plan includes infrastructural improvements on existing roads including on-road cycle lanes linking potential new development.

Bath & North East Somerset Council expects the following measures to be completed over the course of the next reporting year:

- Support for a delivery trial using E-cargo bikes (to avoid the use of non-compliant vehicles for deliveries) and a city centre cargo locker.
- Liveable neighbourhoods (LN) are an important part of our plan to tackle the climate and ecological emergency and improve health across the area. A consultation that ran between November 2021 and January 2022 received more than 1,600 responses to its recent engagement on 15 priority Liveable Neighbourhood schemes. The response was generally positive, with 51% supporting Liveable Neighbourhoods schemes, 36% expressing neutral views, and 13% against their implementation. £2.2m has been allocated to develop and deliver schemes and design work has begun for 4 trial areas and 6 areas selected for development of residents parking zones. The LNs will include modal filters; expansion of residents' car parking; school streets; strategic corridor improvements encourage walking, cycling and public transport use and investment in on-street electric vehicle charging. The following programme milestones are planned for 2022:
    - Establish schemes for fast-tracking (Jan 2022)
    - Co-design of schemes (Mar-Jul 2022)
    - Preliminary design and consultation (Aug-Nov 2022)

    Liveable Neighbourhoods are expected to enable more active travel and a resulting reduction of emissions from shorter trips.
- The Bath Transport Delivery Action Plan was renamed the Journey To Net Zero (JNZ) in 2021 following the 1st consultation ending March 2021, the JNZ was

consulted on in late 2021 and provides a delivery plan which identifies transport measures for carbon neutrality by 2030. It includes: micro-mobility schemes; Mobility as a Service platform (MaaS); P&R sites as multi-modal interchanges; bus stop improvements; and a road freight package (consolidation and restrictions). The plan is being amended in response to the consultation and business cases for the options will be developed and there is an ambition to consider a local target for NO_2 to build upon the progress which has already been achieved with the implementation of the CAZ in Bath.

- Temple Cloud Air Quality Action Plan sign-off and completion of two key measures of installation of Vehicle Activated Signs using height sensors to identify HGVs and show 'oncoming vehicles in the middle of the road' to vehicles at the opposite end of the AQMA, and the improvement of the footpath to the west of the A37. These measures are expected to help reduce exposure to pollution for pedestrians and reduce emissions on the A37 by reducing stop-starting, particularly of larger vehicles.
- Additional weight restriction enforcement in Bath to ensure that non-compliant vehicles attempting to avoid the CAZ do not breach weight limits. Enforcement will commence with a Trading Standards Officer tasked with leading on a project to investigate allegations of violations of weight limits in Bath in 2022. Although the displacement reporting website is planned for launch in 2022, there's some delay expected due to understanding and adjusting to the impact of the new moving traffic offences legislation contained within Part 6 of the Traffic Management Act 2004.
- Further community resources in relation to the anti-idling toolkit will be developed and released in 2022. This is expected to compliment Liveable Neighbourhood work and reduce emissions in neighbourhood centres.
- Completion date for the Cleveland Bridge repairs is currently unknown. However, feasibility work is ongoing in response to a 2021 Cabinet request for further investigation into the potential to restrict HGVs over 12 tonnes travelling across the bridge by varying the Bath Clean Air Zone Charging Order 2021.
- Commissioning of newly installed fast charge points in Bath and the completion of the installation of all eight new sites with rapid and fast chargers. One site in central Bath is due for commissioning in late Spring 2022. Some delays were caused by Covid-19 supply chain issues. This measure will support the growing EV charge point demand coming from greater uptake of electric vehicles.

- Development of an Air Quality Strategy that connects the broad air quality related measures more formerly as well as improving strategic connections with the West of England Combined Authority to ensure effective co-ordination and collaboration with neighbouring authorities and Climate and Ecological Emergency related actions.
- Further development of the Council's air quality web pages to improve the display of live air quality data and coordination with smoke control and transport related initiatives such as Liveable Neighbourhoods.
- Develop a pilot project focused on Farrington Gurney and Temple Cloud to capturing learning relating to effective community engagement and behaviour change around air quality.

Bath & North East Somerset Council's priorities for the coming year are:

- Achieving success in relation to the Clean Air Zone in terms of compliance with nitrogen dioxide limits.
- Recommencement of Queen Square and Gay Street Urban Traffic Management Control scheme following full reopening of Cleveland Bridge, due to less traffic demand on Queen Square as a temporary diversion route.
- Revocation of the Keynsham and Saltford Air Quality Management Areas following more than 3 years of measured concentrations below objective levels.
- Close cooperation with the Sustainability Team on the declared Climate Emergency and planned carbon neutrality by 2030 across the authority area, particularly in relation to development of the Air Quality Strategy.
- Adoption of the Temple Cloud and Farrington Gurney Air Quality Action Plans.
- Continued development of the air quality webpages as part of an authority wide upgrade to ensure user friendly air quality data visualisations.
- Increase in mobile automatic air quality monitoring to respond to monitoring requests following purchase of Zephyr electro-chemical automatic monitor.
- Development of an Air Quality Strategy.

Bath & North East Somerset Council worked to implement these measures in partnership with the following stakeholders during 2021:

- Joint Air Quality Unit;

- West of England Combined Authority;
- Bus operators;
- E-cargo bike operators; and
- Local communities.

The principal challenges and barriers to implementation that Bath & North East Somerset Council anticipates facing are:

- Covid-19 and other national and international factors affecting economic vibrancy and supply chains that impact the ability of fleet operators to upgrade their vehicles.

Progress on the following measures has been slower than expected due to:

- Planning for the installation of electric vehicle charging infrastructure has continued for those funded by OLEV's Go Ultra Low West fund and the Ultra-Low Emission Taxi Fund, although no points had been installed due to Covid-19 infrastructure related delays.
- Sign off of the Temple Cloud Air Quality Action Plan due to a Cabinet Member request that measures should be in progress before sign off could be completed.

Bath & North East Somerset Council anticipates that the measures stated above and in Table 2.2 will achieve compliance in Bath, Keynsham, Saltford and Farrington Gurney.

Whilst the measures stated above and in Table 2.2 will help to contribute towards compliance, Bath & North East Somerset Council anticipates that further additional measures not yet prescribed will be required in subsequent years to achieve compliance and enable the revocation of Temple Cloud AQMA.

Temple Cloud / Farrington Gurney

In early 2020 Bath and North East Somerset Council's Environmental Monitoring team consulted on a draft Farrington Gurney and Temple Cloud AQAP and a final draft is being prepared for sign off.

The following measures are included in the final Air Quality Action Plans:

Farrington Gurney:-

- FG 1-Advice and information for residents
- FG 2-School travel plan (Modeshift STARS)
- FG 3-Clean Air Schools Toolkit
- FG 4-Influence planning decisions for any development within 200 metres of an AQMA boundary
- FG 5-Targeted information campaign for the most vulnerable groups
- FG 6-If necessary: Construction of an additional lane on the A37 southbound approach to the A37/A362 signals utilising the existing verge and possibly the existing footway or hatchway if required.
- FG 7-Tree planting along the right-hand side of the A362 approaching the A37.

Temple Cloud:-

- TC1 - Determine Feasibility of a vehicle width restriction through Temple Cloud
- TC2 - Undertake significant 'cutting back' of the high hedge/vegetation on the eastern side of the narrow section to allow more effective use of the existing carriageway by HGVs.
- TC 3 - New public footpath link
- TC 4 - Advice and information for residents
- TC 5 - School travel plan (Modeshift STARS)
- TC 6 - Clean Air Schools Toolkit
- TC 7 - Influence planning decisions for any development within 200 metres of an AQMA boundary
- TC 8 - Targeted information campaign for the most vulnerable groups
- TC9 - Investigation of 'pollution cleaning technology'
- TC10 - The use of Vehicle Activated Signs (VAS) to help smooth traffic flows and reduce emissions

In Farrington Gurney, all sites were below the objective of 40 µg/m^3 in 2021. In Temple Cloud, measured concentrations remain above the objective of 40 µg/m^3 at two locations with concentrations similar to 2020 at other locations.

Although there has been a delay in adopting the final action plan some actions have been progressed in 2021 and before including; TC2 undertaking hedge and vegetation cutback was brought forward for worries of highway safety, the vegetation was “pushing” the vehicles to the middle of the road causing some vehicles to climb the pavement on the westside. This measure had a second and final intervention in February 2021 cutting back all the overhanging vegetation to the line of the road, to reduce the tunnel effect of that stretch of road and help with the dispersion of the pollutants. Speed rumble strips were also introduced to help warn drivers and reduce speed before the narrow stretch of road.

The measures in Table 2.2 below include those that were part of the 2011-2016 Air Quality Action Plan for Bath. A replacement Action Plan was drafted in 2017 that was subsequently postponed due to a Ministerial Direction served on the Council to develop a Clean Air Plan in 2017. The Action Plan is not being renewed until after the Clean Air Plan has been substantially implemented. As such, Table 2.2 includes some older completed measures and some new and forthcoming measures relating to the Clean Air Plan and at the time of writing, the measures influenced or implemented in response to the Covid-19 virus crisis. Completed or aborted measures are written in black italics.

There are four sets of measure numbers, one for each Air Quality Action Plan or Clean Air Plan (CAP).

Table 2.2 – Progress on Measures to Improve Air Quality

Measure No.	Measure	Category	Classification	Year Measure Introduced	Estimated / Actual Completion Year	Organisations Involved	Funding Source	Defra AQ Grant Funding	Funding Status	Estimated Cost of Measure	Measure Status	Reduction in Pollutant / Emission from Measure	Key Performance Indicator	Progress to Date	Comments / Barriers to Implementation
BATH CAP 1	Reduced residents parking permit charges for ULEVs	Promoting Low Emission Transport	Other	Apr-21	2022	Bath and North East Somerset Council	JAQU CAZ Early Measures Fund.	No	Fully funded	£50-£100k	Implementation	Not known	Number of permits for ULEVS as %age of total	Low uptake with only 24 ULEV permits issued. Implemented within all on street parking TROs across B&NES, with new CO2 emissions based permit charges harmonised in all zones, plus surcharge for diesel fuel vehicles. Up to 4 vehicles may be preregistered on a permit at time of purchase with charge based on most polluting vehicle and highest charge paid. Bands align to DVLA VED - DVLA bulk data set is the source data for charges.	EXPECTED MEDIUM EFFECTIVENESS. Uptake and affordability of ULEVs.
BATH CAP 2	Charging Clean Air Zone	Traffic Management	Emission based road user charging	2021	2021	Bath and North East Somerset Council	Joint Air Quality Unit CAZ Implementation Fund	No	Fully funded	£1m-£10m	Planning (Implemented 2021)	4 µg/m^3 (at key locations)	Measured annual average concentrations of NO_2. Number of monitoring sites (PCM and LAQM with façade adjustments) measuring above 40µg/m3.	Came into operation 15th March 2021	EXPECTED HIGH EFFECTIVENESS. Start date was delayed due to Covid-19.
BATH CAP 3	Retrofitting buses	Vehicle Fleet Efficiency	Vehicle Retrofitting programmes	2020	2020 installation	Bath and North East Somerset Council; bus operators and Energy Saving Trust	Joint Air Quality Unit CAZ Clean Air Fund	No	Fully funded	£1m-£10m	Implementation	Tbc	Overall NO_2 emissions reduction	84 of 87 vehicles retrofitted in 2021.	EXPECTED HIGH EFFECTIVENESS.
BATH CAP 4	Financial Assistance Scheme	Vehicle Fleet Efficiency	Other	2020	2021	Bath and North East Somerset Council	Joint Air Quality Unit CAZ Clean Air Fund	No	Partially funded.	£1m-£10m	Implementation	Tbc	Measured annual average concentrations of NO_2. Number of vehicles registered for the scheme. Number of vehicles fitted with telematics. Number of vehicles upgraded.	739 vehicles upgraded by end Dec 2021 (21 coaches, 19 HGV, 603 LGV, 96 taxi).	EXPECTED HIGH EFFECTIVENESS. Economic conditions and business solvency. Private vehicle and campervans difficult to replace and often low number of journeys in zone to justify change.
BATH CAP 5	E-cargo bike distribution measure. Previously known as: 'Support and facilities for alternative delivery and servicing options for businesses'	Freight and Delivery Management	Delivery and Service Plans	2021	2023	Bath and North East Somerset Council	Joint Air Quality Unit CAZ Clean Air Fund	No	Fully funded.	£500k-£1m	Planning	Tbc	Number of deliveries made by e-cargo bikes – new journeys and those formerly by other couriers or methods.	Support for a delivery trial using E-cargo bikes (to avoid the use of non-compliant vehicles for deliveries), and a city centre cargo locker	EXPECTED MEDIUM EFFECTIVENESS. Delivery and Service Plans aborted and replaced with only/last mile.

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BATH CAP 6	Sustainable Travel and Transport Team	Promoting Low Emission Transport / Promoting Travel Alternatives	Other	2020	2025	Bath and North East Somerset Council	Joint Air Quality Unit CAZ Clean Air Fund	No	Fully funded.	£500k-£1m	Implementation	Tbc	Number of vehicle operators advised. KPI for Bath CAP 4	Approximately 2500 people spoken to at time of writing – approximately 750 in 2020.	EXPECTED HIGH EFFECTIVENESS. Difficult to measure impact. Not as important as Bath CAP 4.
BATH CAP 7	Weight restriction enforcement	Traffic Management	Other	2021	2025	Bath and North East Somerset Council	Joint Air Quality Unit CAZ Clean Air Fund	No	Fully funded.	£10-£50k	Planning	Tbc	Number of vehicles exceeding weight limit before and after.	Trading Standards Officer tasked with leading on a project to alleged violations of weight limits in Bath in 2022. Displacement reporting website launched. Some delay due to emerging moving traffic offences legislation.	EXPECTED LOW EFFECTIVENESS. Signage and ANPR cameras.
BATH CAP 8	Anti-idling education and enforcement.	Traffic Management	Anti-idling enforcement.	2021	2025	Bath and North East Somerset Council	Joint Air Quality Unit CAZ Clean Air Fund	No	Fully funded.	£10-£50k	Planning	Not known	Number of signs erected.	Pilot scheme for community signage and exploring toolkit with community materials. Erected in partnership with 2 communities (St Marks Road and Holloway) and at Odd Down P&R.	EXPECTED LOW EFFECTIVENESS. Difficult to measure impact. Engine and vehicle technology increasingly automatically switches engines off. Practically difficult to enforce and an educative approach is favoured
BATH CAP 9	Queen Square Urban Traffic Management Control	Traffic Management	UTC	2021	-	Bath and North East Somerset Council	Joint Air Quality Unit CAZ Clean Air Fund	No	Fully funded.	£500k - £1m	Planning	4µg/m^3	Gay St NO_2	2021 commencement. Installed and operational.	EXPECTED HIGH EFFECTIVENESS. Part and full closure of Cleveland Bridge has impacted on the operation.
BATH 1	*Bath Transport Package*	*Traffic Management*	*Other*	*2015*	*Substantially Complete.*	*Bath and North East Somerset Council*	*DfT*	*No*	*Partially funded.*	*£1m - £10m*	*Completed*	*Not known*	*Park & Ride (P&R) bus patronage and vehicles using the P&R*	*890 additional P&R spaces between 2012 and 2015. Patronage at the 3 P&R sites overall grew by 16% between 2008/09-2016/17. 4 EV charging sockets installed at each P&R site. Bus infrastructure works included: Raised pavements at 375 stops to ease access on and off buses; 169 Real Time Passenger Information displays; Replacement of existing shelters and the addition of new bus shelters. There are live VMS, 7 on the edge of the city and 6 in the City Centre for parking info and P&R promotion. Extension of 10am to 6pm traffic restrictions in Stall Street and Lower Borough Walls. Seven Dials shared space and cycle scheme. Closure of Saw Close car park (22 spaces).*	*MEDIUM EFFECTIVENESS*
BATH 2	Cleveland Bridge area restrictions. (originally: Cleveland Bridge area restrictions feasibility study [& Low Emission Zone Feasibility Study])	Traffic Management	Strategic highway improvements, congestion management and traffic reduction.	2011 and new weight restrictions 2020	2021	Local Authority Traffic Management and Network	Department for Transport	No	Partially funded.	£1m - £10m	Implementation /Planning	n/a	Measured NO_2 levels.	Bridge repairs started June 2021 requiring full closure until November 2021. Traffic signal shuttle working with width restriction remained through 2021 and into 2022. Condition of bridge was much worse than had been identified by earlier inspections, meaning temporary weight limit and current vehicle restrictions will continue.	EXPECTED MEDIUM EFFECTIVENESS.2020 works were delayed due to Covid-19. Effects of temporary closure being monitored for impact on air quality.

Measure No.	Measure	Category	Classification	Year Measure Introduced	Estimated / Actual Completion Year	Organisations Involved	Funding Source	Defra AQ Grant Funding	Funding Status	Estimated Cost of Measure	Measure Status	Reduction in Pollutant / Emission from Measure	Key Performance Indicator	Progress to Date	Comments / Barriers to Implementation
BATH 3	*Low Carbon Bus Trial (CIVITAS 1.3)*	*Vehicle Fleet Efficiency*	*Promoting Low Emission Public Transport*	*2010*	*Complete.*	*Local Authority Environmental Health, Local Authority Transport Dept.*	*Local Authority, Funding: Defra Air Quality Grant*	*No*	*Partially funded.*	*£100k - £1m*	*Completed.*	*0.2 µg/m³*	*Fuel usage / costs.*	*Complete. As a result, 8 hybrid electric buses were in operation for 10 years on park and ride services. Now superseded by Bath CAP 3 (CAZ retrofitting).*	*LOW EFFECTIVENESS.39% improved fuel economy (mpg). 28% fuel saving (l/100km). Overall operating cost increase of £0.03/km (but due in part to prototype status). NO_x comparison unavailable. ORIGINAL MEASURE COMPLETE BUT NEW DEVELOPMENTS RE CAZ FUNDED RETROFITTING*
BATH 4	*Urban Freight Transhipment (CIVITAS 7.2)*	*Freight and Delivery Management*	*Freight Consolidation Centre*	*2011*	*Complete (funding ceased).*	*Bath and North East Somerset Council, DHL, Bristol City Council and retail outlets in Bath*	*Local Authority, Funding and CIVITAS (EU)*	*No*	*Partially funded.*	*£100k - £1m*	*Aborted*	*Reduced vehicle emissions*	*Number of deliveries transferred from LGV / HGV to E-cargo bike. Number of participating businesses. NOx emissions*	*See Bath CAP 5 and Bath 18: E-Cargo Bike last-mile delivery service funding was provided in 2019. Pilot scheme to subsidise delivery costs for businesses. Bath CAP 5*	*High level of subsidy required and no funding available – replaced with new E-cargo bike last-mile delivery (see 'Bath 18' below')*
BATH 5	*Improved Enforcement of TROs (CIVITAS 3.4 - Demand Management Strategies)*	*Freight and Delivery Management*	*Route Management Plans/ Strategic routing strategy for HGV's*	*2010*	*Complete.*	*Bath and North East Somerset Council*	*Bath and North East Somerset Council*	*No*	*Fully funded.*	*£10k – 50k*	*Complete*	*n/a*	*HGV traffic flows. NO_2 levels.*	*See Bath CAP 7*	*The trial indicated that identifying breaches of the 7.5 tonne weight limit and informally contacting the relevant operators led to a reduction in HGV volumes. For details see 2016 ASR.*
BATH 6	*Bicycle Hire including Electric Bikes (CIVITAS 6.4 and 6.5)*	*Transport Planning and Infrastructure*	*Public Cycle Hire Scheme*	*2015*	*2018*	*Bath and North East Somerset Council and 'Next Bike'*	*Local Sustainable Transport Fund and Access Fund*	*No*	*Fully funded.*	*£100k - £1m*	*Complete/Aborted.*	*Not known.*	*Vehicle mix (% bikes). No. of hires.*	*Superseded by e-scooter hire – see BATH 19. New cycle hire facility launched 2014 with PAYG at 9 stations across Bath. 5 further hire stations added to total 14 in 2016. Contract expired in 2019 and a new electric cycle hire scheme was tendered in 2019 but no contract was awarded. The focus has now shifted to an e-scooter trial.*	*Over 15,000 hires between June 2014 and June 2016. 877 users per month. Electric cycle hire scheme was tendered in 2019. Original hire scheme cancelled because non-profitable.an e-bikes more suitable.*
BATH 7	Electric Vehicle Recharging Points	Promoting Low Emission Transport	EV Recharging	2014	2022	West of England authorities and charge point suppliers	Local Sustainable Transport Fund, Access Fund, OLEV GUL City Scheme & ULEV Taxi Infrastructure	No	Fully funded	£1m - £10m	Implementation.	Not known	Vehicle mix (count of electric vehicles). Number of charges p.a. Number of different users.	Charging sessions increase across West of England charge point commensurate with national uptake of ULEVs. 2nd wave of OLEV funded chargers in the planning stage following consultation with DNO and commercial partner. 8 sites with rapid and fast chargers were in design stage as at the end of 2020. Some delays were caused by Covid-19 supply chain issues. Charges are due to come online in 2022.	EXPECTED MEDIUM EFFECTIVENESS The West of England GUL City Scheme outlines an increase in charge points sub-regionally from 200 to 400 points, including 'charging hubs'; further rapid chargers; demonstrator vehicles; and 100 council fleet vehicles converted to ULEVs by 2021 across the West of England.
BATH 8	*Improve Building Emission Assessments*	*Policy Guidance and Development Control*	*Other policy*	*n/a*	*n/a*	*Bath and North East Somerset Council*	*n/a*	No	*n/a*	*n/a*	*Aborted*	*n/a*	*Number of air quality assessments including spreadsheet tool.*	*No progress*	*Lack of resource and low priority due to low %age source apportionment.*
BATH 9	*ECO Stars Vehicle Recognition Scheme*	*Vehicle Fleet Efficiency*	*Fleet efficiency and recognition schemes*	*n/a*	*n/a*	*Bath and North East Somerset Council*	*n/a*	*No*	*n/a*	*n/a*	*Aborted*	*n/a*	*Number of haulage operators & vehicles audited. HGV vehicle mix survey (number plate and engine standard).*	*No progress*	*Low priority due to limited reported effectiveness and lack of resource.*

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BATH 10	Review Council and Emergency Service Vehicle Fleet	Vehicle Fleet Efficiency	Fleet efficiency and recognition schemes	2016	2021	Bath and North East Somerset Council	OLEV Go Ultra Low City Scheme	No	n/a	n/a	Implementation	Not known	Euro engine standard survey	Review undertaken by Energy Saving Trust for successful GUL City Scheme Bid. The Council has pledged to change 25% of light duty fleet to ULEVs by 2021. 10 pure EVs already purchased and operating in B&NES plus 4 hired pool cars. An MoU has been signed by Emergency Service providers – already a high proportion of Euro 6 vehicles.	EXPECTED MEDIUM EFFECTIVENESS. MoU signed by emergency services as a roadmap for meeting Euro 6 compliance for all but cars by 2021. Council fleet also compliant.
BATH 11	*Monitoring of Bus Fleet Quality*	*Vehicle Fleet Efficiency*	*Fleet efficiency and recognition schemes*	*AQAP from 2011 & CAP from 2017*	*2021*	*Bath and North East Somerset Council and bus operators*	*CAP Clean Air Fund*	*No*	*n/a*	*n/a*	*Complete/ Implementation*	*Critical measure in delivering compliance according to Full Business Case for Clean Air Zone*	*Euro engine standard survey. Number of emissions abatement retrofit / original design.*	*Superseded by Bath CAP3. OLEV Low Emission Bus Scheme bid unsuccessful. Pre-CVRAS Clean Bus Technology Fund relatively ineffective with some retrofitting unable to meet certification requirements. The Clean Air Fund bid as part of the CAP and CBTF extension means that theoretically all public bus services will be upgraded to CVRAS Euro VI by the end of 2020. See 'Bath CAP 3.*	*Superseded by Bath CAP3. Full audit of fleet planned as part of CAZ proposals. Bus upgrade programme agreed with operators most retrofits completed at time of writing.*
BATH 12	*Transport & Travel Information*	*Public Information*	*Other*	*2014*	*Complete.*	*Bath and North East Somerset Council*	*DfT*	*No*	*n/a*	*n/a*	*Complete*	*Not known*	*Number of signs. Contribute to achieving a target increase in bus passenger journeys per annum of 3% on a 2001/2 base level of 9.184m.*	*248 real time bus passenger information displays installed across B&NES. Overall bus passenger satisfaction in 2016 stood at 41% very satisfied and 47% fairly satisfied, in 2016.*	*Bus checker app implemented as part of LSTF West of England project and available via the Travel West website.*
BATH 13	*Alternative Exhaust Emissions Abatement*	*Vehicle Fleet Efficiency*	*Fleet efficiency and recognition schemes*	*2019 (as part of CAP)*	*Nov 2020*	*Bath and North East Somerset Council*	*CAP Clean Air Fund 2020 (subject to award)*	*No*	*n/a*	*n/a*	*Complete*	*Not known*	*Number of retrofitted HGVs. Number of buses retrofitted.*	*Superseded by BATH CAP 3. Clean Bus Technology Fund used for retrofitting of 35 buses across the West of England to Euro 5/6. Also Clean Vehicle Technology Fund award (joint bid) enabled Thermal Management Technology (TMT) to 42 buses across the West of England fitted as standard with Selective Catalytic Reduction (SCR). CAP CAF bid for 117 fully funded vehicle retrofits, 13 repowers and 26 CBTF Extension funded retrofits.*	*Availability of CVRAS (Clean Vehicle Retrofit Accreditation Scheme) accredited retrofit solutions.*
BATH 14	*Rossiter Road Traffic Management Measures*	*Traffic Management*	*Strategic highway improvements*	*2015*	*Complete.*	*Bath and North East Somerset Council*	*DfT / B&NES Highways budget*	*No*	*n/a*	*n/a*	*Complete*	*Moving traffic from receptors.*	*Traffic flows. NO_2 levels.*	*Completed 2015 and annual mean NO_2 levels reduced from 49 in 2014 to 28 µg/m^3 in 2016 on Widcombe Parade.*	*HIGH EFFECTIVENESS*
BATH 15	Promotional Website	Public Information	Via the internet	2016	2020	Bath and North East Somerset Council	Initially DEFRA AQ Grant, then B&NES budget and Clean Air Plan Implementation Fund	Yes	Fully funded.	£6,5k original budget.	Implementation	Not known	Number of hits	New Power BI visualisation added showing annual data from 2014 to 2020. Live dials taken down following server change and awaiting new wider Council website.	LOW EFFECTIVENESS Original work DEFRA grant complete, but further developments re online mapping and monitoring values in progress.

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BATH 16	B&NES Corporate Travel Plan	Vehicle Fleet Efficiency	Fleet efficiency and recognition schemes	2015	2020	Bath and North East Somerset Council	Council budget	No	Fully funded.	n/a	Implementation	Not known	Business mileage. Modal shift (e.g. number of employees transferred from private car to bike, walking or public transport bus and reduction in Single Occupant Vehicles (S.O.V.) commuting	The reduction in business miles has been stable at 50.8% reduction from 2019/20 (pre covid) with a slight increase of 2.5% from 2021-2022 CO2Kge = 123 tonnes -up 2 tonnes from 20/21. Managed corporate pool car fleet of 11 low emission pool cars -4 EVs, 4 hybrids and 3 Euro 6 petrol. For April to March 2021/22 52k miles were transferred from grey fleet. (12.5k in full E.V. = 2.4 tonnes of CO2 saved cf. avg. grey fleet car. 25.2k in non-plug in hybrid = 2.1 tonnes saved cf. avg. grey fleet car) = **4.5 tonnes of CO2 saved**. (plus a notional 12.5% [6.5k] miles not incentivised to be driven= 1.7 tonnes CO2).	MEDIUM EFFECTIVNESS. 1 car is ringfenced for the Peasedown communities HUB. New CTP in development for 2021-2024
BATH 17	Clean Air Schools Kit	Promoting Travel Alternatives	School Travel Plans / Other	2019	2025 (anticipated lifecycle)	Local Authority and Primary Schools	B&NES budget	No	Fully funded.	n/a	Implementation	Not known	School uptake numbers.	Launched in 2019 and being used by a number of schools.	LOW EFFECTIVENESS. Despite low immediate effect, a necessary component part of a suite of measures to nudge long term change.
Bath 18	e-cargo and ULEV delivery scheme	Freight and Delivery Management	Freight Partnerships for city centre deliveries	2020	2025	Bath and North East Somerset Council and WeGo	OLEV GUL CITY SCHEME	No	Partially funded	£100k - £500k	Implementation	tbc	Number of deliveries transferred from previous method	In February 2021 the revised bid was approved resulting in £500,000 to begin the project. Existing pilot terminated in January 2022, enabling the subsidised delivery trial to commence. Measure now taken forward as 'BATH CAP 5' above and following on from Bath 4.	EXPECTED HIGH EFFECTIVENESS. Real focus on e-cargo delivery in terms of funding. To subsidise delivery to discourage regular courier. Big impact for some businesses.
BATH 19	Future Transport Zone new technology trials (MaaS & e-scooters)	Transport Planning and Infrastructure	Other	2020	2021	WECA; DfT Bath and North East Somerset Council; and VOI	WECA & DfT	No	Partially funded	£1m - £10m	Implementation	Not known	Mobility as a Service & e-scooter technology uptake numbers	Originally a 12 month trial launched on 29 October 2020. A PAYG scheme where users can pick up an e-scooter from various locations across Bath. When first introduced, the scheme included 50 scooters in Bath – but given the success of the trial this has now doubled to 100. In Bath there have been 104,000 rides and 262,500km travelled by scooters. A long-term rental model is also being trialled where residents are able to lease an e-scooter for longer periods of time.	EXPECTED HIGH EFFECTIVENESS. Experimental. Short-trip replacement only. Safety concerns and difficulty enforcing against use on pedestrian only footways. The use of privately-owned e-scooters on public land remains illegal.
BATH 20	Journey To Net Zero (formerly Bath Delivery Action Plan)	Transport Planning and Infrastructure	Other	2020	2030	WECA and Bath and North East Somerset Council	WECA & DfT	No	Fully funded.	tbc	Planning	tbc	tbc	Renamed the Journey To Net Zero (JNZ) in 2021 following the 1st consultation ending March 2021, the JNZ was consulted on in late 2021 and provides a delivery plan which identifies transport measures for carbon neutrality by 2030. Includes: micro-mobility schemes; MaaS; P&R sites as multi-modal interchanges; bus stop improvements; road freight package (consolidation and restrictions), etc.	EXPECTED HIGH EFFECTIVENESSS.

Measure No.	Measure	Category	Classification	Year Measure Introduced	Estimated / Actual Completion Year	Organisations Involved	Funding Source	Defra AQ Grant Funding	Funding Status	Estimated Cost of Measure	Measure Status	Reduction in Pollutant / Emission from Measure	Key Performance Indicator	Progress to Date	Comments / Barriers to Implementation
BATH 21	Public Realm and Movement Strategy	Traffic Management	Re-prioritising road space away from cars	2020	2021	WECA and Bath and North East Somerset Council	WECA and Bath and North East Somerset Council	No	Fully funded.	tbc	Planning/ Implementation	tbc	Active travel count on road space and vehicular ATC	Experimental access restrictions in Kingsmead Sq stopping motor vehicles between 11am and midnight to come into effect by end of January 2022.	EXPECTED HIGH EFFECTIVENESS.
BATH 22	Clean Air Day	Public Information	Leaflets, TV, internet, etc.	2018	Annual ongoing	Bath and North East Somerset Council and Global Action Plan	Bath and North East Somerset Council, and Global Action Plan	No	Not funded	tbc	Aborted	Not known	Number of pledges and interactions	This was aborted in 2020 due to Covid-19 lockdown.	EXPECTED LOW EFFECTIVENESS. Impossible to measure effectiveness.
BATH 23	Liveable Neighbourhoods	Traffic Management	Re-prioritising road space away from cars	2020	tbc	WECA and Bath and North East Somerset Council	WECA and Bath and North East Somerset Council (Transport Improvement Programme & Council Capital Programme)	No	Fully funded	£1m - £10m	Planning	tbc	Active travel count on road space and vehicular ATC	November 2021 - January2022 consultation received more than 1,600 responses to its recent engagement on 15 priority LN schemes. The response was generally positive, with 51% supporting LN schemes, 36% expressing neutral views, and 13% against their implementation. £2.2m allocated to develop and deliver schemes. Design work being undertaken for 4 trial areas and 6 areas selected for development of residents parking zones. The LNs will include modal filters; expansion of residents' car parking; school streets; strategic corridor improvements encourage walking, cycling and public transport use and investment in on-street electric vehicle charging. The aim is to reduce the dominance of vehicles in residential areas - particularly through-traffic - while maintaining vehicle access.	EXPECTED HIGH EFFECTIVENESS Possible improvements in residential streets with potential worsening on main routes.
BATH 24	*Electric-Brompton hire scheme*	*Transport Planning and Infrastructure*	*Public (e)Cycle Hire Scheme*	*2020*		*WECA and Bath and North East Somerset Council*	*WECA and Bath and North East Somerset Council*				*Aborted*	*tbc*	*Uptake number*	*Aborted*	
BATH 25	Milsom St access restrictions	Traffic Management	Re-prioritising road space away from cars	2020	2021	Bath and North East Somerset Council	Bath and North East Somerset Council	No	Fully funded	£10k - £50k	Implementation	tbc	Pedestrian footfall.	Milsom Street has been under restrictions since 6th July 2020 which mean only buses are allowed to use the road from the junction with George Street up to Quiet Street between 10am and 6pm. All vehicles are also prohibited from parking, loading and waiting except for in the authorised and designated loading bays between the hours of 6pm and 10am. The measures were put in place to allow for easier social distancing following the Covid-19 lockdown and keep pedestrians and cyclists safe in the city, with a temporary barrier erected across the entry to the road. The experimental bus gate has commenced.	EXPECTED MEDIUM EFFECTIVENESS.

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Keynsham 1	*Quantify the benefits from the one way system pilot for the High Street including monitoring and modelling of air quality impacts.*	*Traffic Management*	*Re-prioritising road space away from cars*	*2017*	*2018*	*Bath and North East Somerset Council, Keynsham Town Council and WECA*	*West of England Local Enterprise Partnership (Local Growth Fund – WECA)*	*No*	*Fully funded.*	*n/a*	*Complete*	*Measured NO_2 concentrations now below the objective*	*Reduction in nitrogen dioxide concentrations. Traffic Counts. Reduction in emissions of nitrogen oxides.*	*COMPLETE. Trial commenced in May 2017. The reduction in monitored concentrations is between 3 to 27% when comparing similar periods before and after the introduction of the one-way system. Following positive feedback from the public consultation, in February 2019 the Council's Cabinet took the decision to make the arrangements permanent. In June 2019, the Council successfully secured £1.5 million.*	*HIGH EFFECTIVENESS.*
Keynsham 2	*Targeted information campaign for the most vulnerable groups (i.e. asthmatics, Chronic Obstructive Pulmonary Disease etc.).*	*Public Information*	*Other*	*2019*	*2021*	*B&NES Public Protection and Health Improvement, Public Health, Research and Intelligence Team, Clinical Commissioning Group, Sirona Care and Health.*	*B&NES*	*No*	*Not funded.*	*n/a*	*Aborted*	*No reduction in concentration in Nitrogen Dioxide, however there would be an exposure reduction for residents.*	*The number of hits on website. Number of initiatives delivered.*	*Aborted due to low prioritisation / effectiveness and lack of resource.*	
Keynsham 3	Influencing planning policy to require electric vehicle charge points for each new property.	Policy Guidance and Development Control	Air Quality Planning and Policy Guidance	2016	Ongoing	Bath and North East Somerset Council Planning Department	n/a	No	Not funded	n/a	Planning	Not known	Number of properties where a power spur for an electric vehicle charge point is installed. Number of planning applications approved with a vehicle charge point as an advisory or required condition.	Local Plan (Core Strategy and Placemaking Plan) Partial Update consultation completed in 2021: active or passive charging infrastructure in all residential developments including for potential on-street charging where off-street parking unavailable. Passive in all non-residential developments and at least 20% active. Parking standards moved from Local Plan to Supplementary Planning Document. Examination and adoption of Local Plan Partial Update in progress.	EXPECTED LOW EFFECTIVENESS. Limited in scope to new properties.
Keynsham 4	Increase 'REVIVE' (WECA) public charging points.	Promoting Low Emission Transport	EV Recharging	2016	2021	Bath and North East Somerset Council, West of England Authorities and charge point providers	OLEV Go Ultra Low City Scheme	No	Fully funded	£100k - £500k	Planning	Not known	Number of charge points. Number of charging sessions per year.	2 public charge points and 2 charge points for council fleet installed. Further installations are in the planning stage following a successful consultation with the DNO. 1 public rapid charger, 1 taxi rapid charger & 1 fast charger at design stage following Covid-19 related delay and scheduled for 2022 install.	EXPECTED MEDIUM EFFECTIVENESS
Keynsham 5	Recommend tree planting in future infrastructure programmes	Transport Planning and Infrastructure	Other	2016	2021	Bath and North East Somerset Council	Bath and North East Somerset Council	No	Not funded.	Not known	Planning	Not known	Number of trees planted.	The first phase of improvements to the public space between Bath Hill and Charlton Road including 7 planters and 3 trees commenced in June 2021 and were completed in March 2022.	EXPECTED LOW EFFECTIVENESS
Keynsham 6	*Influence planning policy to encourage the provision of cycle parking for each new property.*	*Transport Planning and Infrastructure*	*Cycle network*	*2016*	*2029*	*Bath and North East Somerset Council*	*Bath and North East Somerset Council*	*No*	*Not funded*	*N/a*	*Complete*	*Not known*	*Number of new properties with cycle storage. Number of planning applications approved with cycle storage as advisory or required condition.*	*Placemaking plan adopted 2017 and standards require new development to now provide minimum parking (secured and covered).*	*EXPECTED LOW EFFECTIVENESS*

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Keynsham 7	*Explore the promotion of an "Electric Zone".*	*Promoting Low Emission Transport*	*Other*	*2016*	*2021*	*Public Protection and Health Improvement & Highways.*	*Bath and North East Somerset Council*	*No*	*Not funded*	*n/a*	*Aborted*	*Not known*	*Number of signs erected. Number of electric vehicles in peak hours on High Street/Ashton Way with a manual traffic count. Number of charging sessions.*	*Aborted. Wider area charging network 'REVIVE' replaces this.*	*Partly dependent on emerging GUL programme and outcome of one-way trial for certainty over any on-street installations.*
Keynsham 8	Influence the design of developments to improve access to public transport, cycling and walking routes.	Transport Planning and Infrastructure	Other	2016	2016-2029	B&NES Placemaking Plan / Planning DC.	Bath and North East Somerset Council	No	Not funded	n/a	Implementation	Negligible	Number of approved planning applications with minimum 30 minute bus frequency in or adjacent to site (with 100 metre of the site).	Placemaking Plan requires developments to facilitate walking, cycling and public transport	EXPECTED LOW EFFECTIVENESS
Keynsham 9	*Support the creation of a local "Air Quality Action Group".*	*Public Information*	*Other*	*Connecting Communities Forum*	*n/a*	*n/a*	*n/a*	*No*	*Not funded*	*n/a*	*Aborted*	*Not known*	*Established as part of the remit of existing of new group.*	*Aborted due to low prioritisation / effectiveness and lack of resource.*	
Keynsham 10	Keynsham Greenway links to National Cycle Network 4, Wellsway School and riverside path into Bristol and S Glos with new bridge over River Avon.	Transport Planning and Infrastructure	Cycle Network	2020	2029	Bath and North East Somerset Council and WECA	WECA	No	Partially funded	Not known	Implementation	n/a	Delivery of project. Number of cycle trips from annual surveys.	LCWIP consulted Feb 2020 the adopted plan was published in January 2021. Plan includes no new routes but some infrastructural improvements on existing roads including on-road cycle lanes linking potential new development.	EXPECTED MEDIUM EFFECTIVENESS Sufficient contributions to cover final cost and delivery of housing.
Keynsham 11	*Work with Community Transport to promote the use of Low emission dial-a-ride vehicles.*	*Promoting Low Emission Transport*	*Public Vehicle Procurement - Prioritising uptake of low emission vehicles*	*2016*	*n/a*	*Bath and North East Somerset Council*	*Bath and North East Somerset Council*	*No*	*Not funded*	*n/a*	*Aborted*	*Not known*	*Low emission vehicle journeys / miles.*	*Aborted due to low prioritisation / effectiveness and lack of resource.*	*Appropriate vehicle availability, plus budget and fleet renewal programme.*
Keynsham 12	*Identify, influence and publicise pedestrian and cycling facility improvements*	*Promoting Travel Alternatives*	*Promotion of cycling and walking*	*2016*	*2023*	*Bath and North East Somerset Council*	*WECA*	*No*	*Not funded*	*n/a*	*Complete*	*Not known*	*Audit of infrastructure completed. Recommendation will be integrated into this plan. Walking and cycling surveys*	*Complete as LCWIP adopted and published in January 2021.*	*EXPECTED LOW EFFECTIVENESS*
Keynsham 13	*Lobby government for incentivising uptake of non-diesel cars.*	*Other*	*Other*	*2016*	*Complete*	*Bath and North East Somerset Council*	*Bath and North East Somerset Council*	*No*	***n/a***	n/a	Complete	*In itself, no improvement, however, there is a reduction with each new ULEV introduced replaced a diesel vehicle*	*Government response and changes to legislation.*	*Submitted a consultation response (June 2017) to the DEFRA consultation: 'Improving air quality: national plan for tackling nitrogen dioxide in our towns and cities'*	
Keynsham 14	Identify and publicise priority cycling routes to support a cycling culture for all.	Promoting Travel Alternatives	Promotion of cycling and walking	2016	Ongoing	Bath and North East Somerset Council	WECA	No	Not funded	n/a	Planning	n/a	Active travel counts	Dependent on completion of infrastructure as identified in Keynsham 12.	EXPECTED LOW EFFECTIVENESS
Keynsham 15	*Encourage low emission bus services in Keynsham*	*Vehicle Fleet Efficiency*	*Promoting Low Emission Public Transport*	*2016*	*2021*	*Bath and North East Somerset Council*	*CAP Clean Air Fund 2020*	*No*	*Fully funded*	*£2m*	*Complete*	*Modelled in the Clean Air Plan Full Business Case Documents (2020)*	*Proportion of vehicles operating as minimum Euro 6 standard (CAZ compliant).*	*Progressed indirectly through CBTF extension and CAP bus retrofits -agreements for which were being finalised in 2020 and at the time of writing >80% of retrofits were complete.*	*EXPECTED HIGH EFFECTIVENESS The proposed Bath CAZ will be framed such that Keynsham AQMA will also benefit low emission vehicles.*

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Keynsham 16	*Increase public education messages which promote healthier choices for short journeys*	*Promoting Travel Alternatives*	*School Travel Plans / Other*	*2019*	*2025*	*Bath and North East Somerset Council*	*Bath and North East Somerset Council*	*No*	*Fully funded*	*n/a*	*Complete*	*Not known*	*Delivery of a public education campaign*	*Air quality and health campaign focussed in Bath also benefited Keynsham – bus shelter and rear of lower emission bus advertising as part of the CAP. The B&NES Clean Air Schools Toolkit was launched on CAD in June 2019. The toolkit offers a number of resources for primary schools and other community settings including: lesson plans, posters, Modeshift Stars, stickers, pledge cards, a musical rap/song, Bikeability, and advice on setting up a walking bus and anti-idling campaigns. A number of schools are already actively using the toolkit.*	*EXPECTED LOW EFFECTIVENESS*
Keynsham 17	Work with bus operators on improved services, ticketing and simplified fare structure.	Promoting Travel Alternatives	Other	2016	Ongoing	WECA and bus operators	WECA	No	Fully funded	n/a	Planning / Implementation	Not known	B&NES area bus usage figures. Annually Bus Passenger Satisfaction surveys for B&NES (Transport Focus).	WECA adopted a bus strategy in June 2020. The bus strategy includes; simplified ticketing; transfer of more highway space to buses; bikes and pedestrians; an aim of doubling patronage by 2036. In March 2021, the government launched a National Bus Strategy 'Bus Back Better' that supersedes the WECA strategy and laid out a requirement for LTAs to pursue Enhanced Partnerships (by April 2022) under the Bus Services Act, even if they are implementing bus franchising. All LTAs must introduce a Local Bus Service Improvement Plan by October 2021 that will include: journey time targets; identify bus priority measures; set targets for passenger growth; multi-operator ticketing; and commit to a Bus Passenger Charter. This will form part of a bid for a share of £3billion Transformation Funding.	Now part of the CAP project.
Keynsham 19	Advocate increased rail service via "MetroWest" - resulting in increase from hourly to half-hourly rail service.	Promoting Travel Alternatives	Promote use of rail	2017	2021	WECA	DfT	No	Fully funded	n/a	Planning / Implementation	Not known	Project implementation. Rail patronage per service at Keynsham (annual rail survey).	DfT awarded £31million in April 2019. Development Consent Order (DCO) Application was accepted for Phase 1 (Portishead Branch Line) in December 2019. The DCO Examination period began in October 2020 and ended in April 2021. Still awaiting a decision on the DCO by the Department for Transport (DfT). The decision had been expected in October 2021 but it was confirmed then that the Secretary of State would require up to a further 6 months to make the decision. The project team are continuing to press for a decision to be made as soon as possible.	EXPECTED HIGH EFFECTIVENESS. On track to be delivered.

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Saltford 1	*Targeted information campaign for the most vulnerable groups (i.e. asthmatics, Chronic Obstructive Pulmonary Disease etc.).*	*Public Information*	*Other*	*2019*	*2021*	*B&NES Public Protection and Health Improvement, Public Health, Research and Intelligence Team, Clinical Commissioning Group, Sirona Care and Health.*	*B&NES*	*No*	*Not funded.*	*n/a*	*Aborted*	*No reduction in concentration in Nitrogen Dioxide, however there would be an exposure reduction for residents.*	*The number of hits on website. Number of initiatives delivered.*	*Aborted due to low prioritisation / effectiveness and lack of resource.*	
Saltford 2	Recommend tree planting in future infrastructure programmes	Transport Planning and Infrastructure	Other	2016	2021	Bath and North East Somerset Council	Bath and North East Somerset Council	No	Not funded.	Not known	Planning	Not known	Number of trees planted.	Joint Spatial Plan withdrawal delayed opportunity for a project but then the Tree and Woodland Plan project commenced in 2020 providing a potential opportunity for planting.	EXPECTED LOW EFFECTIVENESS
Saltford 3	Advice to land owners on planting that can help to protect their properties from air pollution.	Transport Planning and Infrastructure	Other	2016		Bath and North East Somerset Council	Bath and North East Somerset Council	No	Not funded.	£1k	Planning	Not known	Number of hits on website	No progress. At time of writing work has commenced on collating an advice to residents package for residents in areas of higher air pollution.	Limited resources and lowering of nitrogen dioxide concentrations resulted in it being a low priority.
Saltford 4	Influencing planning policy to require electric vehicle charge points for each new property.	Policy Guidance and Development Control	Air Quality Planning and Policy Guidance	2016	Ongoing	Bath and North East Somerset Council Planning Department	n/a	No	Not funded	n/a	Planning	Not known	Number of properties where a power spur for an electric vehicle charge point is installed. Number of planning applications approved with a vehicle charge point as an advisory or required condition.	Local Plan (Core Strategy and Placemaking Plan) Partial Update consultation completed in 2021: active or passive charging infrastructure in all residential developments including for potential on-street charging where off-street parking unavailable. Passive in all non-residential developments and at least 20% active. Parking standards moved from Local Plan to Supplementary Planning Document. Examination and adoption of Local Plan Partial Update in progress.	EXPECTED LOW EFFECTIVENESS. Limited in scope to new properties.
Saltford 5	Increase 'REVIVE' (WECA) public charging points.	Promoting Low Emission Transport	EV Recharging	2016	2021	Bath and North East Somerset Council, West of England Authorities and charge point providers	OLEV Go Ultra Low City Scheme	No	Fully funded	£100k - £500k	Planning	Not known	Number of charge points. Number of charging sessions per year.	2 public charge points and 2 charge points for council fleet installed. Further installations are in the planning stage following a successful consultation with the DNO. 1 public rapid charger, 1 taxi rapid charger & 1 fast charger at design stage following Covid-19 related delay and scheduled for 2021 install.	EXPECTED MEDIUM EFFECTIVENESS
Saltford 6	*Explore the promotion of an "Electric Zone".*	*Promoting Low Emission Transport*	*Other*	*2016*	*2021*	*Public Protection and Health Improvement & Highways.*	*Bath and North East Somerset Council*	*No*	*Not funded*	*n/a*	*Aborted*	*Not known*	*Number of signs erected. Number of electric vehicles in peak hours on the A4 Saltford with a manual traffic count. Number of charging sessions.*	*Aborted. Wider area charging network 'REVIVE' replaces this.*	*Partly dependent on emerging GUL programme and outcome of one-way trial for certainty over any on-street installations.*
Saltford 7	*Support the creation of a local "Air Quality Action Group".*	*Public Information*	*Other*	*Connecting Communities Forum*	*n/a*	*n/a*	*n/a*	*No*	*Not funded*	*n/a*	*Aborted*	*Not known*	*Established as part of the remit of existing of new group.*	*Aborted due to low prioritisation / effectiveness and lack of resource.*	
Saltford 8	*Influence planning policy to encourage the provision of cycle parking for each new property.*	*Transport Planning and Infrastructure*	*Cycle network*	*2016*	*2029*	*Bath and North East Somerset Council*	*Bath and North East Somerset Council*	*No*	*Not funded*	*N/a*	*Complete*	*Not known*	*Number of new properties with cycle storage. Number of planning applications approved with cycle storage as advisory or required condition.*	*Placemaking plan adopted 2017 and standards require new development to now provide minimum parking (secured and covered).*	*EXPECTED LOW EFFECTIVENESS*

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Saltford 9	*Work with Community Transport to promote the use of Low emission dial-a-ride vehicles.*	*Promoting Low Emission Transport*	*Public Vehicle Procurement - Prioritising uptake of low emission vehicles*	*2016*	*n/a*	*Bath and North East Somerset Council*	*Bath and North East Somerset Council*	*No*	*Not funded*	*n/a*	*Aborted*	*Not known*	*Low emission vehicle journeys / miles.*	*Aborted due to low prioritisation / effectiveness and lack of resource.*	*Appropriate vehicle availability, plus budget and fleet renewal programme.*
Saltford 10	Encourage low emission bus services in Keynsham	Vehicle Fleet Efficiency	Promoting Low Emission Public Transport	2016	2021	Bath and North East Somerset Council	CAP Clean Air Fund 2020	No	Fully funded	£2m	Complete	Modelled in the CAP Full Business Case Documents (2020)	Proportion of vehicles operating as minimum Euro 6 standard (CAZ compliant).	Progressed indirectly through CBTF extension and CAP bus retrofits. All public bus service vehicles compliant in 2021, 61% natural Euro 6 and 39% retrofitted to Euro 6.	EXPECTED HIGH EFFECTIVENESS. The proposed Bath CAZ will be framed such that Saltford AQMA will also benefit low emission vehicles.
Saltford 11	*Lobby government for incentivising uptake of non-diesel cars.*	*Other*	*Other*	*2016*	*Complete*	*Bath and North East Somerset Council*	*Bath and North East Somerset Council*	*No*	***n/a***	n/a	Complete	*In itself, no improvement, however, there is a reduction with each new ULEV introduced replaced a diesel vehicle*	*Government response and changes to legislation.*	*Submitted a consultation response (June 2017) to the DEFRA consultation: 'Improving air quality: national plan for tackling nitrogen dioxide in our towns and cities'*	
Saltford 12	*Increase public education messages which promote healthier choices for short journeys*	*Promoting Travel Alternatives*	*School Travel Plans / Other*	*2019*	*2025*	*Bath and North East Somerset Council*	*Bath and North East Somerset Council*	*No*	*Fully funded*		*Complete*	*Not known*	*Delivery of a public education campaign*	*Air quality and health campaign focussed in Bath also benefited Saltford – bus shelter and rear of lower emission bus advertising as part of the CAP. The B&NES Clean Air Schools Toolkit was launched on CAD in June 2019. The toolkit offers a number of resources for primary schools and other community settings including: lesson plans, posters, Modeshift Stars, stickers, pledge cards, a musical rap/song, Bikeability and advice on setting up a walking bus and anti-idling campaigns. A number of schools are already actively using the toolkit.*	*EXPECTED LOW EFFECTIVENESS*
Satlford 13	*Support the provision or improved lighting on cycle path.*	*Transport Planning and Infrastructure*	*Cycle network*	*2016*		*B&NES Property Services*		*No*	*Not funded.*	*n/a*	*Aborted*	*Not known*	*Lighting provided to key locations at least*	*Aborted due to low prioritisation / effectiveness and lack of resource.*	*Concerns about effects on bat corridor, which may be offset by 'bat hat' option.*
Saltford 14	Continue feasibility work on reopening Saltford Station.	Transport Planning and Infrastructure	Public transport improvements- interchanges stations and services	2016	2024	B&NES, First Group, Network Rail & MetroWest partners	Bath and North East Somerset Council	No	Partially funded (subject to successful bid)	n/a	Planning	Not known	Completed feasibility study	GWR requested to undertake timetabling work to determine if an additional station is feasible within MetroWest phase 1 timetable. The bid for £50k by the West of England Combined Authority (WECA) to the DfT "restoring your railway" fund to help pay for up-to-date feasibility work on a Saltford Station was unsuccessful. Supportive letters were sent from the leader of B&NES Council and also from the WECA Mayor. There were concerns raised with potential congestion on the line and how a Saltford Station would fit in with wider regional developments.	EXPECTED MEDIUM EFFECTIVENESS Supported by West of England Authorities, but not part of MetroWest phases 1 and 2. Awaiting results of GWR timetabling work.

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

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

The Public Health England 'Public Health Outcomes Framework' indicator '3.01 Fraction of mortality attributable to particulate air pollution[8] (particulates under 2.5 micrometres in diameter as opposed to nitrogen dioxide)' for Bath & North East Somerset Council in 2020 (the most recent year available) is 5.4%. This is similar to the values across the South West region of 5.2% and 5.6% nationally.

In 2015 Bath & North East Somerset Council started to monitor $PM_{2.5}$ at Chelsea House, London Road, Bath (CM4), this a roadside site set 15 m back from the road. Monitoring from this location shows concentrations of $PM_{2.5}$ remaining constant over the last 3 years. Due to its small size $PM_{2.5}$ can travel large distances in the air. 40-50% of $PM_{2.5}$ levels can be from sources outside the local authority boundary (LAQM.TG16)[9].

Bath & North East Somerset Council is working on a Clean Air Plan which includes introducing a Clean Air Zone to tackle the worst polluting vehicles. These measures will also address $PM_{2.5}$ including BATH CAP 2 (Charging Clean Air Zone), BATH CAP 3 (Retrofitting Buses) and BATH CAP 8 (anti-idling).

Within Bath and North East Somerset the area depicted by the city of Bath is a smoke control area. Details of this area can be found at Bath & North East Somerset Council Smoke Control Website. Within this area the Council works to ensure that only authorised fuels or appliances are used.

[8] Public Health Outcomes Framework

[9] Local Air Quality Management - Technical Guidance (TG16), April 2021

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

This section sets out the monitoring undertaken within 2021 by Bath & North East Somerset Council and how it compares with the relevant air quality objectives. In addition, monitoring results are presented for a five-year period between 2017 and 2021 to allow monitoring trends to be identified and discussed.

Summary of Monitoring Undertaken

3.1.1 Automatic Monitoring Sites

Bath & North East Somerset Council undertook automatic (continuous) monitoring at 4 sites during 2021. Table A.1 in Appendix A shows the details of the automatic monitoring sites. Monitoring was carried out for NO_2 and PM_{10} and a $PM_{2.5}$ in 2021.

The Bath & North East Somerset Council, Air Quality Data - Live webpage presents automatic monitoring results for Bath & North East Somerset Council, with automatic monitoring results also available through the UK-Air website (the London Road Continuous NO_2 analysers is listed as Bath Roadside (until June 2019) and Bath A4 Roadside (from October 2019)).

Local authorities do not have to report annually on the following pollutants: 1,3 butadiene, benzene, carbon monoxide and lead, unless local circumstances indicate there is a problem. Whilst we are fully compliant with the national air quality objective with respect to benzene, Bath & North East Somerset Council has a benzene monitor which is part of the national non-automatic hydrocarbon network located at the London Road continuous site (CM1) until June 2019 and then moved to Bath A4 Roadside (CM8) in October 2019. Results from this site are available at UK-AIR Non Automatic Hydrocarbon Website listed as Bath A4 Roadside and details are also given in Appendix F.

Maps showing the location of the monitoring sites are provided in Appendix D. Further details on how the monitors are calibrated and how the data has been adjusted are included in Appendix C.

3.1.2 Non-Automatic Monitoring Sites

Bath & North East Somerset Council undertook non-automatic (i.e. passive) monitoring of NO_2 at 176 sites during 2021 (with 48 of these locations using triplicate diffusion tubes). Table A.2 in Appendix A presents the details of the non-automatic sites. 19 new sites were introduced in 2021, 1 site was moved due to poor data capture, 6 sites were in Temple Cloud, 6 sites were in relation to Clean Air Plan monitoring, and a further 7 monitors to respond to public requests and to check other key locations. A further 6 sites were added in November or December 2021, these will be reported on in 2023. The new monitoring sites were:

- Temple Cloud
  - DT260 – Temple Cloud 14 (Eastern side of A37)
  - DT261 – Temple Cloud 15 (Eastern side of A37)
  - DT262 – Temple Cloud 16 (Eastern side of A37)
  - DT263 – Temple Cloud 17 (Eastern side of A37)
  - DT264 – Temple Cloud 18 (Peterside)
  - DT284 – Temple Cloud 26 (Building façade)
- Clean Air Plan
  - DT276 – Twerton High Street
  - DT277 – Keynsham Background (Memorial Park)
  - DT278 – Bath – CAZ Background 1 (Royal Crescent)
  - DT279 – Bath – CAZ Background 2 (Henrietta Park)
  - DT280 – Bath – Background (Alice Park)
  - DT288 – Victoria Buildings – façade
- Other sites
  - DT258 – Radstock – Frome Road
  - DT259 – Midsomer Norton – Redfield Road
  - DT266 – Keynsham – Avon Mill Lane
  - DT268 – Westfield 4 (Charlton Road Crossroads)
  - DT269 – Westfield 5 (Westfield Primary School)
  - DT270 – Westfield 6 (Butchers Close)
  - DT271 – Westfield 7 (Bath Spa College)
- Sites added at the end of 2021 which will be reported on in 2022
  - DT289 – Bathampton 1 (High Street)
  - DT290 – Bathampton 2 (High Street)
  - DT291 – Bathampton 3 (High Street)
  - DT292 – Bathampton 4 (High Street)
  - DT293 – Westgate Buildings
  - DT294 – Walcot Parade 3 (Higher level pavement)

A further 10 non LAQM sites were monitored in Temple Cloud to include sites at the rear of properties and indoor, further details of this monitoring is in Appendix H.

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.

An interactive map showing diffusion tube locations and monitoring trends is available at Bath & North East Somerset Council Air Quality Data – Long Term Website.

3.1.3 Indicative Monitoring Sites

During 2021 Bath & North East Somerset also carried out monitoring at one locations using an AQMesh sampler and 2 locations using Zephyr samplers (Appendix G).

- Keynsham – Avon Mill Lane (AQMesh)
- Bath – Windsor Bridge (co-location) (Zephyr)
- Gay Street (Zephyr)

These samplers are indicative and monitor NO_2 using electrochemical sensors, PM_{10} and $PM_{2.5}$ using optical particle count sensors giving real-time results every 15 minutes. Results are shown in Appendix F.

Individual Pollutants

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

3.1.4 Nitrogen Dioxide (NO_2)

Table A.3 and Table A.4 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 2021 dataset of monthly mean values is provided in Appendix B. Note that the concentration data presented in Table B.1 includes distance corrected values, only where relevant.

Table A.5 in Appendix A compares the ratified continuous monitored NO_2 hourly mean concentrations for the past five years with the air quality objective of 200µg/m^3, not to be exceeded more than 18 times per year.

Automatic Monitoring Data

The trend data shows that 2021 was not a peak year for NO_2, with monitoring results being similar to 2020 at all sites (Figure A.1, Appendix A). All continuous analyser monitoring results were below the annual average objective of 40 µg/m^3 and there were no exceedances of the 1-hour objective (18 exceedances allowed).

NO_2 reduced by an average of 18% compared to results in 2019; this is not as low as the average 20% reduction in levels across the National AURN network. Traffic volumes were below normal levels at the beginning of 2021 following a national lockdown and began to increase as restrictions eased but remained below average most of 2021.

Diffusion Tube Monitoring Data

Bath

The results from monitoring sites in Bath show that in 2021 the annual average objective was exceeded at the following locations:

- DT020 – Wells Road
- DT042 – Dorchester Street
- DT224 – Walcot Parade 2

Of these sites the DT020 and DT224 exceeded the 40 µg/m^3 when adjusted to the closest building façade. All the monitoring sites which exceed the NO_2 annual average objective at the façade are within an AQMA (these sites are monitored in accordance with LAQM but don't meet the AQD directive as required for CAZ success reporting, please see the Annual CAZ monitoring report for further information)[10]

In addition to the above sites, there are also 4 other sites in Bath (identified below) having levels which are between 36-40 µg/m^3. These monitoring sites are within the Bath AQMA. Monitoring will continue at all these locations to ensure concentrations do not increase above the objective.

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- DT060 – Victoria Buildings
- DT198 – Walcot Parade
- DT222 – Anglo Terrace Façade
- DT090 – Chapel Row 2

The trends in diffusion tube monitoring since 2017 are shown in Figure A.2-A.20 in Appendix A. Monitoring results of NO_2 in 2021 were lower than in 2019 by an average of 20% across the network, as for the automatic data. Results are showing a general downward trend at most locations although slightly higher than the extreme low in 2020.

No monitoring sites were at or above 60 µg/m^3, indicating the 1-hour objective has been met. There are currently no plans to amend the AQMA to remove the 1-hour objective from the Bath AQMA.

Bathampton

Monitoring continued along Bathampton High Street and on A36 in Bathampton (Figure D.6 in Appendix D). As a community request to look at the worst-case location on the High Street, 4 further monitoring sites were added on Bathampton High Steet in late 2021, these will be reported on in 2023 as there was limited data in 2021. The results from 2021 show that levels at the existing locations were below 40 µg/m^3. Monitoring will continue in Bathampton as part of the Clean Air Plan.

Batheaston

Monitoring continued along London Road West in Batheaston, on the A4 in Batheaston, and on the Toll Bridge linking the Batheaston with Bathampton (Figure D.6 in Appendix D). The results from 2021 show that levels at all locations were below 40 µg/m^3. Monitoring will continue in Batheaston as part of the Clean Air Plan.

Farrington Gurney

In 2021 monitoring continued at 3 key locations in Farrington Gurney (Figure D.7 in Appendix D). Following the draft AQAP consultation, a further site was added on the A362 on the edge of the village in 2020. The results in 2021 remained below the objective of 40 µg/m^3. Monitoring is continuing to establish an ongoing trend at the 3 key locations.

Keynsham

As part of the Getting around Keynsham Transport Strategy, the Council trialled a one-way system in the centre of Keynsham, and a decision was made in 2019 to make the one-way

system permanent. In addition to this in June 2020, the High Street was closed between 9am and 5pm to allow for social distancing, this closure was replaced by a temporary full closure in July 2021 to allow public realm changes to be made. To monitor the effects of the scheme, 5 additional diffusion tubes have been located in the town. The diffusion tubes were installed in September 2016 for pre-trial monitoring. The trial began in May 2017. Locations of the monitoring sites are shown in Figure D.8 in Appendix D.

Following an enquiry over high pollution levels an additional temporary site was added in 2021 to monitor a location at the edge of Keynsham.

In 2021 the results show that all the monitoring locations after bias and annual corrections remain below 40 µg/m^3.

Monitoring will continue in Keynsham, however some of the additional scheme sites will be removed in 2022 as the monitoring remains below 40 µg/m^3.

Midsomer Norton

Monitoring in Midsomer Norton was carried out 1 location close to a school (Figure D.10 in Appendix D). The results from 2021 show that levels were below 40 µg/m^3 and no further action is required.

Pensford

Monitoring in Pensford has been carried out in the street canyon on Pensford Hill close to the give way for HGVs (Figure D.9 in Appendix D).

The results for monitoring location in Pensford in show that the levels in 2021 were below the objective. Monitoring in Pensford is continuing as changes to the road layout have raised concerns over increasing pollution concentrations.

Radstock

Monitoring was carried out in Radstock at 1 location (Figure D.10 in Appendix D). The results from 2021 show that levels were below 40 µg/m^3 and no further action is required.

Monitoring continues in Radstock at other locations to ensure no hot spots have been missed.

Saltford

In 2021 monitoring was carried out at 2 locations within Saltford. Figure D.11 in Appendix D is a map showing the locations of the monitoring sites. The results from 2021 show that

levels at both locations were below 40 µg/m^3 at the façade of properties. Monitoring will continue at 2 sites in Saltford.

Temple Cloud

Following a request from Cameley Parish Council a diffusion tube was installed in May 2016 on the A37 in at Temple Cloud in a narrow section of road, which also included a street canyon (Figure D.12 in Appendix D). The initial results from this monitored suggested that concentrations at this section of the A37 may be high. A further 4 monitoring sites were added in September 2016 and a further 3 monitoring sites were added in May 2017 to understand the extent of the high levels. In 2018 monitoring was reduced to 3 key locations on the A37. As part of the AQAP development a feasibility study was carried out for Temple Cloud. This included modelling the air quality along the A37. This modelling showed that the locations being monitored may not be including the highest concentrations of NO_2. To confirm the model findings further monitoring locations were added in March 2020 at 6 locations, monitoring will continued at 4 of these locations in 2021. In 2021, further monitoring was carried out on the Eastern side of the A37 to ensure the concentrations remained low following the vegetation cutback.

The 2021 results show that 2 monitoring locations on the A37 exceeded the annual average objective (DT96 – Temple Cloud and DT253 – Temple Cloud 10). In 2021 all sites were below 60 µg/m^3, this indicates the 1-hour objective was not exceeded.

The results showed that for the monitoring on the Eastern side of the A37 showed all concentrations were below 40 µg/m^3.

In 2021 further monitoring was carried out at the rear of properties (to look at whether concentrations were below the objective to provide advice to residents on using mechanical ventilation as mitigation for high levels on the roadside) and indoors in 2021 (to look at exposure). Further details of this work are in Appendix H.

Westfield

Following a request from Parish Councillors, 4 new sites were monitored (Figure D.11 in Appendix D). The results from 2021 show that levels were below 40 µg/m^3 and no further action is required.

Monitoring continues in Westfield at 1 location close to a school.

Whitchurch

Following a high result in 2015 at the Whitchurch site monitoring site a wider study was commissioned. A further 5 monitoring locations in Whitchurch were added to the network in May 2016 and one on the school façade was added in January 2017. In 2018 this was reduced to 4 key locations. Figure D.13 in Appendix D is a map showing the locations of the monitoring sites. The results from 2021 show that levels at all locations were below 40 µg/m^3 at the façade of properties. Monitoring will continue at 4 sites in Whitchurch.

3.1.5 Particulate Matter (PM_{10})

Table A.6 in Appendix A: Monitoring Results compares the ratified and adjusted monitored PM_{10} annual mean concentrations for the past five years with the air quality objective of 40µg/m^3.

Table A.7 in Appendix A compares the ratified continuous monitored PM_{10} daily mean concentrations for the past five years with the air quality objective of 50µg/m^3, not to be exceeded more than 35 times per year.

Monitoring for PM_{10} has been carried out at 2 sites during 2021 using BAM1020 analysers. The data has been corrected to Gravimetric equivalent by dividing by 1.2 and annualised where appropriate. QA/QC procedures are described in Appendix C.

Windsor Bridge (CM3) is at a worst case location on the opposite side of the junction to the residential properties. Bath A4 Roadside enclosure (CM8) is located on London Road, this moved from Chelsea House (CM4) in September 2019. The analyser is closer to the road than when it was located at Chelsea House.

The results show that the annual average objective was not exceeded during 2021 and the number of exceedances of the 24 hour objective (50 µg/m^3) was below 35 at all sites. Figure A.21 and Figure A.22 shows that the levels of PM_{10} are similar to previous years.

There was one peak above the 24 hour objective in March 2021 at both CM3 and CM8 on 3rd March 2021. There was a short-term moderate PM_{10} on 5th November (bonfire night), this was a widespread episode. The peak was too short to cause an exceedance of the 24 hour objective.

3.1.6 Particulate Matter ($PM_{2.5}$)

Table A.8 in Appendix A presents the ratified and adjusted monitored $PM_{2.5}$ annual mean concentrations for the past five years.

Bath & North East Somerset Council started monitoring $PM_{2.5}$ in July 2015 at Chelsea House (CM4). Table A.8 and Figure A.23 in Appendix A presents the ratified and adjusted monitored $PM_{2.5}$ annual mean concentrations for the past five years.

The results show similar concentrations of $PM_{2.5}$ to previous years, with the annual average concentration below the air quality objective of 25 µg/m^3. The results show that there were 2 days with moderate (24 hour average concentrations >35 µg/m^3) levels of $PM_{2.5}$ in Bath & North East Somerset on 2nd and 3rd March 2021. There was short-term high $PM_{2.5}$ on 5th November (bonfire night), this was a widespread episode. The peak was too short to cause an exceedance of the 24 hour limit.

Appendix A: Monitoring Results

Table A.1 – Details of Automatic Monitoring Sites

Site ID	Site Name	Site Type	X OS Grid Ref (Easting)	Y OS Grid Ref (Northing)	Pollutants Monitored	In AQMA? Which AQMA?	Monitoring Technique	Distance to Relevant Exposure (m) (1)	Distance to kerb of nearest road (m) (2)	Inlet Height (m)
CM2	Guildhall	Roadside	375111	164857	NO_2	YES (Bath)	Chemiluminescent	1	2	1.3
CM3	Windsor Bridge	Roadside	373593	164861	NO_2 , PM_{10}	YES (Bath)	Chemiluminescent BAM1020	2	4	2.0
CM4	Chelsea House	Roadside	375419	165853	NO_2 , PM_{10}, $PM_{2.5}$	YES (Bath)	Chemiluminescent BAM1020 BAM1020 (smart heated)	0	15	2.0
CM8	Bath A4 Roadside	Roadside	375394	165824	NO_2 Benzene PM_{10}	YES (Bath)	Chemiluminescent Pumped BTX tubes BAM1020	3.5	3.5	1.9

Notes:

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

(2) N/A if not applicable

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

Diffusion Tube ID	Site Name	Site Type	X OS Grid Ref (Easting)	Y OS Grid Ref (Northing)	Pollutants Monitored	In AQMA? Which AQMA?	Distance to Relevant Exposure (m) (1)	Distance to kerb of nearest road (m) (2)	Tube Co-located with a Continuous Analyser?	Tube Height (m)
DT003	Bath - Broad St	Roadside	374992	165173	NO2	Yes (Bath)	1.7	1.3	No	2.6
DT004	Bath - George St	Kerbside	374899	165159	NO2	Yes (Bath)	3.0	1.0	No	2.3
DT005	Bath - Gay St - Top	Roadside	374797	165161	NO2	Yes (Bath)	3.0	1.0	No	2.6
DT008	Bath - Windsor Bridge	Roadside	373518	165124	NO2	Yes (Bath)	0.0	3.5	No	2.3
DT009	Bath - Upper Bristol Rd	Roadside	373993	165174	NO2	Yes (Bath)	5.0	1.0	No	2.6
DT014	Bath - Bathwick St	Roadside	375602	165365	NO2	Yes (Bath)	1.0	1.0	No	2.5
DT015	Bath - Beckford Rd	Roadside	375733	165414	NO2	Yes (Bath)	7.0	1.0	No	2.7
DT016	Bath - Warminster Rd	Roadside	376063	165492	NO2	Yes (Bath)	18.0	4.0	No	2.4
DT017a, DT017b, DT017c	Bath - Widcombe School	Roadside	375634	164406	NO2	Yes (Bath)	5.0	1.0	No	2.6
DT018	Bath - Widcombe High St	Roadside	375414	164216	NO2	Yes (Bath)	0.0	5.0	No	2.5
DT020a, DT020b, DT020c	Bath - Wells Rd	Roadside	374760	164310	NO2	Yes (Bath)	0.0	1.5	No	2.3
DT021	Bath - Wells Rd /Upper Oldfield Park	Roadside	374454	164202	NO2	Yes (Bath)	3.0	1.0	No	2.7

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)
DT023	Bath - Alexandra Park	Urban Background	375105	163991	NO2	No		n/a	No	3.3
DT026	Bath - Upper Wellsway	Roadside	373576	161908	NO2	No	0.0	3.0	No	2.0
DT034	Bath - Newbridge Rd	Roadside	373092	165106	NO2	Yes (Bath)	5.0	1.0	No	2.3
DT037a, DT037b, DT037c	Bath - Charlotte St	Roadside	374622	164994	NO2	Yes (Bath)	3.0	1.0	No	2.7
DT039	Bath - Manvers St	Roadside	375247	164591	NO2	Yes (Bath)	3.0	2.0	No	2.3
DT042	Bath - Dorchester St	Kerbside	375230	164383	NO2	Yes (Bath)	1.5	1.0	No	2.4
DT043	Bath - St. James Parade	Kerbside	375053	164426	NO2	Yes (Bath)	2.6	0.9	No	2.9
DT045	Bath - James St West	Roadside	374697	164763	NO2	Yes (Bath)	0.0	5.0	No	2.7
DT052, DT053, DT054	Bath - Walcot Terrace	Roadside	375462	165843	NO2	Yes (Bath)	0.0	3.0	No	2.5
DT055	Bath - Lambridge	Roadside	376451	166502	NO2	Yes (Bath)	-1.5	2.6	No	2.6
DT060	Bath - Victoria Buildings	Roadside	374039	164760	NO2	Yes (Bath)	3.7	0.5	No	2.5
DT062	Bath - Argyle Terrace	Roadside	373211	164743	NO2	Yes (Bath)	4.0	3.0	No	2.8

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)
DT084	Bath - Bear Flat	Roadside	374604	163806	NO2	No	5.7	1.9	No	2.3
DT085	Bath - RUH – North	Roadside	373073	165983	NO2	No	7.0	1.5	No	2.3
DT087	Bath - Oak Street	Roadside	374702	164414	NO2	Yes (Bath)	0.0	2.7	No	2.3
DT090a, DT090b, DT090c	Bath - Anglo Terrace	Roadside	375288	165758	NO2	Yes (Bath)	2.5	1.6	No	2.3
DT142	Bath - Prior Park Road	Kerbside	375513	164194	NO2	No	0.3	0.8	No	2.5
DT143	Bath - Rackfield Place	Roadside	372644	164738	NO2	No	0.3	3.6	No	2.6
DT145	Bath - Lansdown Road	Kerbside	374930	165550	NO2	Yes (Bath)	2.5	0.7	No	2.5
DT147	Bath - Terrace Walk	Roadside	375195	164735	NO2	No	0.3	1.7	No	2.7
DT148a, DT148b, DT148c	Bath - Julian Road	Roadside	374573	165523	NO2	No	0.4	2.2	No	2.5
DT149	Bath - Camden 3	Kerbside	375038	165838	NO2	No	2.0	0.4	No	2.6
DT150	Bath - Brougham Hayes	Roadside	373955	164590	NO2	No	1.9	1.3	No	2.6
DT151	Bath - Widcombe Hill	Kerbside	375598	164190	NO2	No	3.9	0.8	No	2.2

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)
DT152	Bath - Bathwick Hill	Roadside	375800	164912	NO2	No	2.0	1.0	No	2.6
DT153	Bath - North Road	Roadside	376069	165356	NO2	No	3.0	1.9	No	2.4
DT154	Bath - Bradford Road	Roadside	375529	162389	NO2	No	0.4	2.2	No	2.4
DT155	Bath - Newbridge Hill 2	Roadside	372696	165488	NO2	No	7.0	1.8	No	2.5
DT156	Bath - Corn Street	Roadside	374827	164531	NO2	No	2.4	2.6	No	2.5
DT157	Bath - Charles Street	Roadside	374664	164815	NO2	No	1.5	3.2	No	2.4
DT158	Bath - Paragon 2	Roadside	375051	165350	NO2	Yes (Bath)	5.4	1.1	No	3.0
DT159	Bath - Walcot Street	Roadside	375075	165287	NO2	No	3.0	2.5	No	2.7
DT160	Bath - North Parade Road	Roadside	375284	164694	NO2	No	6.3	1.3	No	2.6
DT165	Bath - Brassknocker Hill	Kerbside	377960	162736	NO2	No	7.0	0.8	No	2.5
DT167	Bath - Weston High Street	Roadside	372587	166629	NO2	No	0.4	1.0	No	2.5
DT168	Bath - Englishcombe Lane	Roadside	373207	163339	NO2	No	3.4	1.6	No	2.5
DT169	Bath - Eastbourne Avenue	Roadside	375667	166369	NO2	No	5.1	2.0	No	2.5

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)
DT171	Bath - Frome Road/Upper Bloomfield	Roadside	373706	162411	NO2	No	0.4	4.2	No	2.4
DT172a, DT172b, DT172c	Bath - London Road 2	Roadside	375374	165813	NO2	Yes (Bath)	0.6	3.6	No	2.5
DT173	Bath - Upper Bristol Road 2	Roadside	374362	165016	NO2	Yes (Bath)	0.6	2.2	No	2.4
DT179a, DT179b, DT179c	Bath - Upper Bristol Road 3	Roadside	373299	165093	NO2	Yes (Bath)	0.0	1.5	No	2.0
DT180a, DT180b, DT180c	Bath - Wells Road 2	Roadside	374537	163968	NO2	No	0.7	1.7	No	2.4
DT181	Bath - Wellsway	Roadside	374618	163494	NO2	No	15.0	1.2	No	2.5
DT182a, DT182b, DT182c	Bath - Gay Street - Lower	Roadside	374796	165123	NO2	Yes (Bath)	3.7	1.1	No	2.3
DT183	Bath - Chapel Row	Roadside	374712	164913	NO2	No	0.0	2.1	No	2.5
DT185	Bath - Greenway Lane	Kerbside	374712	163417	NO2	No	0.5	0.7	No	2.4
DT186	Bath - Coronation Avenue	Roadside	373170	163416	NO2	No	3.3	1.4	No	2.4
DT187	Bath - Stanley Road West	Roadside	373835	164438	NO2	No	0.2	1.7	No	2.3
DT188	Bath - Moorland Road	Roadside	373696	164343	NO2	No	0.5	3.4	No	2.6

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)
DT189	Bath - Old Newbridge Hill	Roadside	372251	165686	NO2	No	10.0	2.1	No	2.5
DT190	Bath - Church Street	Kerbside	375814	164027	NO2	No	0.0	0.9	No	2.5
DT192	Bath - Fairfield Road	Roadside	375505	166428	NO2	No	3.6	1.3	No	2.5
DT193	Bath - Granville Road	Roadside	374260	167661	NO2	No	4.5	1.5	No	2.5
DT194	Bath - Brooklyn Road	Roadside	376096	166878	NO2	No	3.5	1.0	No	2.6
DT195	Bath - Lansdown Lane	Roadside	372537	167235	NO2	No	11.0	1.9	No	2.5
DT196	Bath - Oakley	Kerbside	377133	164045	NO2	No	2.0	0.8	No	2.5
DT197	Bath - Rush Hill	Roadside	372703	162983	NO2	No	5.5	2.0	No	2.4
DT198a, DT198b, DT198c	Bath - Walcot Parade	Kerbside	375240	165739	NO2	Yes (Bath)	0.4	1.0	No	3.3
DT199	Bath - Hensley Road	Roadside	374353	163504	NO2	No	8.0	1.1	No	2.4
DT200	Bath - Millmead Road	Roadside	373375	164307	NO2	No	3.4	1.6	No	2.4
DT201	Bath - The Hollow	Roadside	373003	164250	NO2	No	1.3	2.4	No	2.5
DT202	Bath - Charlcombe	Kerbside	374636	166701	NO2	No	5.0	0.4	No	2.5

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)
DT206a, DT206b, DT206c	Bath - Park Lane	Roadside	373742	165305	NO2	No	0.5	1.8	No	2.5
DT207	Bath - Darlington Street	Roadside	375630	165132	NO2	No	4.0	1.1	No	2.5
DT209	Bath - Bellots Road	Roadside	373490	164804	NO2	No	3.5	1.5	No	2.5
DT210	Bath - Red Lion Roundabout	Roadside	373895	162254	NO2	No	0.4	1.5	No	2.4
DT211	Bath - St John's Road	Roadside	375218	165290	NO2	No	0.0	2.0	No	2.5
DT212	Bath - Oldfield Road	Roadside	374356	163985	NO2	No	5.0	1.8	No	2.4
DT213a, DT213b, DT213c	Bath - Marlborough Lane	Roadside	374262	165127	NO2	No	6.0	3.0	No	2.5
DT214a, DT214b, DT214c	Bath - Marlborough Buildings	Roadside	374354	165448	NO2	No	2.6	1.0	No	2.5
DT215a, DT215b, DT215c	Bath - Queen Parade Place	Roadside	374758	165096	NO2	No	0.3	2.6	No	2.6
DT216a, DT216b, DT216c	Bath - Monmouth Place	Roadside	374574	164958	NO2	Yes (Bath)	0.3	1.5	No	2.4
DT217a, DT217b, DT217c	Bath - Cavendish Road	Roadside	374335	165990	NO2	No	1.2	1.0	No	2.4

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)
DT218	Bath - Weston Road	Roadside	373668	165697	NO2	No	3.0	1.4	No	2.5
DT219	Bath - Morford Street	Roadside	374872	165570	NO2	No	0.0	1.5	No	2.5
DT221	Bath - Gay Street - façade	Roadside	374793	165119	NO2	No	0.2	4.4	No	2.7
DT222a, DT222b, DT222c	Bath - Anglo Terrace façade	Roadside	375231	165778	NO2	Yes (Bath)	0.5	1.8	No	2.4
DT223a, DT223b, DT223c	Bath - Canton Place	Roadside	375322	165759	NO2	Yes (Bath)	2.4	4.0	No	2.3
DT224a, DT224b, DT224c	Bath - Walcot Parade 2	Roadside	375207	165726	NO2	Yes (Bath)	0.4	1.1	No	2.4
DT225a, DT225b, DT225c	Bath - Cleveland Terrace	Kerbside	375203	165708	NO2	Yes (Bath)	2.8	0.7	No	2.4
DT226a, DT226b, DT226c	Bath - AURN	Roadside	375394	165824	NO2	Yes (Bath)	3.5	3.5	Yes	1.9
DT227a, DT227b, DT227c	Bath - Wells Road 3	Kerbside	374580	163979	NO2	No	1.1	0.4	No	2..25
DT228a, DT228b, DT228c	Bath - Lower Bristol Road 2	Roadside	374002	164754	NO2	Yes (Bath)	1.4	3.0	No	2.4
DT229a, DT229b, DT229c	Bath - Lower Bristol Road 3	Kerbside	373936	164779	NO2	Yes (Bath)	10.8	0.2	No	2.5

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)
DT230a, DT230b, DT230c	Bath - Upper Bristol Road 4	Roadside	373439	165098	NO2	Yes (Bath)	3.7	1.2	No	2.4
DT231a, DT231b, DT231c	Bath - Upper Bristol Road 5	Kerbside	373480	165125	NO2	Yes (Bath)	4.7	0.3	No	2.4
DT232a, DT232b, DT232c	Bath - Lansdown Road 3	Kerbside	374942	165391	NO2	Yes (Bath)	4.3	0.6	No	2.4
DT233a, DT233b, DT233c	Bath - Lansdown Road 4	Kerbside	374956	165359	NO2	Yes (Bath)	6.7	0.9	No	2.5
DT234a, DT234b, DT234c	Bath - Gay Street 2	Kerbside	374806	165084	NO2	Yes (Bath)	2.2	0.5	No	2.4
DT235a, DT235b, DT235c	Bath - Wells Road 4	Roadside	374694	164288	NO2	Yes (Bath)	6.0	1.3	No	2.4
DT236a, DT236b, DT236c	Bath - Pulteney Terrace	Roadside	375668	164493	NO2	No	4.7	1.6	No	2.4
DT237	Bath - Broad Street 2	Roadside	375000	165179	NO2	Yes (Bath)	0.5	1.5	No	2.4
DT238a, DT238b, DT238c	Bath - Broad Street 3	Roadside	375001	165140	NO2	Yes (Bath)	0.2	2.2	No	2.4
DT239a, DT239b, DT239c	Bath - Broad Street 4	Kerbside	375008	165145	NO2	Yes (Bath)	1.9	0.4	No	2.4

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)
DT240a, DT240b, DT240c	Bath - Bathwick Street 2	Roadside	375489	165450	NO2	Yes (Bath)	2.6	1.7	No	2.4
DT241a, DT241b, DT241c	Bath - Bathwick Street 3	Roadside	375520	165446	NO2	Yes (Bath)	2.0	1.8	No	2.5
DT242a, DT242b, DT242c	Bath - Charlotte Street 2	Roadside	374583	164974	NO2	Yes (Bath)	2.1	1.7	No	2.4
DT243a, DT243b, DT243c	Bath - Sydney Place	Roadside	375625	165312	NO2	Yes (Bath)	7.8	1.1	No	2.4
DT244	Bath - Whiteway	Roadside	372494	163165	NO2	No	3.0	1.5	No	2.3
DT245	Bath - Whiteway 2	Roadside	372401	163212	NO2	No	0.5	1.4	No	2.4
DT246a, DT246b, DT246c	Bath - Dorchester Street 2	Roadside	375186	164372	NO2	Yes (Bath)	23.0	4.9	No	2.4
DT247a, DT247b, DT247c	Bath - Monmouth Place 2	Roadside	374627	164924	NO2	Yes (Bath)	0.3	1.1	No	2.6
DT248a, DT248b, DT248c	Bath - Chapel Row 2	Roadside	374711	164931	NO2	No	0.4	1.6	No	2.4
DT276	Bath - Twerton High Street	Kerbside	372783	164624	NO2	No	0.3	0.9	No	2.5
DT278	Bath - CAZ Background 1	Urban Background	374420	165288	NO2	No		n/a	No	2.5

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)
DT279	Bath - CAZ Background 2	Urban Background	375365	165176	NO2	No		n/a	No	2.4
DT280	Bath - Background Alice Park	Urban Background	376478	166696	NO2	No		n/a	No	2.4
DT288	Bath - Victoria Buildings - façade	Roadside	374045	164760	NO2	Yes (Bath)	0.0	4.1	No	2.4
DT091	Bathampton High Street	Roadside	377683	166408	NO2	No	0.0	1.1	No	2.3
DT166	Bathampton, A36	Roadside	377543	165924	NO2	No	23.0	1.2	No	2.4
DT058	Batheaston – London Road West A	Roadside	377643	167365	NO2	No	0.0	1.0	No	2.5
DT094	Batheaston - London Road West B	Roadside	377290	167097	NO2	No	0.0	1.3	No	2.5
DT130	Batheaston - London Road West C	Roadside	377802	167456	NO2	No	0.0	1.4	No	2.5
DT163	Batheaston, A4 Box Road	Roadside	378911	167259	NO2	No	2.4	1.8	No	2.4
DT191	Batheaston - Mill Lane	Roadside	377339	167065	NO2	No	4.0	1.0	No	2.5
DT134	Farrington Gurney 2	Roadside	362891	155485	NO2	Yes (Farrington Gurney)	0.0	4.5	No	2.5

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)
DT136	Farrington Gurney 3	Roadside	362884	155790	NO2	Yes (Farrington Gurney)	0.0	1.2	No	2.1
DT138	Farrington Gurney 5	Roadside	362983	155459	NO2	Yes (Farrington Gurney)	3.0	1.9	No	2.5
DT257	Farrington Gurney 7	Roadside	363931	155313	NO2	No	1.0	1.5	No	2.3
DT033	Keynsham	Urban Background	364803	168237	NO2	No	8.0	1.0	No	2.6
DT063	Keynsham – Station Road	Roadside	365409	168846	NO2	Yes (Keynsham)	3.0	1.0	No	2.7
DT064	Keynsham – Charlton Road B	Roadside	365305	168657	NO2	Yes (Keynsham)	4.0	1.0	No	2.8
DT065	Keynsham - Charlton Rd A	Roadside	365399	168701	NO2	Yes (Keynsham)	3.0	1.0	No	2.7
DT066	Keynsham – High Street A	Roadside	365360	168815	NO2	Yes (Keynsham)	1.0	1.0	No	2.5
DT067	Keynsham - Somerfield	Roadside	365457	168496	NO2	Yes (Keynsham)	2.0	1.0	No	2.8
DT068	Keynsham - Temple St	Roadside	365489	168363	NO2	No	0.0	3.0	No	2.8
DT069	Keynsham – Rock Road	Roadside	365428	168435	NO2	No	0.0	2.0	No	3.0
DT070	Keynsham – Bath Hill	Roadside	365496	168521	NO2	Yes (Keynsham)	1.0	4.0	No	2.3

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)
DT107	Keynsham - Bath Hill South	Roadside	365710	168339	NO2	No	0.0	1.3	No	2.5
DT112	Keynsham - Ashton Way	Roadside	365375	168594	NO2	No	35.0	1.5	No	2.6
DT113	Keynsham - West View Road	Roadside	365217	168505	NO2	No	4.5	1.5	No	2.6
DT114	Keynsham - Victoria Church	Kerbside	365414	168684	NO2	Yes (Keynsham)	11.5	0.5	No	2.7
DT115	Keynsham - High Street B	Roadside	365447	168586	NO2	Yes (Keynsham)	1.8	1.1	No	2.4
DT116	Keynsham - Fish Bar	Kerbside	365462	168533	NO2	Yes (Keynsham)	5.3	0.8	No	2.3
DT141	Keynsham A4	Roadside	366921	168096	NO2	No	13.0	1.4	No	2.4
DT266	Keynsham - Avon Mill Lane	Roadside	365784	168710	NO2	No	4.5	2.1	No	2.2
DT277	Keynsham - Background	Urban Background	365622	168563	NO2	No		n/a	No	2.4
DT259	Midsomer Norton - Redfield Road	Roadside	366144	154071	NO2	No	4.3	1.1	No	2.4
DT174	Pensford 3	Roadside	361769	164034	NO2	No	2.7	1.3	No	2.5
DT258	Radstock - Frome Road	Roadside	368921	154912	NO2	No	1.2	1.4	No	2.3
DT075	Saltford - The Crown	Roadside	368375	166988	NO2	Yes (Saltford)	0.0	3.0	No	2.6

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)
DT077	Saltford - Bath Road	Roadside	368778	166687	NO2	Yes (Saltford)	0.0	2.0	No	2.2
DT096a, DT096b, DT096c	Temple Cloud 1	Roadside	362219	157923	NO2	Yes (Temple Cloud)	0.0	1.5	No	2.4
DT108a, DT108b, DT108c	Temple Cloud 2	Roadside	362179	158055	NO2	Yes (Temple Cloud)	6.2	1.3	No	2.6
DT109a, DT109b, DT109c	Temple Cloud 3	Roadside	362344	157658	NO2	Yes (Temple Cloud)	2.0	1.7	No	2.6
DT252a, DT252b, DT252c	Temple Cloud 9	Roadside	362195	158007	NO2	Yes (Temple Cloud)	0.0	1.1	No	2.4
DT253a, DT253b, DT253c	Temple Cloud 10	Roadside	362243	157846	NO2	Yes (Temple Cloud)	-2.1	3.6	No	2.3
DT254a, DT254b, DT254c	Temple Cloud 11	Roadside	362262	157799	NO2	Yes (Temple Cloud)	2.9	1.6	No	2.4
DT255a, DT255b, DT255c	Temple Cloud 12	Roadside	362284	157741	NO2	Yes (Temple Cloud)	0.0	1.2	No	2.2
DT260	Temple Cloud 14	Roadside	362289	157786	NO2	No	0.0	12.0	No	1.8
DT261	Temple Cloud 15	Roadside	362280	157781	NO2	Yes (Temple Cloud)	10.5	1.5	No	1.8
DT262	Temple Cloud 16	Roadside	362364	157756	NO2	No	0.0	16.5	No	1.8

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)
DT263	Temple Cloud 17	Roadside	362306	157719	NO2	Yes (Temple Cloud)	0.0	1.2	No	1.8
DT264	Temple Cloud 18	Roadside	362367	157638	NO2	Yes (Temple Cloud)	-1.0	3.0	No	1.8
DT284	Temple Cloud 26	Roadside	362211	157929	NO2	Yes (Temple Cloud)	0.0	8.0	No	1.6
DT268	Westfield 4	Roadside	367064	153332	NO2	No	8.0	1.0	No	2.5
DT269	Westfield 5	Roadside	367321	153823	NO2	No	8.0	2.0	No	2.4
DT270	Westfield 6	Roadside	367434	154008	NO2	No	3.0	2.0	No	2.5
DT271	Westfield 7	Roadside	368494	154742	NO2	No	8.0	1.5	No	2.4
DT032	Whitchurch	Roadside	361242	167652	NO2	No	2.7	2.1	No	2.3
DT098	Whitchurch 2	Roadside	361276	167555	NO2	No	0.0	1.3	No	2.3
DT100	Whitchurch 4	Roadside	361326	167606	NO2	No	6.0	1.6	No	2.3
DT101	Whitchurch 5	Roadside	361235	167824	NO2	No	4.0	1.6	No	2.5

Notes:

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

(2) N/A if not applicable.

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

Site ID	Site Name	X OS Grid Ref (Easting)	Y OS Grid Ref (Northing)	Site Type	Valid Data Capture for Monitoring Period (%) (1)	Valid Data Capture 2021 (%) (2)	2017	2018	2019	2020	2021
CM2	Guildhall	375111	164857	Roadside	98.2	98.2	30	29	27	19	20
CM3	Windsor Bridge	373593	164861	Roadside	97.1	97.1	33	30	29	23	23
CM4	Chelsea House	375419	165853	Roadside	99.2	99.2	29	26	22	20	18
CM8	Bath A4 Roadside	375394	165824	Roadside	99	99	-	-	29	28	27

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

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

Notes:

The annual mean concentrations are presented as µg/m^3.

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

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

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

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

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

Table A.4 – Annual Mean NO_2 Monitoring Results: Non-Automatic Monitoring (µg/m^3)

Diffusion Tube ID	Site Name	X OS Grid Ref (Easting)	Y OS Grid Ref (Northing)	Site Type	Valid Data Capture for Monitoring Period (%) (1)	Valid Data Capture 2021 (%) (2)	2017	2018	2019	2020	2021
DT003	Bath - Broad St	374992	165173	Roadside	99.7	99.7	-	36	37	27	29
DT004	Bath - George St	374899	165159	Kerbside	90.1	90.1	36	30	30	22	22
DT005	Bath - Gay St - Top	374797	165161	Roadside	99.7	99.7	36	32	31	22	23
DT008	Bath - Windsor Bridge	373518	165124	Roadside	99.7	99.7	34	31	28	23	23
DT009	Bath - Upper Bristol Rd	373993	165174	Roadside	99.7	99.7	**40**	33	31	26	24
DT014	Bath - Bathwick St	375602	165365	Roadside	99.7	99.7	**44**	36	33	29	20
DT015	Bath - Beckford Rd	375733	165414	Roadside	92	92	34	30	27	22	20
DT016	Bath - Warminster Rd	376063	165492	Roadside	99.7	99.7	36	33	31	24	22
DT017a, DT017b, DT017c	Bath - Widcombe School	375634	164406	Roadside	99.7	99.7	35	31	29	23	20
DT018	Bath - Widcombe High St	375414	164216	Roadside	99.7	99.7	28	24	23	18	17
DT020a, DT020b, DT020c	Bath - Wells Rd	374760	164310	Roadside	99.7	99.7	**52**	**49**	**45**	40	**43**

Diffusion Tube ID	Site Name	X OS Grid Ref (Easting)	Y OS Grid Ref (Northing)	Site Type	Valid Data Capture for Monitoring Period (%) [1]	Valid Data Capture 2021 (%) [2]	2017	2018	2019	2020	2021
DT021	Bath - Wells Rd /Upper Oldfield Park	374454	164202	Roadside	99.7	99.7	**43**	**43**	37	26	28
DT023	Bath - Alexandra Park	375105	163991	Urban Background	99.7	99.7	13	12	11	8	9
DT026	Bath - Upper Wellsway	373576	161908	Roadside	99.7	99.7	32	31	27	21	23
DT034	Bath - Newbridge Rd	373092	165106	Roadside	92	92	38	33	31	23	22
DT037a, DT037b, DT037c	Bath - Charlotte St	374622	164994	Roadside	99.7	99.7	38	33	31	26	24
DT039	Bath - Manvers St	375247	164591	Roadside	99.7	99.7	38	29	33	24	25
DT042	Bath - Dorchester St	375230	164383	Kerbside	99.7	99.7	**58**	**45**	**48**	36	**41**
DT043	Bath - St. James Parade	375053	164426	Kerbside	99.7	99.7	**46**	**40**	39	31	35
DT045	Bath - James St West	374697	164763	Roadside	99.7	99.7	**40**	31	28	22	24
DT052, DT053, DT054	Bath - 14-16 Walcott Terrace	375462	165843	Roadside	99.7	99.7	**44**	37	36	29	25
DT055	Bath - Lambridge	376451	166502	Roadside	92	92	**46**	39.7	36	29	28
DT060	Bath - Victoria Buildings	374039	164760	Roadside	81.9	81.9	**46**	**41**	**44**	38	40

Diffusion Tube ID	Site Name	X OS Grid Ref (Easting)	Y OS Grid Ref (Northing)	Site Type	Valid Data Capture for Monitoring Period (%) [1]	Valid Data Capture 2021 (%) [2]	2017	2018	2019	2020	2021
DT062	Bath - Argyle Terrace	373211	164743	Roadside	99.7	99.7	**45**	39	37	33	34
DT084	Bath - Bear Flat	374604	163806	Roadside	92.3	92.3	33	35	30	23	24
DT085	Bath - RUH – North	373073	165983	Roadside	90.1	90.1	32	28	26	23	22
DT087	Bath - Oak Street	374702	164414	Roadside	99.7	99.7	33	31	29	23	22
DT090a, DT090b, DT090c	Bath - Anglo Terrace	375288	165758	Roadside	99.7	99.7	**57**	**56**	**50**	38	33
DT142	Bath - Prior Park Road	375513	164194	Kerbside	90.4	90.4	**41**	34	33	27	23
DT143	Bath - Rackfield Place	372644	164738	Roadside	99.7	99.7	32	27	26	22	21
DT145	Bath - Lansdown Road	374930	165550	Kerbside	99.7	99.7	33	31	26	21	20
DT147	Bath - Terrace Walk	375195	164735	Roadside	99.7	99.7	34	29	29	20	20
DT148a, DT148b, DT148c	Bath - Julian Road	374573	165523	Roadside	99.7	99.7	-	27	26	20	20
DT149	Bath - Camden 3	375038	165838	Kerbside	84.3	84.3	-	31	25	21	19
DT150	Bath - Brougham Hayes	373955	164590	Roadside	99.7	99.7	-	27	29	23	22

Diffusion Tube ID	Site Name	X OS Grid Ref (Easting)	Y OS Grid Ref (Northing)	Site Type	Valid Data Capture for Monitoring Period (%) [1]	Valid Data Capture 2021 (%) [2]	2017	2018	2019	2020	2021
DT151	Bath - Widcombe Hill	375598	164190	Kerbside	99.7	99.7	-	32	27	21	19
DT152	Bath - Bathwick Hill	375800	164912	Roadside	81.9	81.9	-	26	25	19	18
DT153	Bath - North Road	376069	165356	Roadside	92.3	92.3	-	19	17	13	13
DT154	Bath - Bradford Road	375529	162389	Roadside	99.7	99.7	-	30	28	21	21
DT155	Bath - Newbridge Hill 2	372696	165488	Roadside	84.3	84.3	-	19	18	12	12
DT156	Bath - Corn Street	374827	164531	Roadside	99.7	99.7	-	28	28	21	22
DT157	Bath - Charles Street	374664	164815	Roadside	91.5	91.5	-	29	27	22	22
DT158	Bath - Paragon 2	375051	165350	Roadside	91.5	91.5	-	33	32	24	25
DT159	Bath - Walcot Street	375075	165287	Roadside	99.7	99.7	-	27	26	20	19
DT160	Bath - North Parade Road	375284	164694	Roadside	99.7	99.7	-	31	34	23	23
DT165	Bath - Brassknocker Hill	377960	162736	Kerbside	92	92	-	**40.2**	37	28	26
DT167	Bath - Weston High Street	372587	166629	Roadside	99.7	99.7	-	24	22	17	18

Diffusion Tube ID	Site Name	X OS Grid Ref (Easting)	Y OS Grid Ref (Northing)	Site Type	Valid Data Capture for Monitoring Period (%) [1]	Valid Data Capture 2021 (%) [2]	2017	2018	2019	2020	2021
DT168	Bath - Englishcombe Lane	373207	163339	Roadside	90.1	90.1	-	16	14	11	11
DT169	Bath - Eastbourne Avenue	375667	166369	Roadside	99.7	99.7	-	26	23	18	18
DT171	Bath - Frome Road/Upper Bloomfield	373706	162411	Roadside	99.7	99.7	-	32	27	22	23
DT172a, DT172b, DT172c	Bath - London Road 2	375374	165813	Roadside	99.7	99.7	-	**47**	**42**	35	31
DT173	Bath - Upper Bristol Road	374362	165016	Roadside	92	92	-	37	33	28	26
DT179a, DT179b, DT179c	Bath - Upper Bristol Road 3	373299	165093	Roadside	99.7	99.7	-	35	37	27	27
DT180a, DT180b, DT180c	Bath - Wells Road 2	374537	163968	Roadside	99.7	99.7	-	35	35	31	30
DT181	Bath - Wellsway	374618	163494	Roadside	99.7	99.7	-	36	33	27	25
DT182a, DT182b, DT182c	Bath - Gay Street - Lower	374796	165123	Roadside	99.7	99.7	-	**42**	**42**	30	33
DT183	Bath - Chapel Row	374712	164913	Roadside	99.7	99.7	-	30	30	22	26
DT185	Bath - Greenway Lane	374712	163417	Kerbside	92	92	-	19	16	12	11

Diffusion Tube ID	Site Name	X OS Grid Ref (Easting)	Y OS Grid Ref (Northing)	Site Type	Valid Data Capture for Monitoring Period (%) [1]	Valid Data Capture 2021 (%) [2]	2017	2018	2019	2020	2021
DT186	Bath - Coronation Avenue	373170	163416	Roadside	92	92	-	20	20	16	15
DT187	Bath – Stanley Road West	373835	164438	Roadside	90.4	90.4	-	24	23	19	18
DT188	Bath - Moorland Road	373696	164343	Roadside	92	92	-	25	22	19	17
DT189	Bath - Old Newbridge Hill	372251	165686	Roadside	92	92	-	29	29	23	25
DT190	Bath - Church Street	375814	164027	Kerbside	90.4	90.4	-	14	13	11	11
DT192	Bath - Fairfield Road	375505	166428	Roadside	99.7	99.7	-	20	16	14	12
DT193	Bath - Granville Road	374260	167661	Roadside	99.7	99.7	-	11	9	7	8
DT194	Bath - Brooklyn Road	376096	166878	Roadside	91.5	91.5	-	18	16	13	12
DT195	Bath - Lansdown Lane	372537	167235	Roadside	92	92	-	20	21	17	19
DT196	Bath - Oakley	377133	164045	Kerbside	99.7	99.7	-	32	28	20	18
DT197	Bath - Rush Hill	372703	162983	Roadside	99.7	99.7	-	25	24	19	20
DT198a, DT198b, DT198c	Bath - Walcot Parade	375240	165739	Kerbside	99.7	99.7	-	**56**	**50**	**41**	38

Diffusion Tube ID	Site Name	X OS Grid Ref (Easting)	Y OS Grid Ref (Northing)	Site Type	Valid Data Capture for Monitoring Period (%) [1]	Valid Data Capture 2021 (%) [2]	2017	2018	2019	2020	2021
DT199	Bath - Hensley Road	374353	163504	Roadside	92	92	-	-	13	10	10
DT200	Bath - Millmead Road	373375	164307	Roadside	99.7	99.7	-	-	15	13	13
DT201	Bath - The Hollow	373003	164250	Roadside	92.3	92.3	-	-	24	21	21
DT202	Bath - Charlcombe	374636	166701	Kerbside	99.7	99.7	-	-	14	11	10
DT206a, DT206b, DT206c	Bath - Park Lane	373742	165305	Roadside	99.7	99.7	-	-	31	23	24
DT207	Bath - Darlington Street	375630	165132	Roadside	99.7	99.7	-	-	38	32	27
DT209	Bath - Bellots Road	373490	164804	Roadside	99.7	99.7	-	-	19	15	15
DT210	Bath - Red Lion Roundabout	373895	162254	Roadside	90.4	90.4	-	-	33	28	28
DT211	Bath - St John's Road	375218	165290	Roadside	90.1	90.1	-	-	21	16	14
DT212	Bath - Oldfield Road	374356	163985	Roadside	99.7	99.7	-	-	19	14	14
DT213a, DT213b, DT213c	Bath - Marlborough Lane	374262	165127	Roadside	99.7	99.7	-	-	21	19	18

Diffusion Tube ID	Site Name	X OS Grid Ref (Easting)	Y OS Grid Ref (Northing)	Site Type	Valid Data Capture for Monitoring Period (%) [1]	Valid Data Capture 2021 (%) [2]	2017	2018	2019	2020	2021
DT214a, DT214b, DT214c	Bath - Marlborough Buildings	374354	165448	Roadside	99.7	99.7	-	-	20	18	16
DT215a, DT215b, DT215c	Bath - Queen Parade Place	374758	165096	Roadside	92	92	-	-	18	14	15
DT216a, DT216b, DT216c	Bath - Monmouth Place	374574	164958	Roadside	90.4	90.4	-	-	26	26	24
DT217a, DT217b, DT217c	Bath - Cavendish Road	374335	165990	Roadside	99.7	99.7	-	-	17	16	14
DT218	Bath - Weston Road	373668	165697	Roadside	99.7	99.7	-	-	19	17	15
DT219	Bath - Morford Street	374872	165570	Roadside	99.7	99.7	-	-	21	19	18
DT221	Bath - Gay Street - façade	374793	165119	Roadside	99.7	99.7	-	-	36	25	28
DT222a, DT222b, DT222c	Bath - Anglo Terrace façade	375231	165778	Roadside	99.7	99.7	-	-	**49**	**41**	38
DT223a, DT223b, DT223c	Bath - Canton Place	375322	165759	Roadside	92.3	92.3	-	-	37	33	26
DT224a, DT224b, DT224c	Bath - Walcot Parade 2	375207	165726	Roadside	99.7	99.7	-	-	**55**	**44**	**43**

Diffusion Tube ID	Site Name	X OS Grid Ref (Easting)	Y OS Grid Ref (Northing)	Site Type	Valid Data Capture for Monitoring Period (%) [1]	Valid Data Capture 2021 (%) [2]	2017	2018	2019	2020	2021
DT225a, DT225b, DT225c	Bath - Cleveland Terrace	375203	165708	Kerbside	92	92	-	-	37	32	32
DT226a, DT226b, DT226c	Bath - AURN	375394	165824	Roadside	99.7	99.7	-	-	32	29	27
DT227a, DT227b, DT227c	Bath - Wells Road 3	374580	163979	Kerbside	99.7	99.7	-	-	**40**	31	32
DT228a, DT228b, DT228c	Bath - Lower Bristol Road 2	374002	164754	Roadside	99.7	99.7	-	-	29	27	25
DT229a, DT229b, DT229c	Bath - Lower Bristol Road 3	373936	164779	Kerbside	99.7	99.7	-	-	36	28	30
DT230a, DT230b, DT230c	Bath - Upper Bristol Road 4	373439	165098	Roadside	99.7	99.7	-	-	**50**	35	35
DT231a, DT231b, DT231c	Bath - Upper Bristol Road 5	373480	165125	Kerbside	99.7	99.7	-	-	**41**	33	32
DT232a, DT232b, DT232c	Bath - Lansdown Road 3	374942	165391	Kerbside	99.7	99.7	-	-	29	24	23
DT233a, DT233b, DT233c	Bath - Lansdown Road 4	374956	165359	Kerbside	99.7	99.7	-	-	28	22	23
DT234a, DT234b, DT234c	Bath - Gay Street 2	374806	165084	Kerbside	90.1	90.1	-	-	39.8	32	36

Diffusion Tube ID	Site Name	X OS Grid Ref (Easting)	Y OS Grid Ref (Northing)	Site Type	Valid Data Capture for Monitoring Period (%) [1]	Valid Data Capture 2021 (%) [2]	2017	2018	2019	2020	2021
DT235a, DT235b, DT235c	Bath - Wells Road 4	374694	164288	Roadside	90.4	90.4	-	-	37	32	35
DT236a, DT236b, DT236c	Bath - Pulteney Terrace	375668	164493	Roadside	99.7	99.7	-	-	30	23	21
DT237	Bath - Broad Street 2	375000	165179	Roadside	90.1	90.1	-	-	35	25	31
DT238a, DT238b, DT238c	Bath - Broad Street 3	375001	165140	Roadside	99.7	99.7	-	-	34	26	29
DT239a, DT239b, DT239c	Bath - Broad Street 4	375008	165145	Kerbside	99.7	99.7	**48**	-	37	27	32
DT240a, DT240b, DT240c	Bath - Bathwick Street 2	375489	165450	Roadside	99.7	99.7	-	-	30	23	18
DT241a, DT241b, DT241c	Bath - Bathwick Street 3	375520	165446	Roadside	99.7	99.7	-	-	24	18	15
DT242a, DT242b, DT242c	Bath - Charlotte Street 2	374583	164974	Roadside	99.7	99.7	-	-	24	21	19
DT243a, DT243b, DT243c	Bath - Sydney Place	375625	165312	Roadside	99.7	99.7	-	-	30	25	21
DT244	Bath - Whiteway	372494	163165	Roadside	90.1	90.1	-	-	18	16	17

Diffusion Tube ID	Site Name	X OS Grid Ref (Easting)	Y OS Grid Ref (Northing)	Site Type	Valid Data Capture for Monitoring Period (%) [1]	Valid Data Capture 2021 (%) [2]	2017	2018	2019	2020	2021
DT245	Bath - Whiteway 2	372401	163212	Roadside	99.7	99.7	-	-	25	20	20
DT246a, DT246b, DT246c	Bath - Dorchester Street 2	375186	164372	Roadside	91.8	91.8	-	-	39	30	31
DT247a, DT247b, DT247c	Bath - Monmouth Place 2	374627	164924	Roadside	99.7	99.7	-	-	30	27	26
DT248a, DT248b, DT248c	Bath - Chapel Row 2	374711	164931	Roadside	99.7	99.7	-	-	38	29	37
DT276	Bath - Twerton High Street	372783	164624	Kerbside	100	42.3	-	-	-	-	30
DT278	Bath - CAZ Background 1	374420	165288	Urban Background	100	34.1	-	-	-	-	11
DT279	Bath - CAZ Background 2	375365	165176	Urban Background	100	34.1	-	-	-	-	11
DT280	Bath - Background Alice Park	376478	166696	Urban Background	100	34.1	-	-	-	-	9
DT288	Bath - Victoria Buildings - façade	374045	164760	Roadside	100	26.6	-	-	-	-	29
DT091	Bathampton High Street	377683	166408	Roadside	99.7	99.7	29	26	23	17	18
DT166	Bathampton, A36	377543	165924	Roadside	91.5	91.5	-	30	28	21	19

Diffusion Tube ID	Site Name	X OS Grid Ref (Easting)	Y OS Grid Ref (Northing)	Site Type	Valid Data Capture for Monitoring Period (%) [1]	Valid Data Capture 2021 (%) [2]	2017	2018	2019	2020	2021
DT058	Batheaston – London Road West A	377643	167365	Roadside	90.1	90.1	29	26	25	20	21
DT094	Batheaston - London Road West B	377290	167097	Roadside	99.7	99.7	31	28	25	20	20
DT130	Batheaston - London Road West C	377802	167456	Roadside	99.7	99.7	32	26	26	22	20
DT163	Batheaston, A4 Box Road	378911	167259	Roadside	99.7	99.7	-	24	23	18	14
DT191	Batheaston - Mill Lane	377339	167065	Roadside	99.7	99.7	-	22	19	15	15
DT134	Farrington Gurney 2	362891	155485	Roadside	99.7	99.7	**52**	39	39	31	32
DT136	Farrington Gurney 3	362884	155790	Roadside	99.7	99.7	**42**	39.6	37	28	29
DT138	Farrington Gurney 5	362983	155459	Roadside	99.7	99.7	39	38	36	27	28
DT257	Farrington Gurney 7	363931	155313	Roadside	99.7	99.7	-	-	-	19	19
DT033	Keynsham	364803	168237	Urban Background	90.1	90.1	16	13	12	10	10
DT063	Keynsham – Station Road	365409	168846	Roadside	90.1	90.1	30	27	25	20	21
DT064	Keynsham – Charlton Road B	365305	168657	Roadside	99.7	99.7	31	28	28	24	23

Diffusion Tube ID	Site Name	X OS Grid Ref (Easting)	Y OS Grid Ref (Northing)	Site Type	Valid Data Capture for Monitoring Period (%) [1]	Valid Data Capture 2021 (%) [2]	2017	2018	2019	2020	2021
DT065	Keynsham - Charlton Rd A	365399	168701	Roadside	90.4	90.4	32	29	27	21	23
DT066	Keynsham – High Street A	365360	168815	Roadside	99.7	99.7	**40**	33	32	27	28
DT067	Keynsham - Somerfield	365457	168496	Roadside	90.1	90.1	37	32	31	24	25
DT068	Keynsham - Temple St	365489	168363	Roadside	99.7	99.7	22	21	19	15	16
DT069	Keynsham – Rock Road	365428	168435	Roadside	99.7	99.7	26	25	22	19	20
DT070	Keynsham – Bath Hill	365496	168521	Roadside	99.7	99.7	29	25	23	18	18
DT107	Keynsham - Bath Hill South	365710	168339	Roadside	99.7	99.7	37	35	33	29	28
DT112	Keynsham - Ashton Way	365375	168594	Roadside	99.7	99.7	26	23	21	19	19
DT113	Keynsham - West View Road	365217	168505	Roadside	90.1	90.1	18	17	15	12	13
DT114	Keynsham - Victoria Church	365414	168684	Kerbside	82.4	82.4	30	23	23	18	19
DT115	Keynsham - High Street B	365447	168586	Roadside	90.4	90.4	31	22	21	13	14
DT116	Keynsham - Fish Bar	365462	168533	Kerbside	90.4	90.4	28	25	22	17	17

Diffusion Tube ID	Site Name	X OS Grid Ref (Easting)	Y OS Grid Ref (Northing)	Site Type	Valid Data Capture for Monitoring Period (%) [1]	Valid Data Capture 2021 (%) [2]	2017	2018	2019	2020	2021
DT141	Keynsham A4	366921	168096	Roadside	82.1	82.1	36	33	31	23	25
DT266	Keynsham - Avon Mill Lane	365784	168710	Roadside	74.5	74.5	-	-	-	-	18
DT277	Keynsham - Background	365622	168563	Urban Background	75	24.7	-	-	-	-	11
DT259	Midsomer Norton - Redfield Road	366144	154071	Roadside	100	40.1	-	-	-	-	15
DT174	Pensford 3	361769	164034	Roadside	99.7	99.7	-	37	35	31	32
DT258	Radstock - Frome Road	368921	154912	Roadside	99.7	99.7	-	-	-	-	23
DT075	Saltford - The Crown	368375	166988	Roadside	99.7	99.7	37	31	30	23	23
DT077	Saltford - Bath Road	368778	166687	Roadside	99.7	99.7	33	28	26	21	19
DT096a, DT096b, DT096c	Temple Cloud 1	362219	157923	Roadside	99.7	99.7	**67**	**59.5**	**56**	**45**	**44**
DT108a, DT108b, DT108c	Temple Cloud 2	362179	158055	Roadside	99.7	99.7	**50**	**40.1**	39	30	30
DT109a, DT109b, DT109c	Temple Cloud 3	362344	157658	Roadside	99.7	99.7	**45**	**40**	36	28	29

Diffusion Tube ID	Site Name	X OS Grid Ref (Easting)	Y OS Grid Ref (Northing)	Site Type	Valid Data Capture for Monitoring Period (%) [1]	Valid Data Capture 2021 (%) [2]	2017	2018	2019	2020	2021
DT252a, DT252b, DT252c	Temple Cloud 9	362195	158007	Roadside	99.7	99.7	-	-	-	32	34
DT253a, DT253b, DT253c	Temple Cloud 10	362243	157846	Roadside	99.7	99.7	-	-	-	37	39
DT254a, DT254b, DT254c	Temple Cloud 11	362262	157799	Roadside	99.7	99.7	-	-	-	36	34
DT255a, DT255b, DT255c	Temple Cloud 12	362284	157741	Roadside	99.7	99.7	-	-	-	36	38
DT260	Temple Cloud 14	362289	157786	Roadside	100	40.1	-	-	-	-	10
DT261	Temple Cloud 15	362280	157781	Roadside	100	40.1	-	-	-	-	16
DT262	Temple Cloud 16	362364	157756	Roadside	100	40.1	-	-	-	-	9
DT263	Temple Cloud 17	362306	157719	Roadside	60	22.8	-	-	-	-	16
DT264	Temple Cloud 18	362367	157638	Roadside	100	40.1	-	-	-	-	21
DT284	Temple Cloud 26	362211	157929	Roadside	100	26.6	-	-	-	-	24
DT268	Westfield 4	367064	153332	Roadside	100	67.3	-	-	-	-	24
DT269	Westfield 5	367321	153823	Roadside	100	67.3	-	-	-	-	14
DT270	Westfield 6	367434	154008	Roadside	100	67.3	-	-	-	-	21

Diffusion Tube ID	Site Name	X OS Grid Ref (Easting)	Y OS Grid Ref (Northing)	Site Type	Valid Data Capture for Monitoring Period (%) (1)	Valid Data Capture 2021 (%) (2)	2017	2018	2019	2020	2021
DT271	Westfield 7	368494	154742	Roadside	100	67.3	-	-	-	-	25
DT032	Whitchurch	361242	167652	Roadside	92.3	92.3	39	33	33	28	28
DT098	Whitchurch 2	361276	167555	Roadside	82.4	82.4	35	33	30	23	24
DT100	Whitchurch 4	361326	167606	Roadside	99.7	99.7	29	27	25	20	21
DT101	Whitchurch 5	361235	167824	Roadside	99.7	99.7	**46**	37	36	31	30

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

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

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

Notes:

The annual mean concentrations are presented as µg/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.TG16 if valid data capture for the full calendar year is less than 75%. See Appendix C for details.

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

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

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

Figure A.1 - Trends in Annual Mean NO_2 Concentrations Measured at the Automatic Monitoring Sites

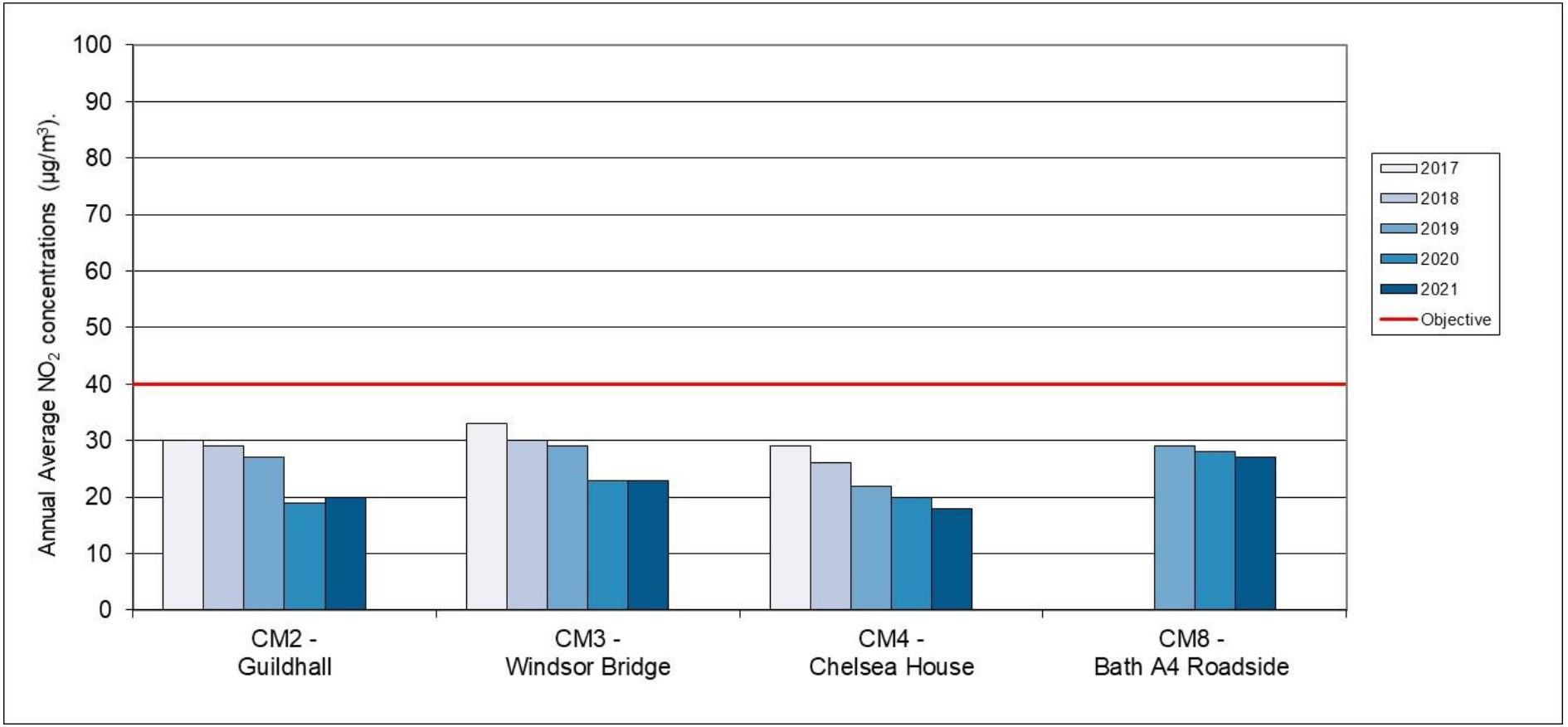


Figure A.2 – Trends in Annual Mean NO_2 Concentrations Measured at Diffusion Tube Monitoring Sites – Bath, Widcombe and Lyncombe (1)

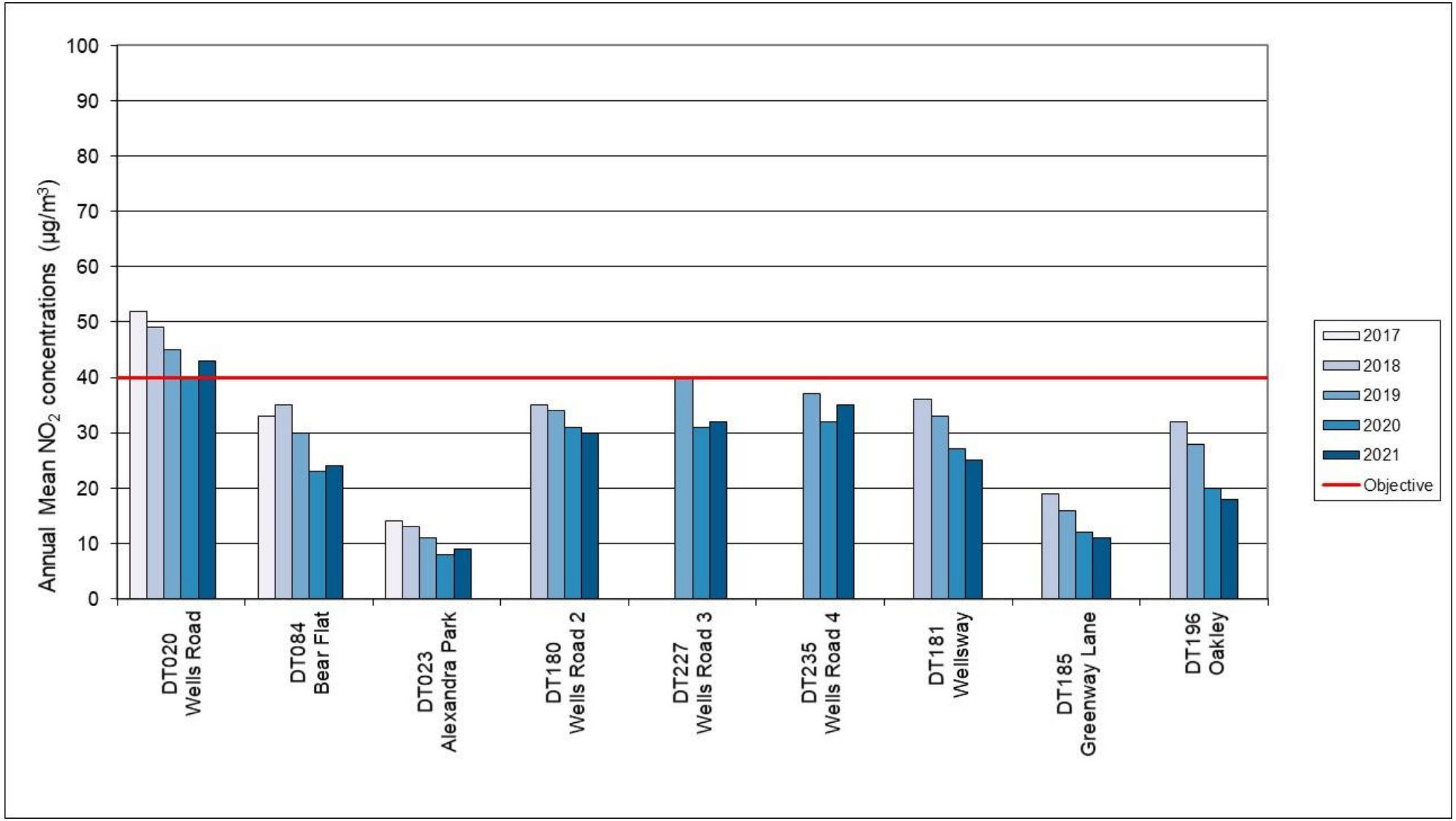


Figure A.3 – Trends in Annual Mean NO_2 Concentrations Measured at Diffusion Tube Monitoring Sites – Bath, Widcombe and Lyncombe (2)

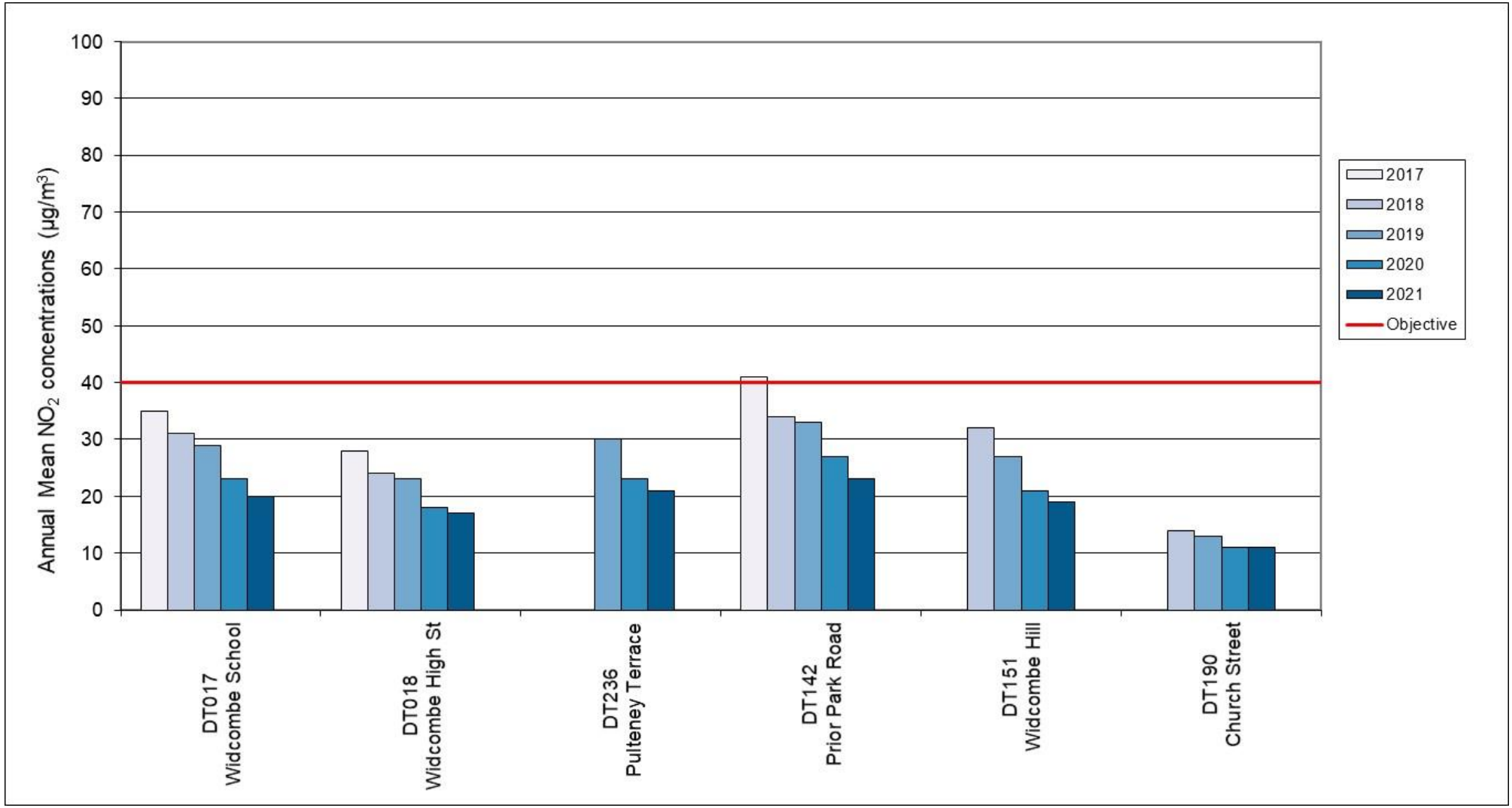


Figure A.4 – Trends in Annual Mean NO_2 Concentrations Measured at Diffusion Tube Monitoring Sites – Bath, Combe Down, Odd Down, Bathavon South and Moorlands

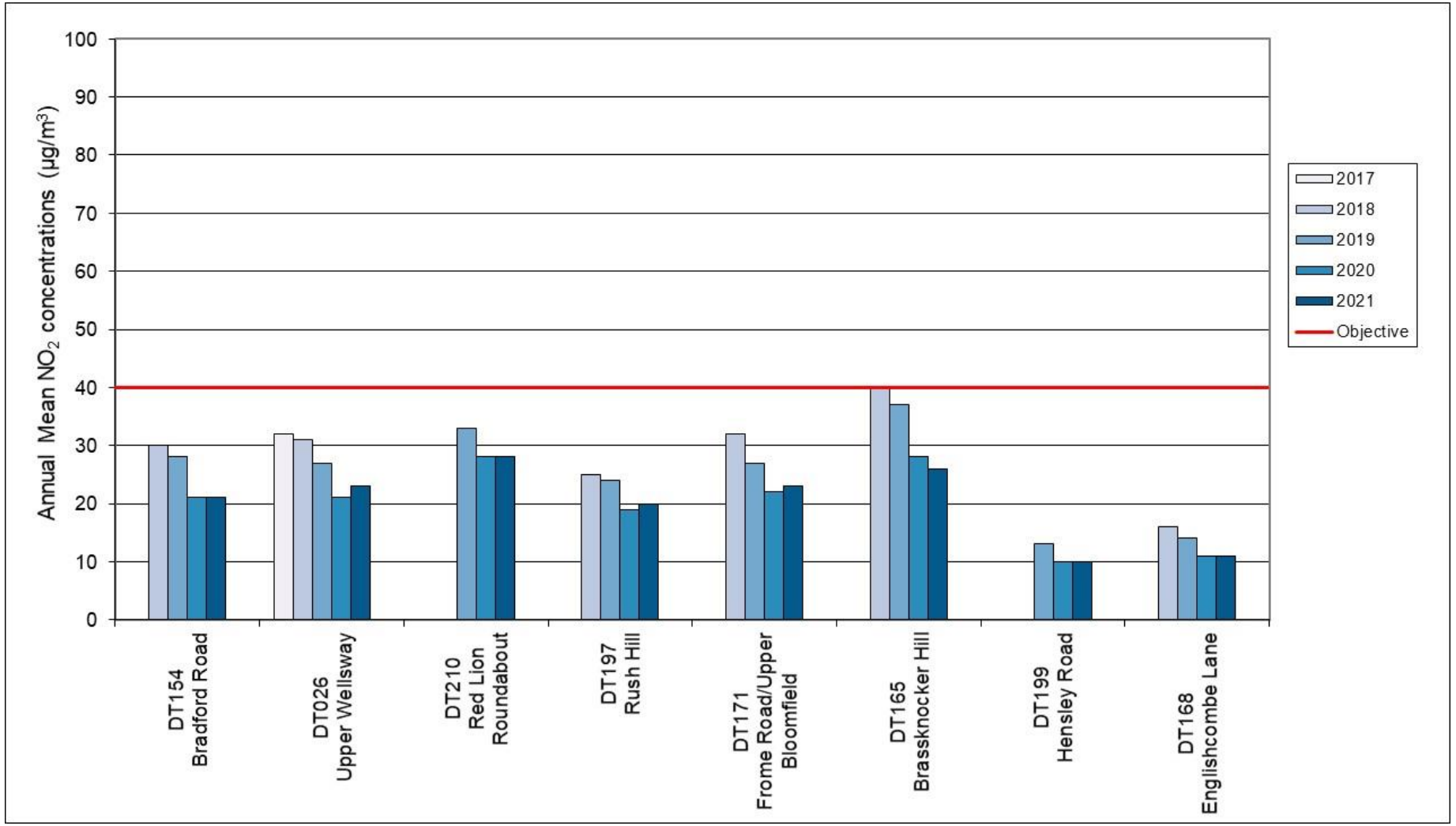


Figure A.5 – Trends in Annual Mean NO_2 Concentrations Measured at Diffusion Tube Monitoring Sites – Bath, Oldfield Park, Southdown and Twerton

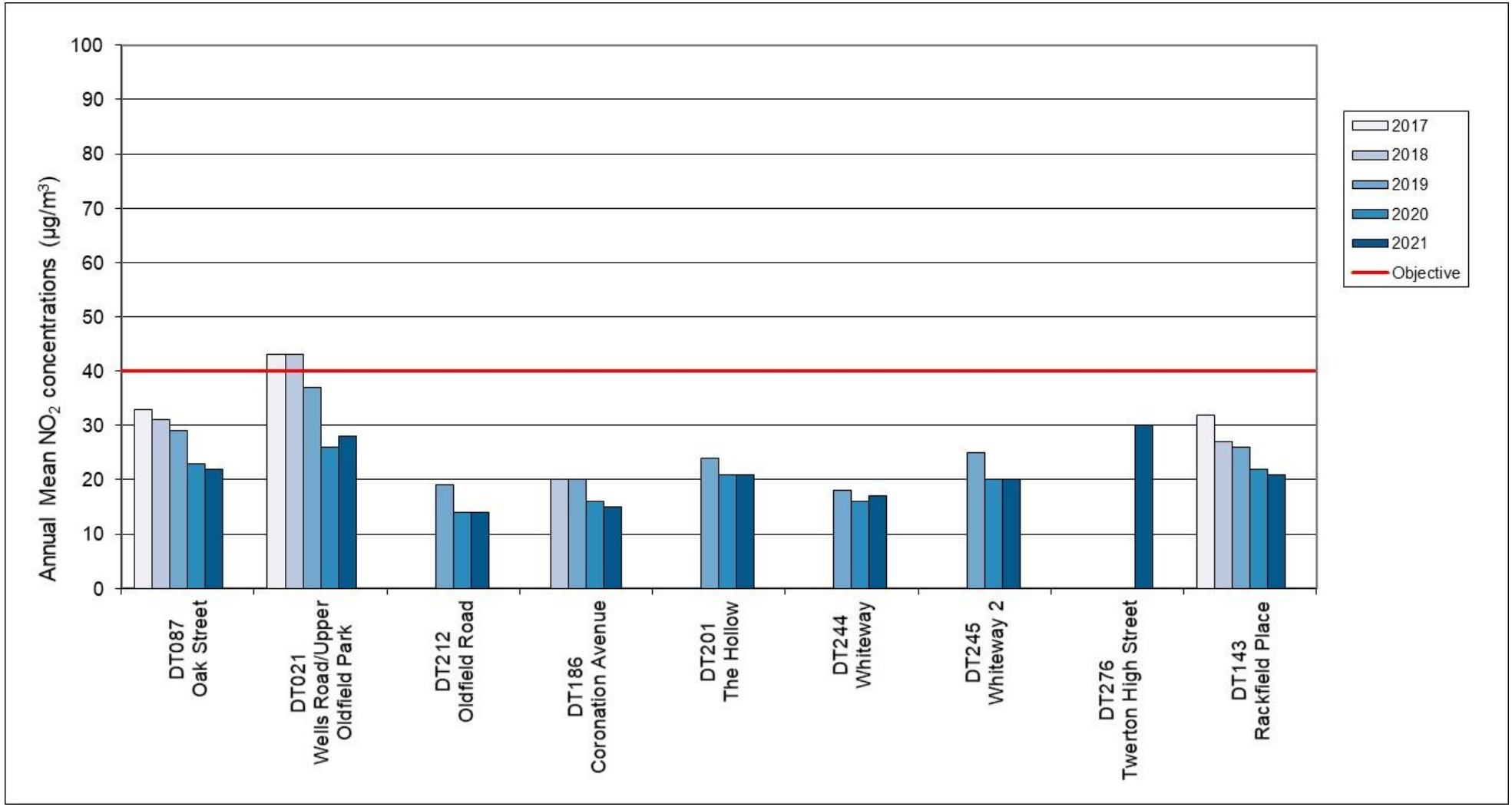


Figure A.6 – Trends in Annual Mean NO_2 Concentrations Measured at Diffusion Tube Monitoring Sites – Bath, Westmoreland

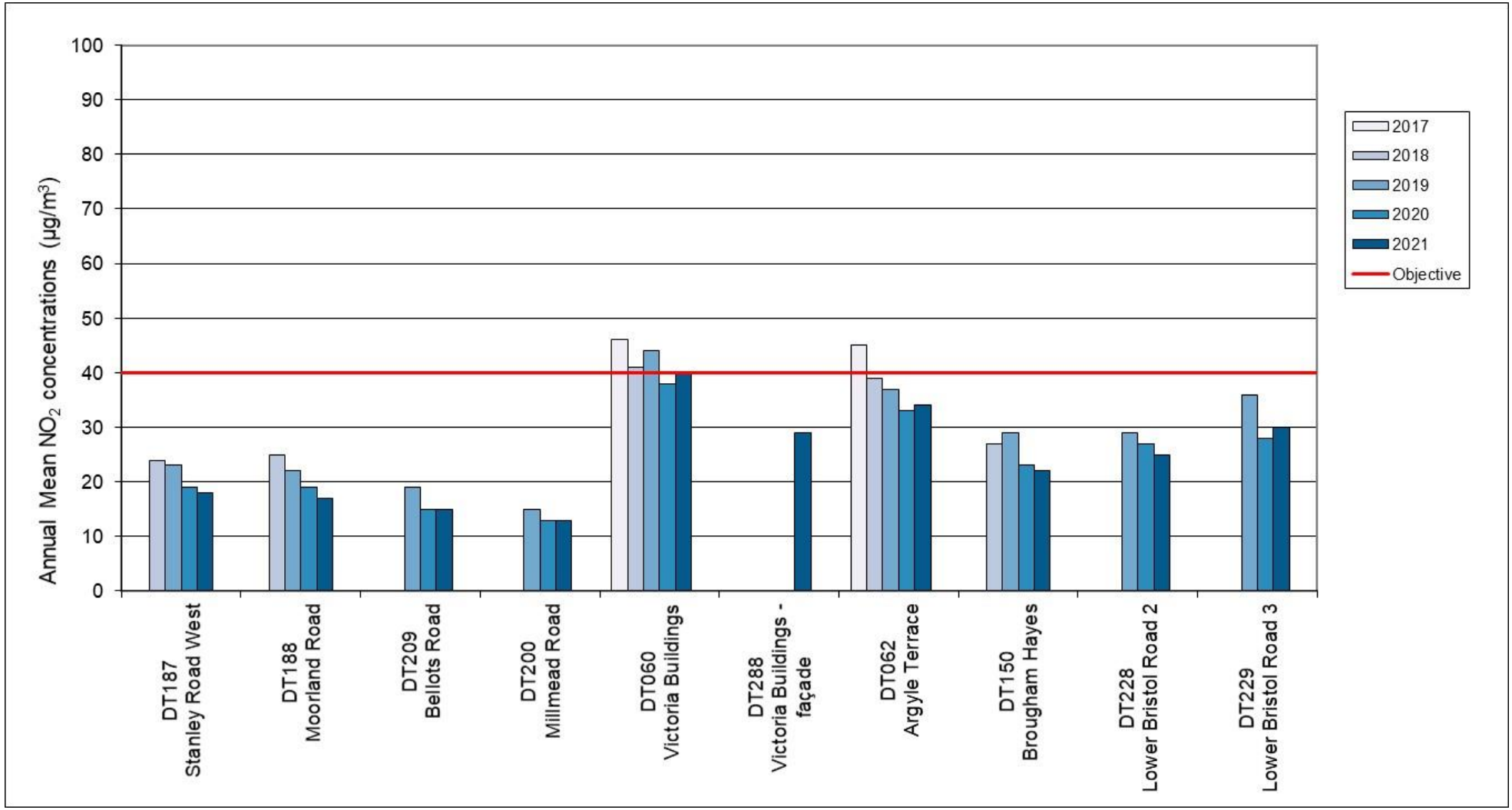


Figure A.7 – Trends in Annual Mean NO_2 Concentrations Measured at Diffusion Tube Monitoring Sites – Bath, Newbridge and Kingsmead

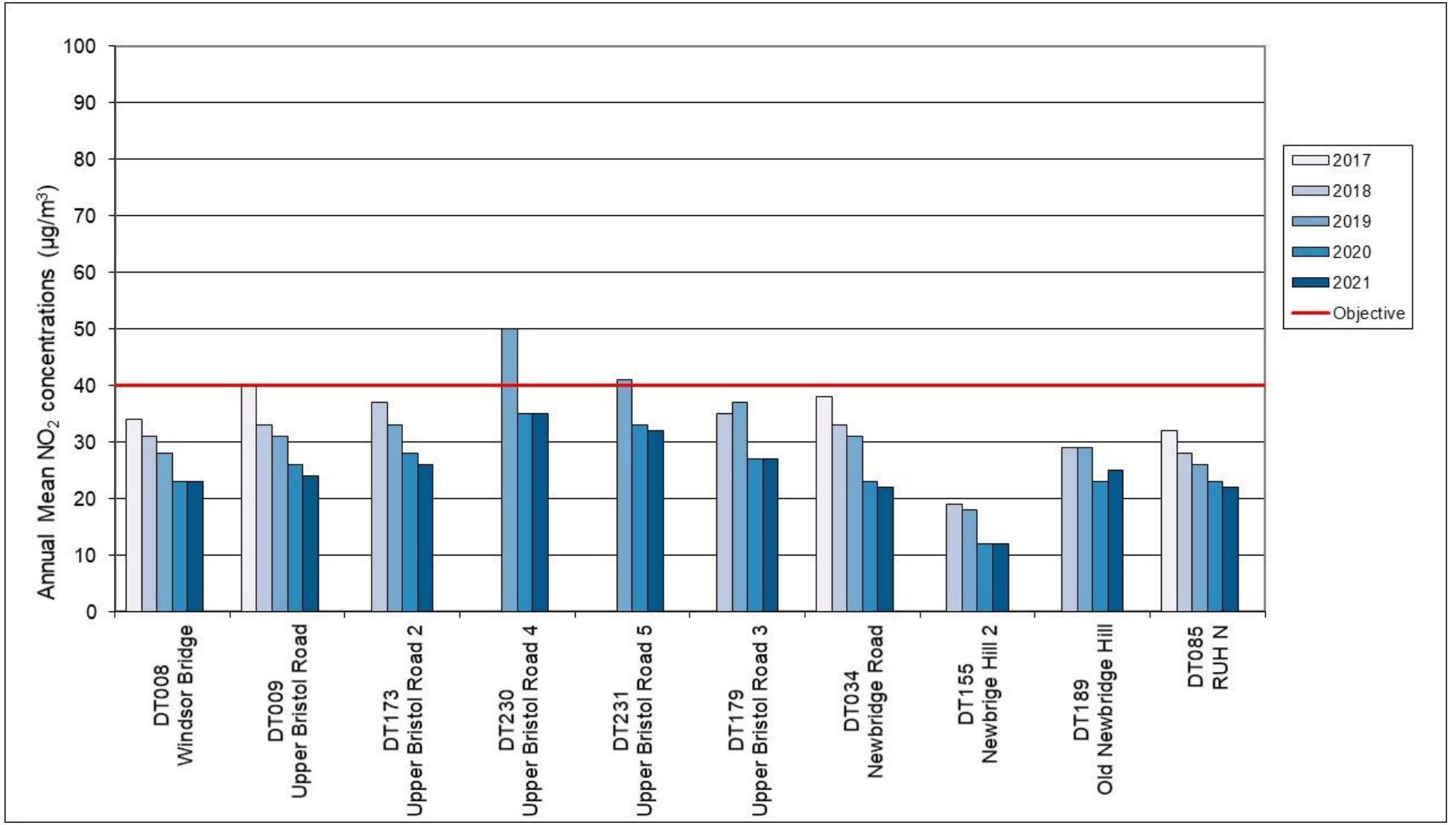


Figure A.8 – Trends in Annual Mean NO_2 Concentrations Measured at Diffusion Tube Monitoring Sites – Bath, Weston and Kingsmead

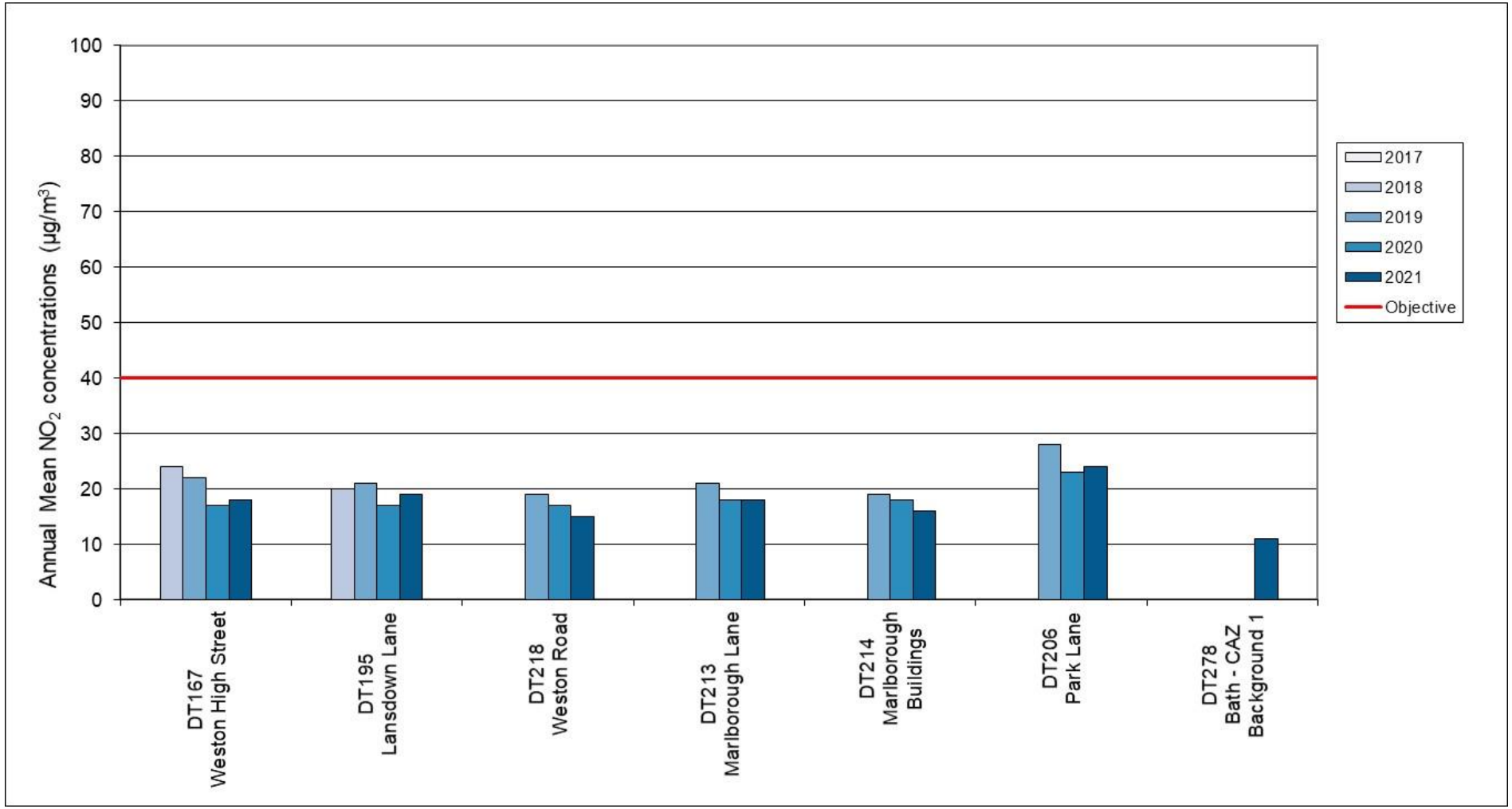


Figure A.9 – Trends in Annual Mean NO_2 Concentrations Measured at Diffusion Tube Monitoring Sites – Bath, Lansdown and Lambridge

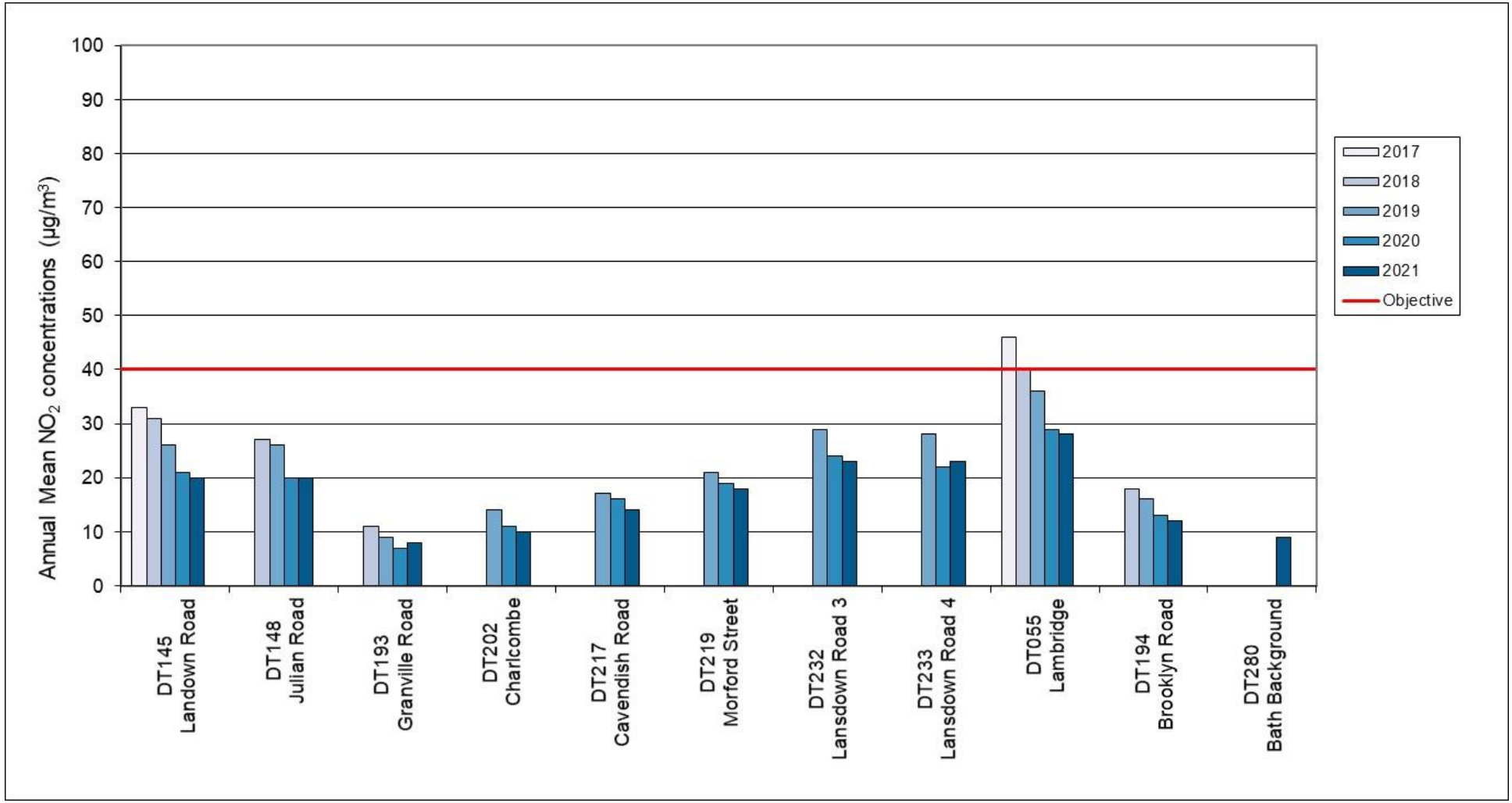


Figure A.10 – Trends in Annual Mean NO_2 Concentrations Measured at Diffusion Tube Monitoring Sites – Bath, Walcot

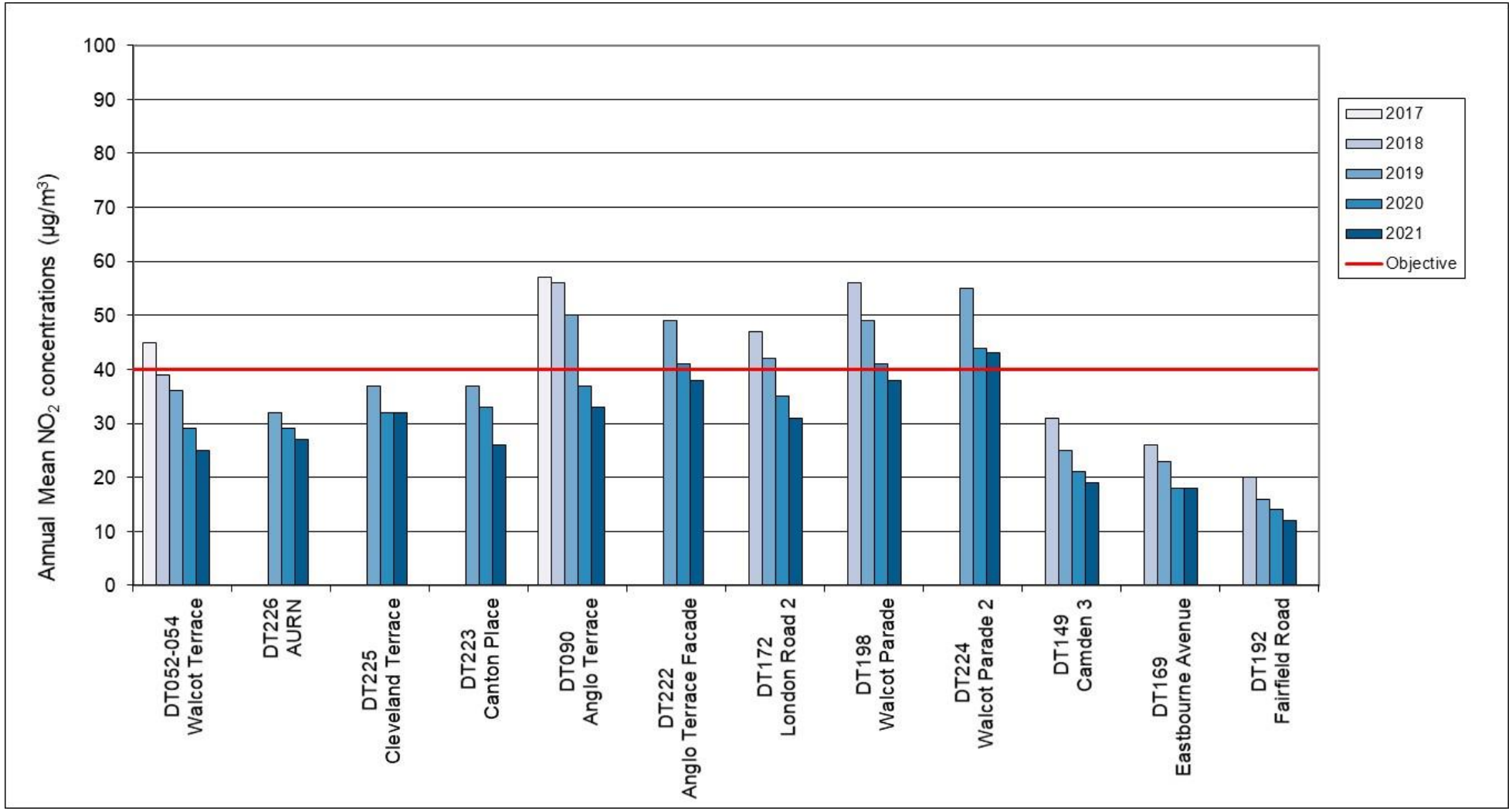


Figure A.11 – Trends in Annual Mean NO_2 Concentrations Measured at Diffusion Tube Monitoring Sites – Bath, Bathwick

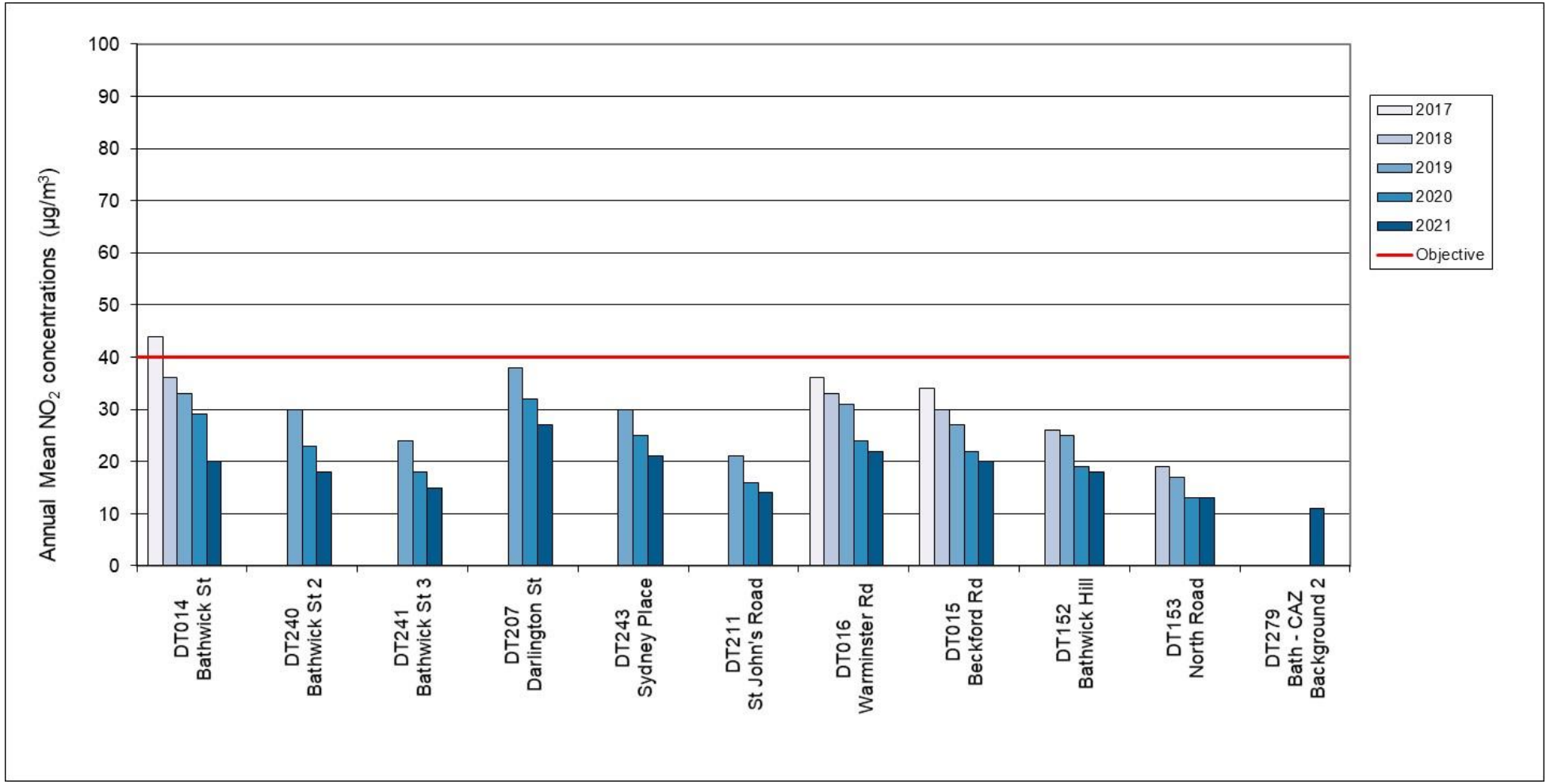


Figure A.12 – Trends in Annual Mean NO_2 Concentrations Measured at Diffusion Tube Monitoring Sites – Bath, Kingsmead (South)

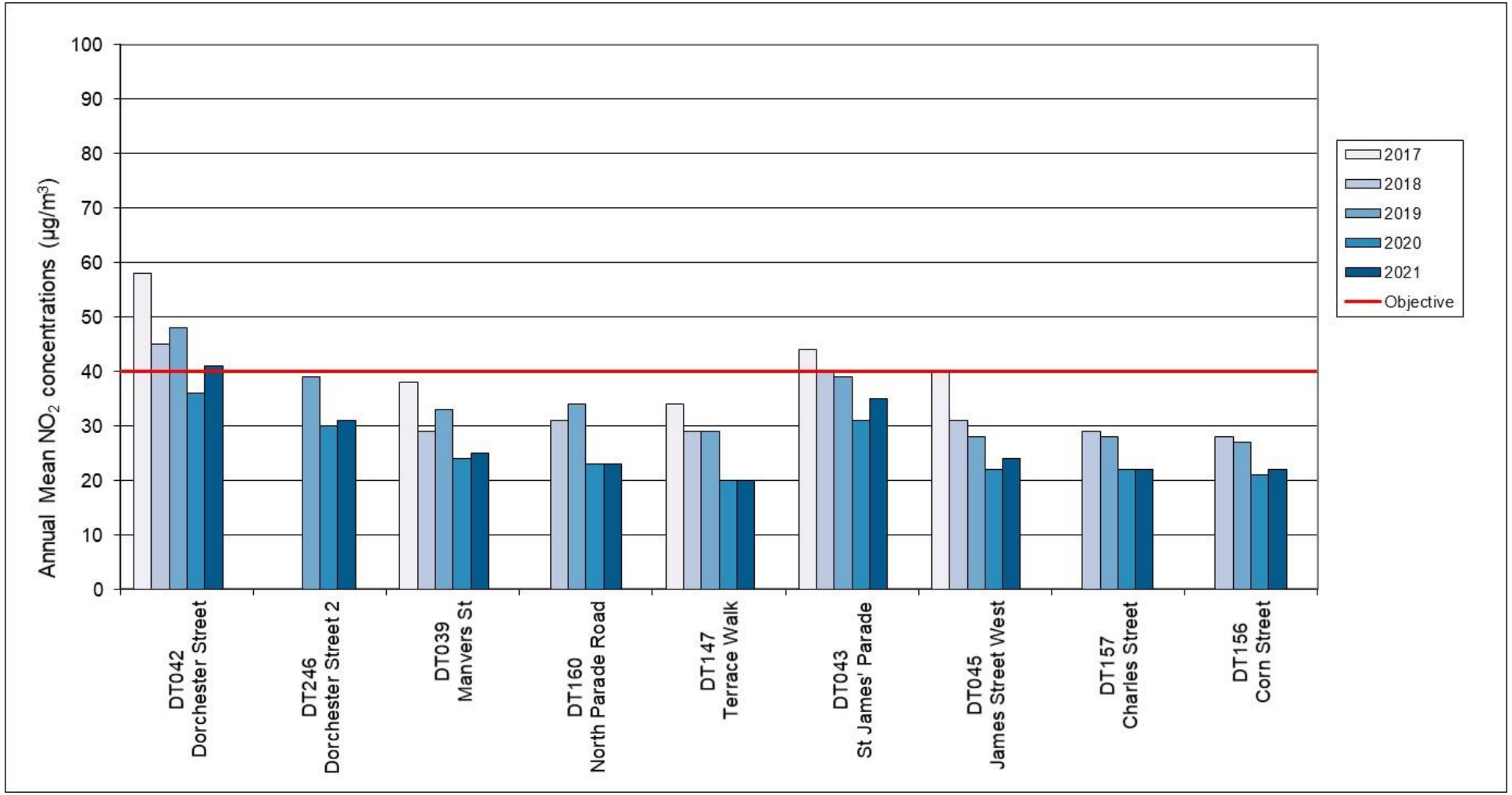


Figure A.13 – Trends in Annual Mean NO_2 Concentrations Measured at Diffusion Tube Monitoring Sites – Bath, Kingsmead (North West)

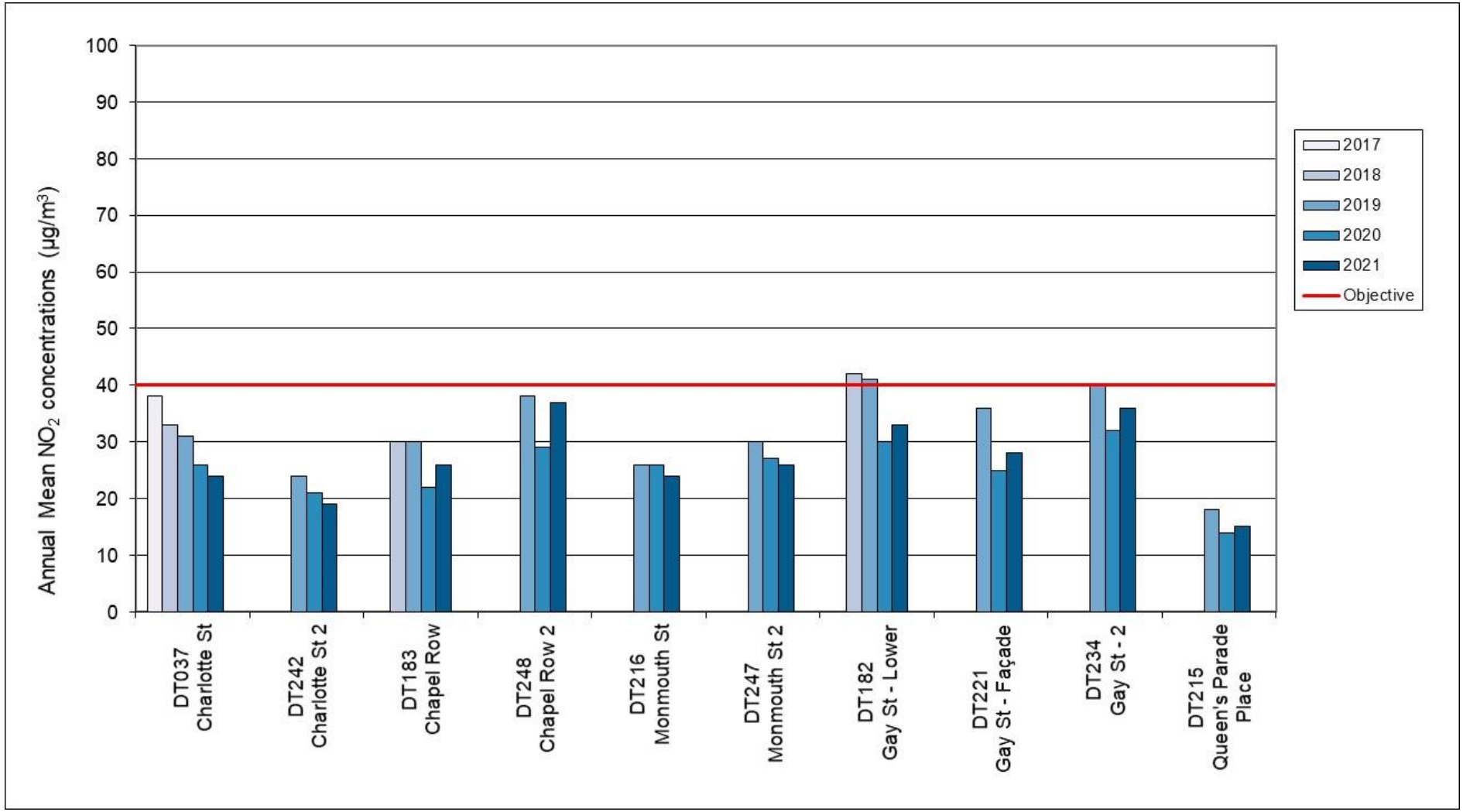


Figure A.14 – Trends in Annual Mean NO_2 Concentrations Measured at Diffusion Tube Monitoring Sites – Bath, Kingsmead (North East)

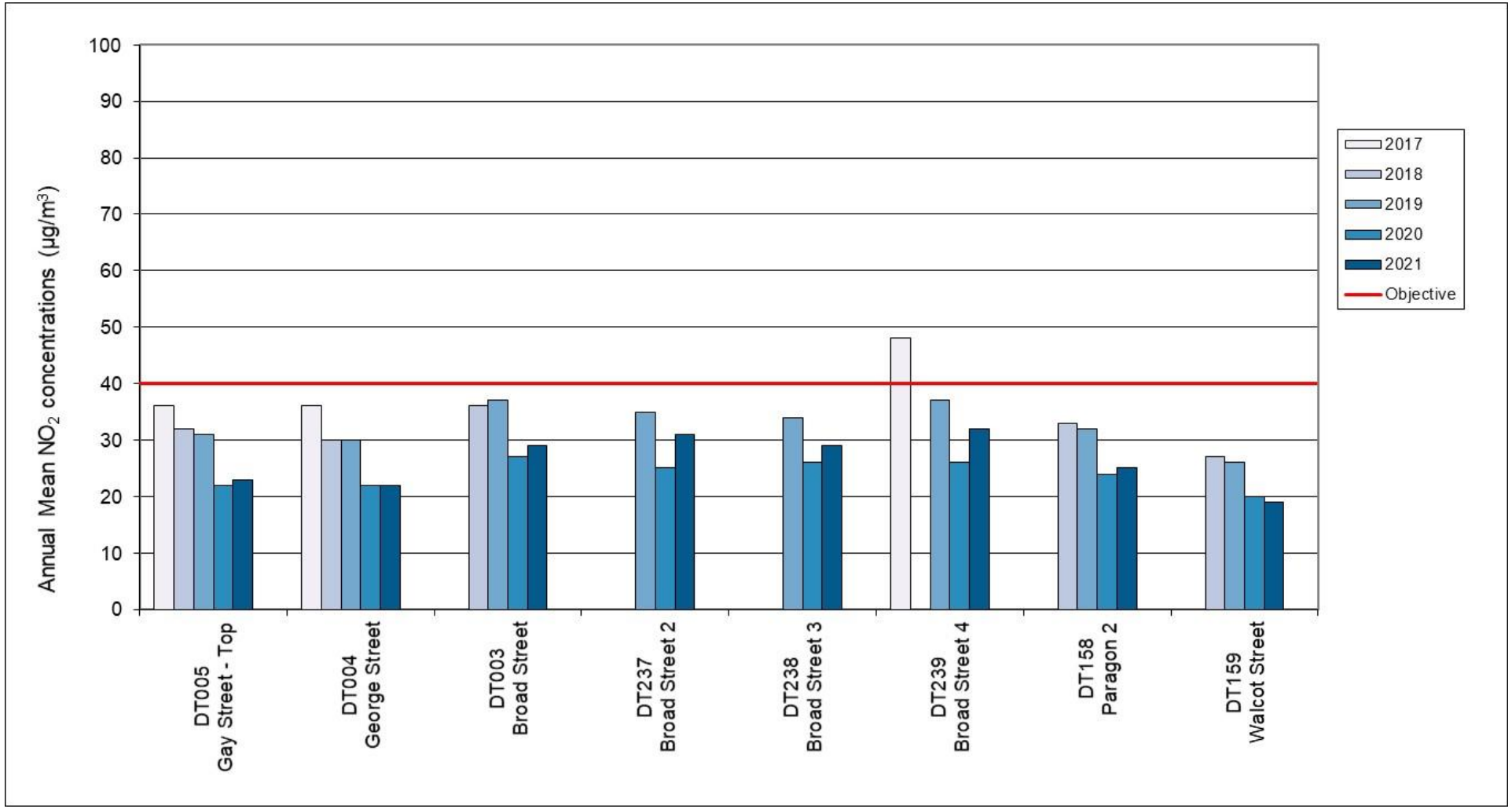


Figure A.15 – Trends in Annual Mean NO_2 Concentrations Measured at Diffusion Tube Monitoring Sites – Batheaston and Bathampton

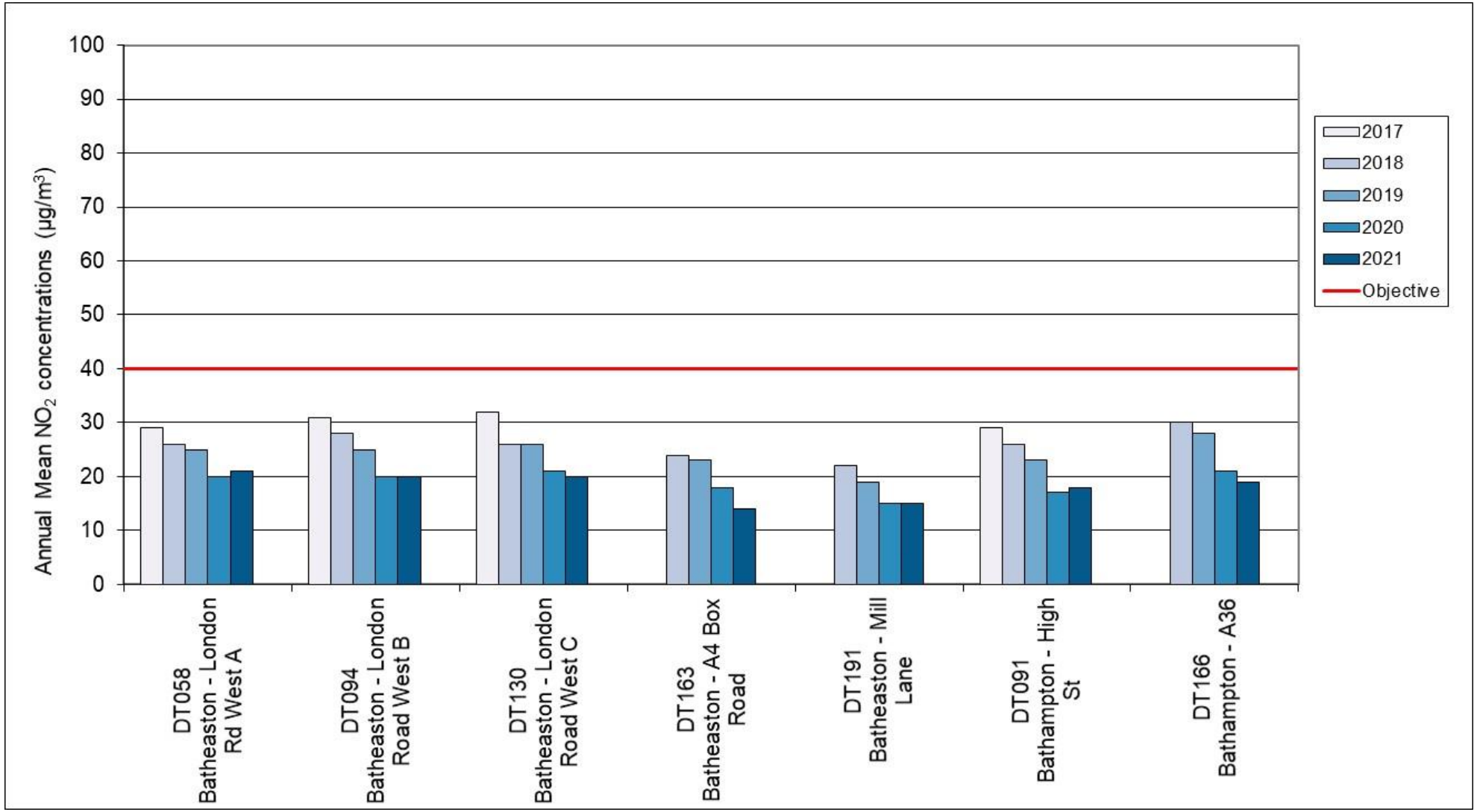


Figure A.16 – Trends in Annual Mean NO_2 Concentrations Measured at Diffusion Tube Monitoring Sites – Westfield, Radstock, Peasedown St John and Farrington Gurney

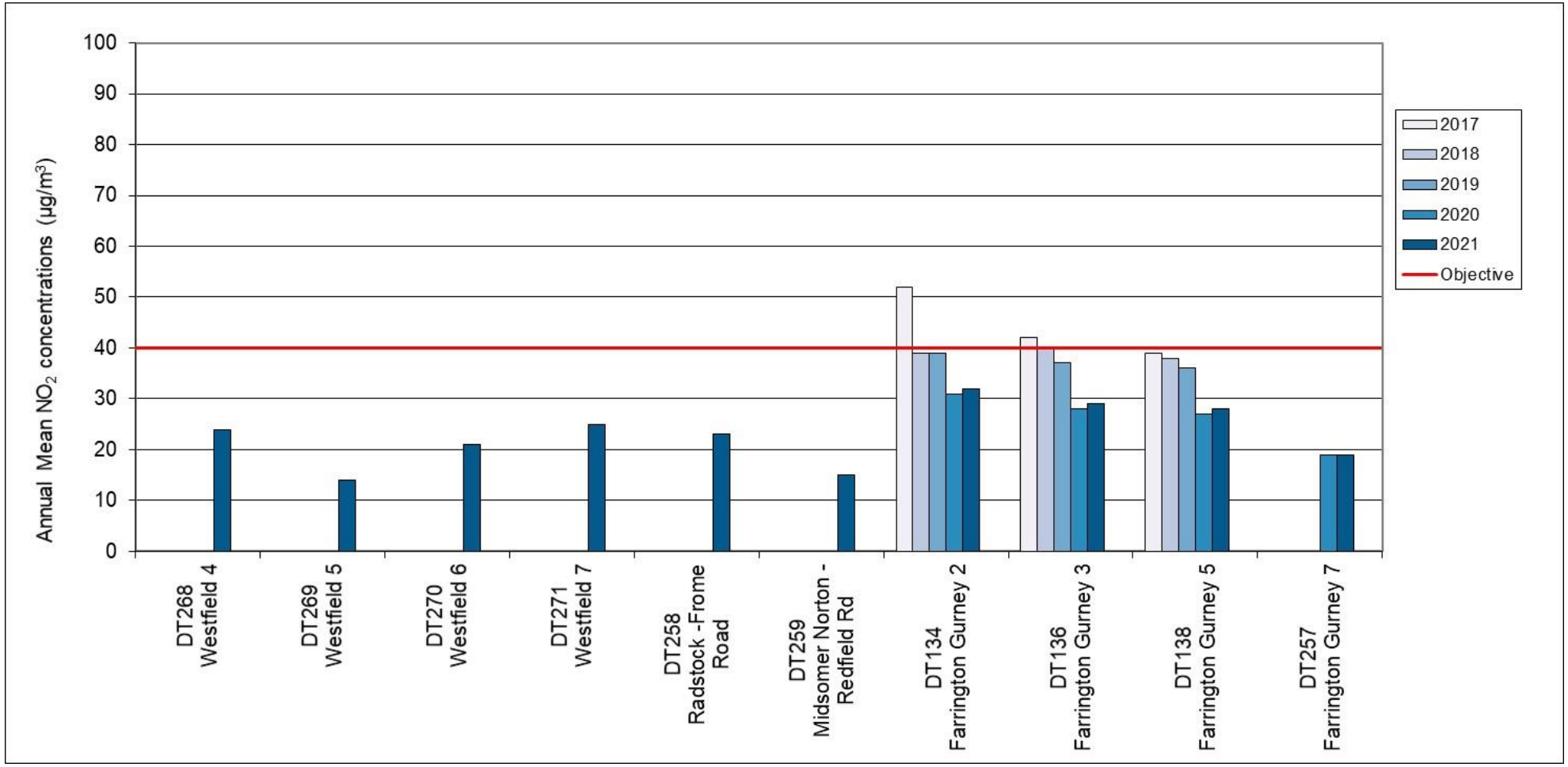


Figure A.17 – Trends in Annual Mean NO_2 Concentrations Measured at Diffusion Tube Monitoring Sites – Keysham (1)

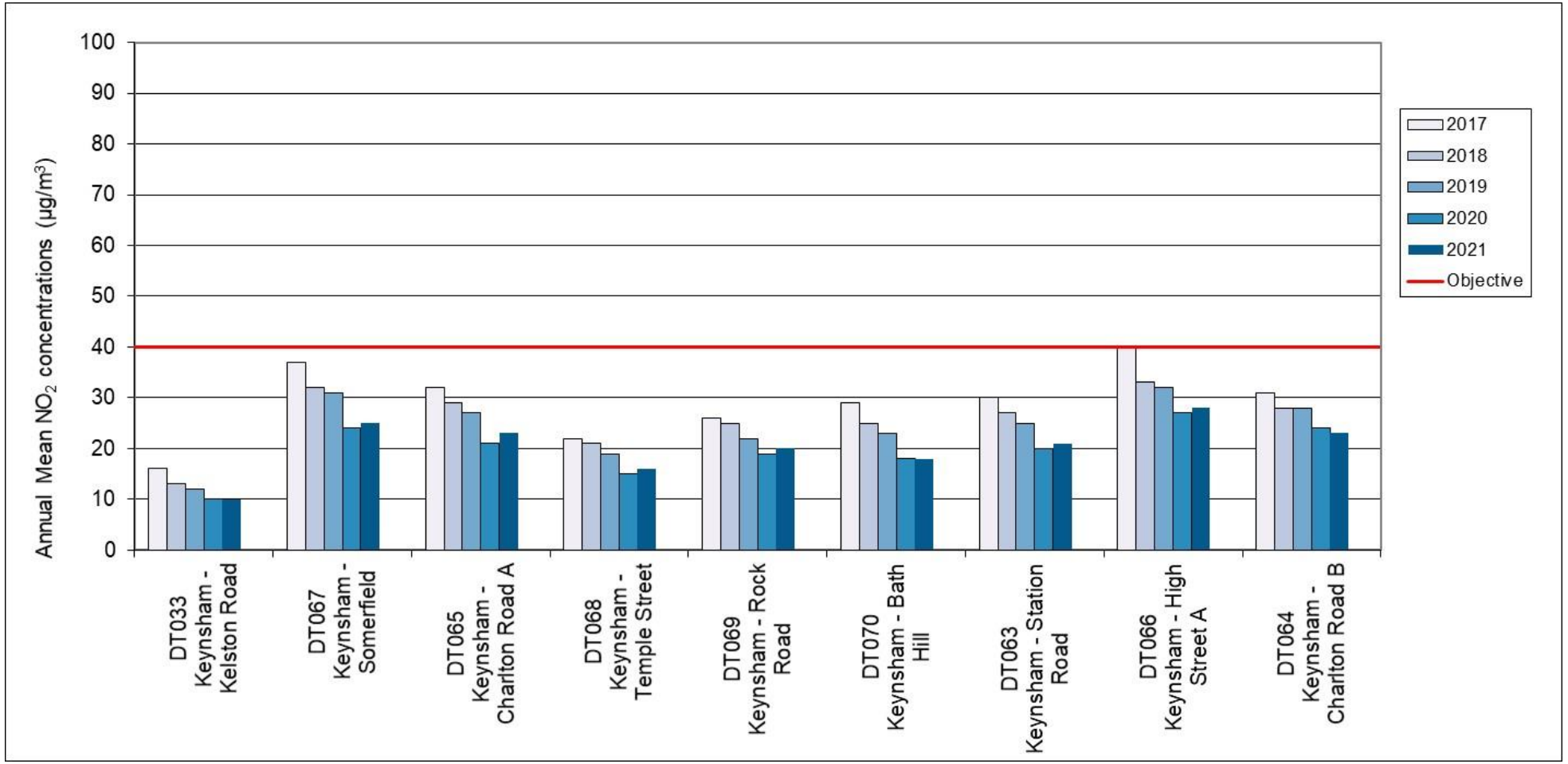


Figure A.18 – Trends in Annual Mean NO_2 Concentrations Measured at Diffusion Tube Monitoring Sites – Keysham (2)

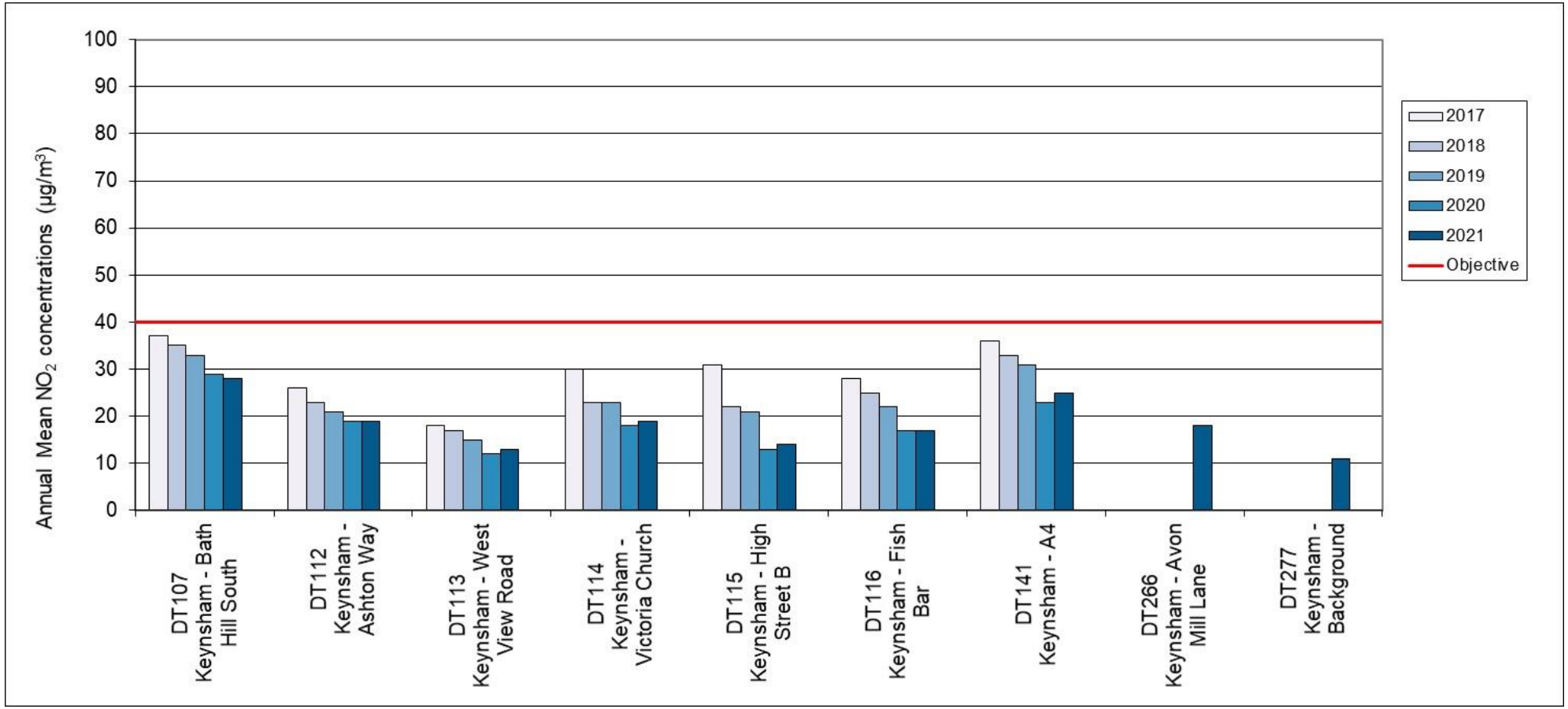


Figure A.19 – Trends in Annual Mean NO_2 Concentrations Measured at Diffusion Tube Monitoring Sites – Whitchurch, Pensford and Saltford

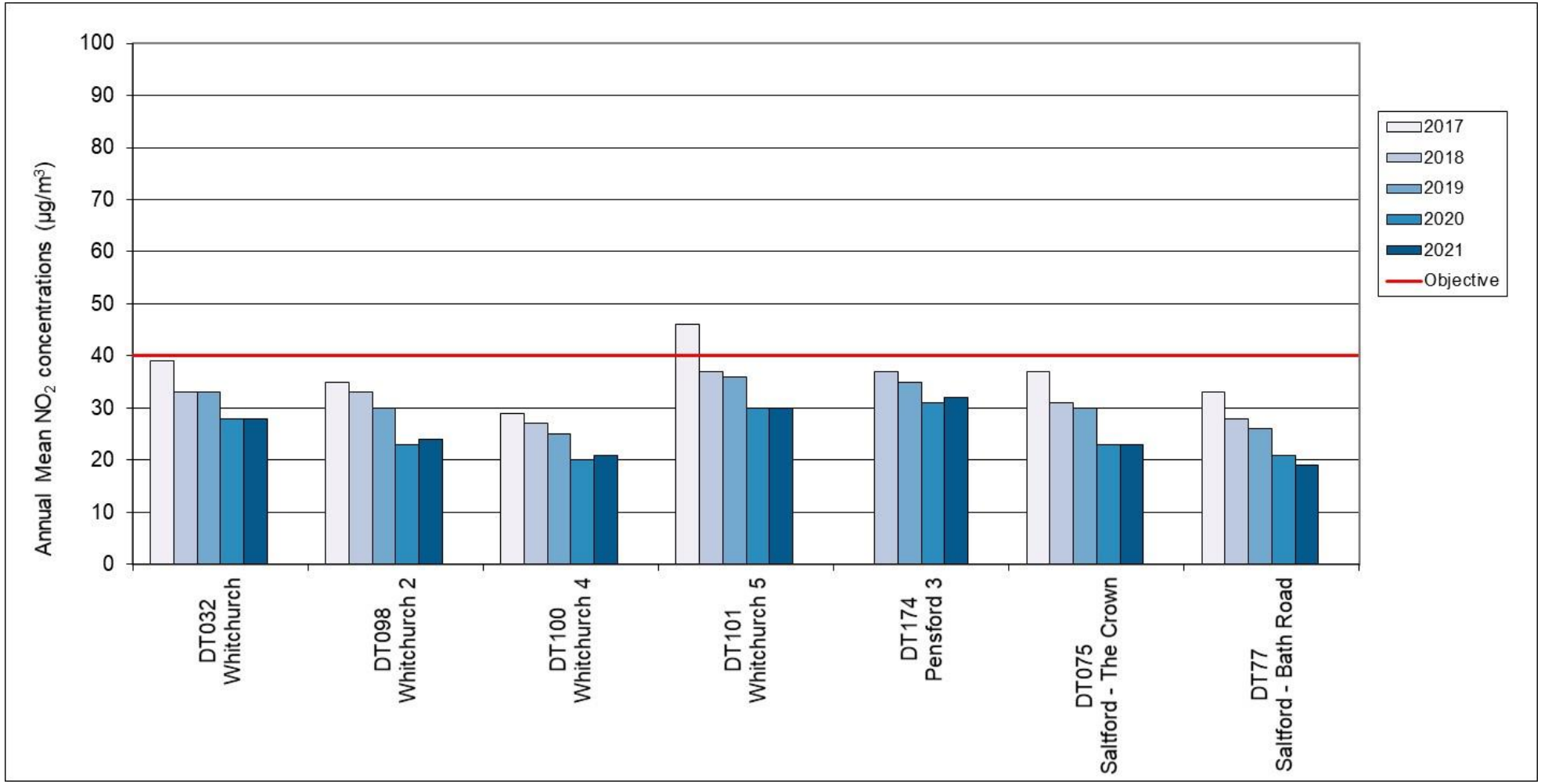


Figure A.20 – Trends in Annual Mean NO_2 Concentrations Measured at Diffusion Tube Monitoring Sites –Temple Cloud

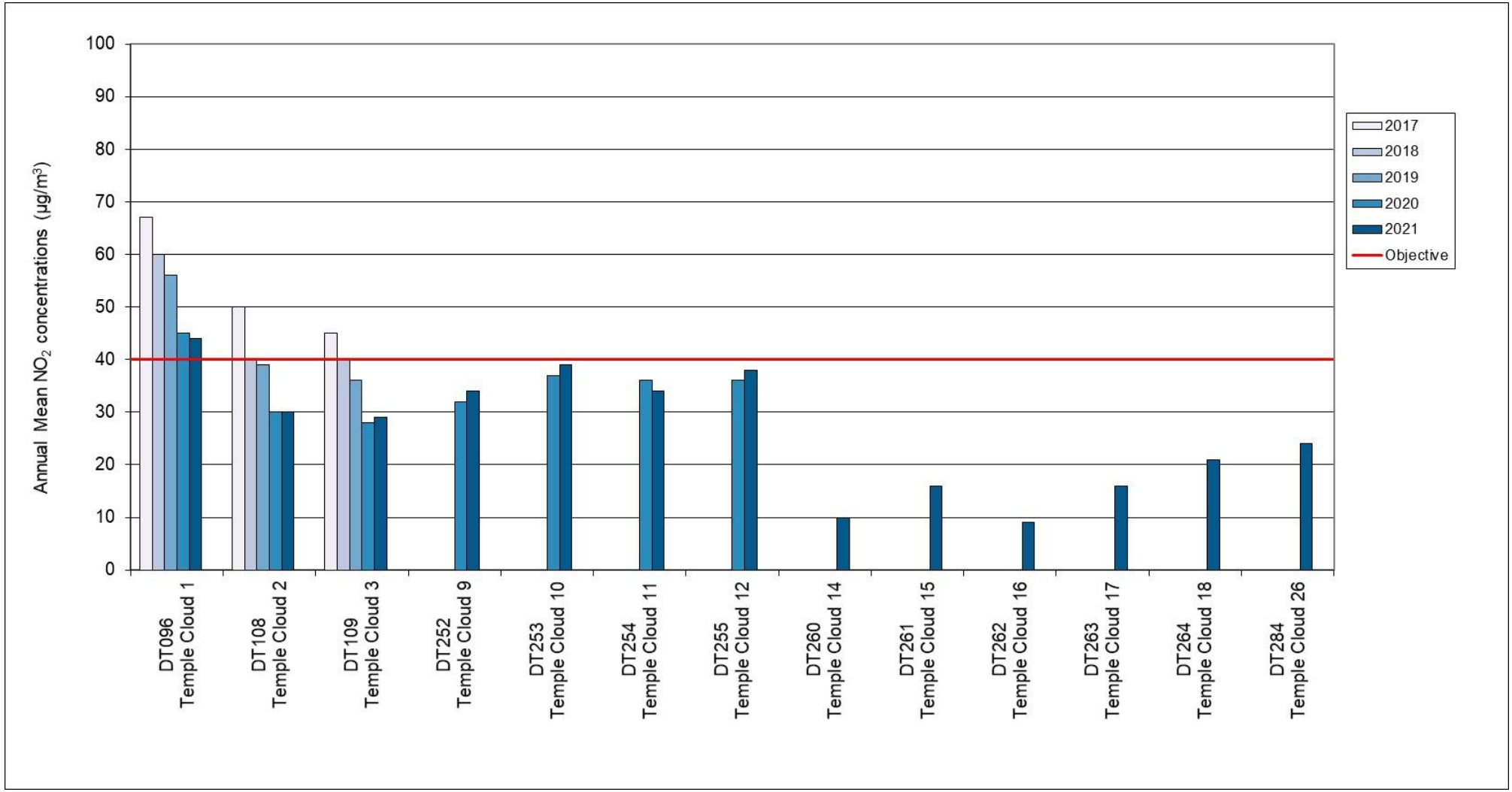


Table A.5 – 1-Hour Mean NO_2 Monitoring Results, Number of 1-Hour Means > 200µg/m^3

Site ID	Site Name	X OS Grid Ref (Easting)	Y OS Grid Ref (Northing)	Site Type	Valid Data Capture for Monitoring Period (%) (1)	Valid Data Capture 2021 (%) (2)	2017	2018	2019	2020	2021
CM2	Guildhall	375111	164857	Roadside	98.2	98.2	0 (96)	0	0	0	0
CM3	Windsor Bridge	373593	164861	Roadside	97.1	97.1	0	0	0	0	0
CM4	Chelsea House	375419	165853	Roadside	99.2	99.2	0	0	0	0	0
CM8	Bath A4 Roadside	375394	165824	Roadside	99	99	-	-	1 (125)	1	0

Notes:

Results are presented as the number of 1-hour periods where concentrations greater than 200µg/m^3 have been recorded.

Exceedances of the NO_2 1-hour mean objective (200µg/m^3 not to be exceeded more than 18 times/year) are shown in **bold**.

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

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

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

Table A.6 – Annual Mean PM_{10} Monitoring Results (µg/m^3)

Site ID	Site Name	X OS Grid Ref (Easting)	Y OS Grid Ref (Northing)	Site Type	Valid Data Capture for Monitoring Period (%) (1)	Valid Data Capture 2021 (%) (2)	2017	2018	2019	2020	2021
CM3	Windsor Bridge	373593	164861	Roadside	97.2	97.2	24	24	22	19	18
CM8	Bath A4 Roadside	375394	165824	Roadside	91.2	91.2	-	-	21	18	18

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

Notes:

The annual mean concentrations are presented as µg/m^3.

Exceedances of the PM_{10} annual mean objective of 40µg/m^3 are shown in **bold**.

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

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

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

Figure A.21 – Trends in Annual Mean PM_{10} Concentrations

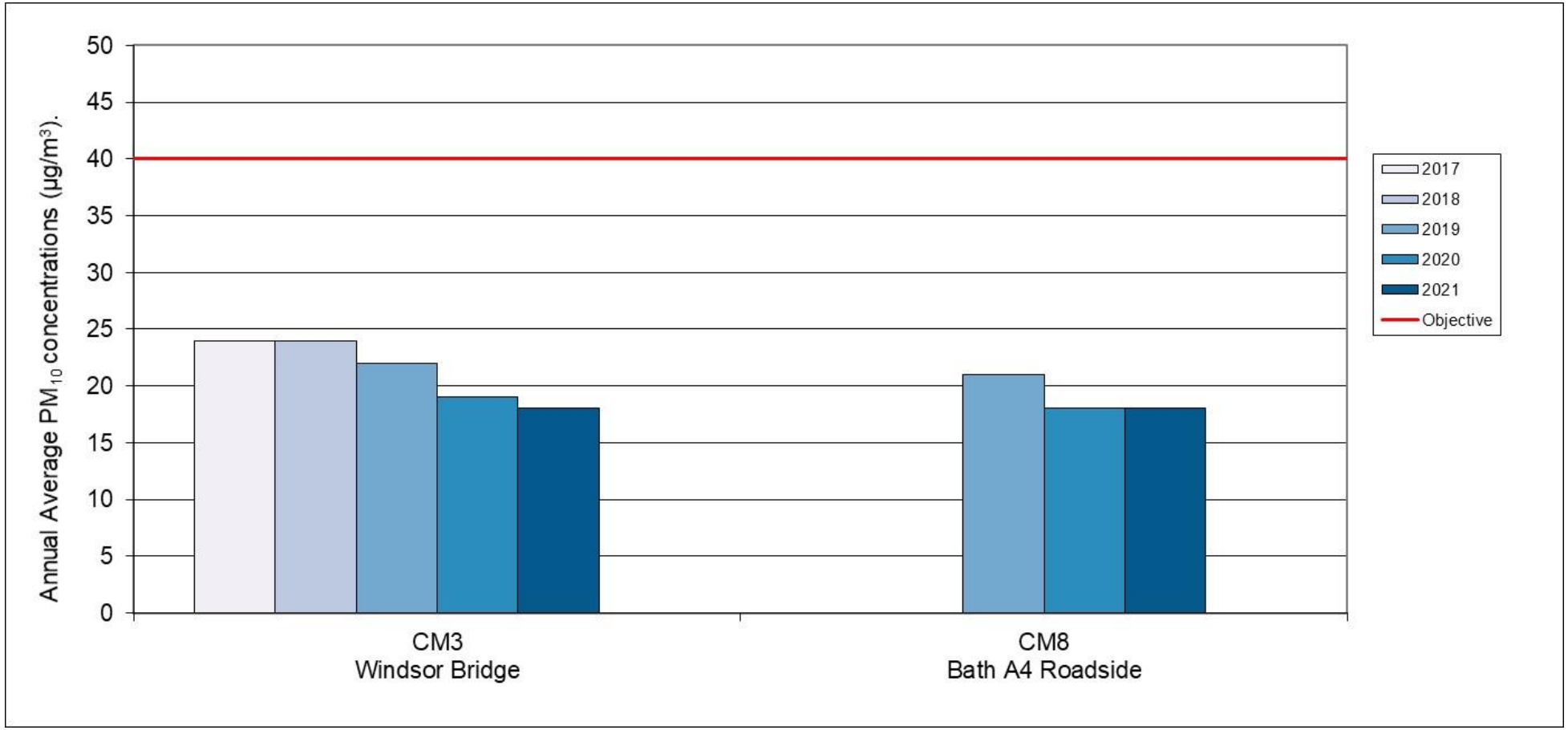


Table A.7 – 24-Hour Mean PM_{10} Monitoring Results, Number of PM_{10} 24-Hour Means > 50µg/m^3

Site ID	Site Name	X OS Grid Ref (Easting)	Y OS Grid Ref (Northing)	Site Type	Valid Data Capture for Monitoring Period (%) (1)	Valid Data Capture 2021 (%) (2)	2017	2018	2019	2020	2021
CM3	Windsor Bridge	373593	164861	Roadside	97.2	97.2	3	1	5	1	1
CM8	Bath A4 Roadside	375394	165824	Roadside	91.2	91.2	-	-	0 (26)	1	1

Notes:

Results are presented as the number of 24-hour periods where daily mean concentrations greater than 50µg/m^3 have been recorded.

Exceedances of the PM_{10} 24-hour mean objective (50µg/m^3 not to be exceeded more than 35 times/year) are shown in **bold**.

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

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

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

Figure A.22 – Trends in Number of 24-Hour Mean PM_{10} Results > 50µg/m^3

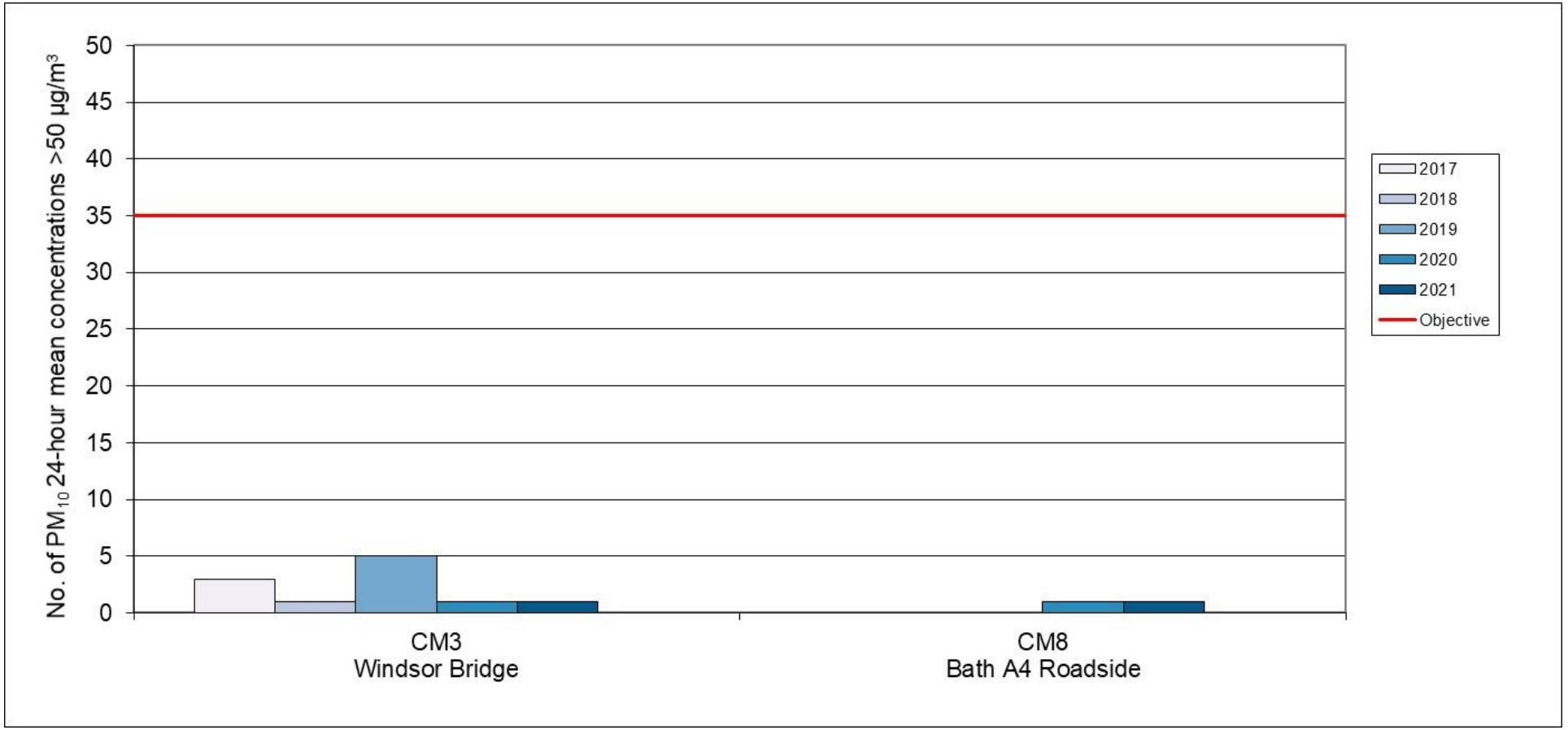


Table A.8 – Annual Mean $PM_{2.5}$ Monitoring Results (µg/m^3)

Site ID	Site Name	X OS Grid Ref (Easting)	Y OS Grid Ref (Northing)	Site Type	Valid Data Capture for Monitoring Period (%) (1)	Valid Data Capture 2021 (%) (2)	2017	2018	2019	2020	2021
CM4	Chelsea House	375419	165853	Roadside	90.9	90.9	12	11	10	10	10

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

Notes:

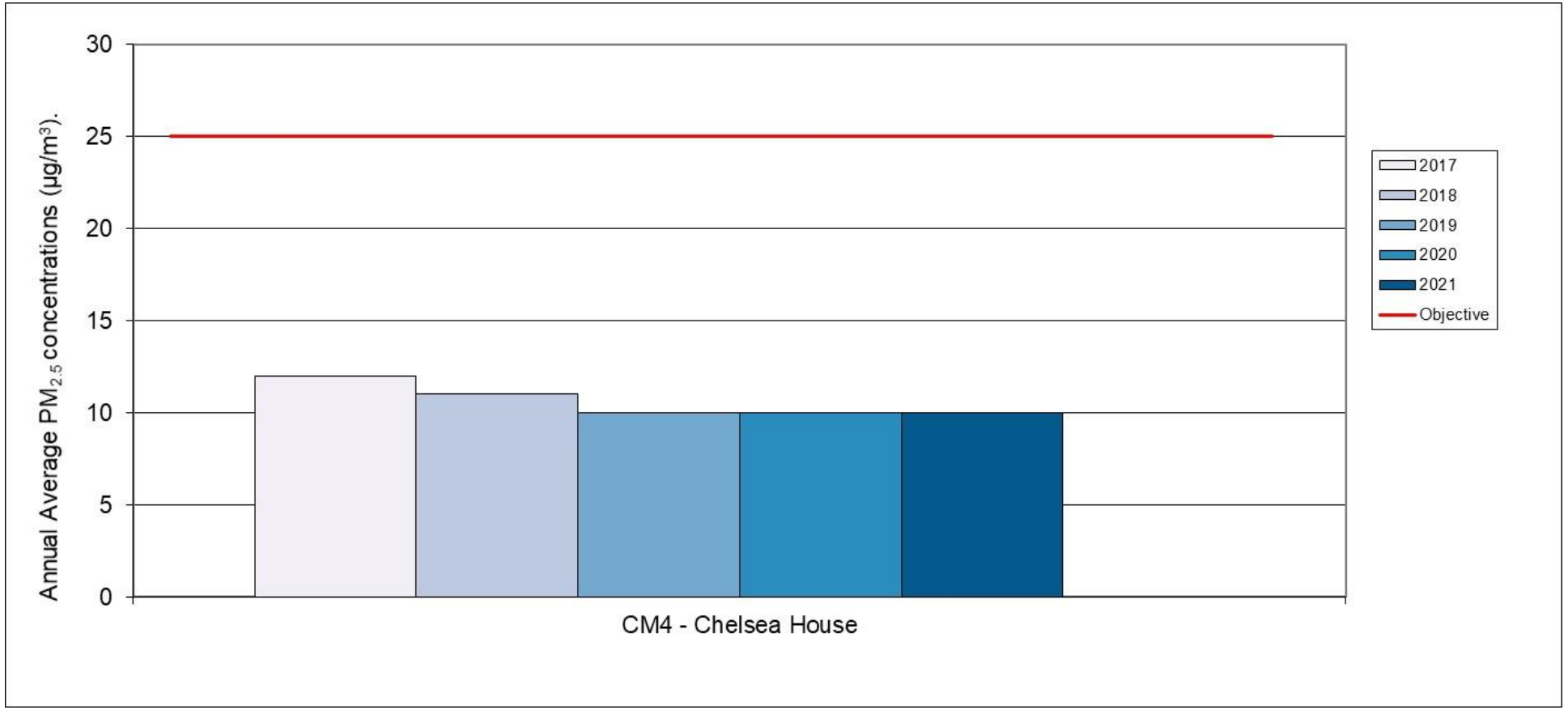
The annual mean concentrations are presented as µg/m^3.

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

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

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

Figure A.23 – Trends in Annual Mean $PM_{2.5}$ Concentrations



Appendix B: Full Monthly Diffusion Tube Results for 2021

Table B.1 – NO_2 2021 Diffusion Tube Results (µg/m^3)

DT ID	Site Name	X OS Grid Ref (Easting)	Y OS Grid Ref (Easting)	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual Mean: Raw Data	Annual Mean: Annualised and Bias Adjusted (0.87)	Annual Mean: Distance Corrected to Nearest Exposure	Comment
DT003	Bath - Broad St	374992	165173	35.6	30.0	31.3	25.6	30.4	25.3	31.9	34.8	38.6	40.8	43.3	29.6	33.1	28.8	-	
DT004	Bath - George St	374899	165159	29.6	25.1	10.8	21.2	24.6	23.6		26.4	31.4	28.2	35.7	24.3	25.5	22.2	-	
DT005	Bath - Gay St - Top	374797	165161	29.9	35.7	26.3	22.8	23.1	19.5	24.3	21.8	29.4	27.6	30.9	26.4	26.5	23.0	-	
DT008	Bath - Windsor Bridge	373518	165124	31.8	29.6	28.9	23.2	20.8	19.1	20.5	19.8	25.3	27.3	34.3	30.4	25.9	22.5	-	
DT009	Bath - Upper Bristol Rd	373993	165174	32.9	32.2	29.0	25.3	24.4	24.1	24.1	23.2	30.2	24.3	34.1	32.0	28.0	24.3	-	
DT014	Bath - Bathwick St	375602	165365	33.9	19.0	31.5	23.2	27.1	23.4	13.5	11.5	15.2	19.4	29.9	24.0	22.6	19.7	-	
DT015	Bath - Beckford Rd	375733	165414	27.9	15.1	26.7	26.1	21.9		19.1	17.0	22.0	21.7	27.6	24.0	22.6	19.7	-	
DT016	Bath - Warminster Rd	376063	165492	30.5	15.6	29.5	25.8	23.4	26.3	22.2	21.6	25.1	23.3	33.3	24.2	25.1	21.8	-	
DT017a	Bath - Widcombe School	375634	164406	30.0	22.7	25.6	20.5	21.3	18.6	19.6	15.7	22.9	22.5	33.1	23.7	-	-	-	Triplicate Site with DT017a, DT017b and DT017c - Annual data provided for DT017c only
DT017b	Bath - Widcombe School	375634	164406	30.6	23.4	25.2	22.2	22.6	11.4	19.4	18.3	24.1	20.8	35.5	24.2	-	-	-	Triplicate Site with DT017a, DT017b and DT017c - Annual data provided for DT017c only
DT017c	Bath - Widcombe School	375634	164406	28.9	25.2	24.4	22.7	20.6	20.8	19.5	18.1	24.7	22.0	34.1	23.4	23.3	20.3	-	Triplicate Site with DT017a, DT017b and DT017c - Annual data provided for DT017c only
DT018	Bath - Widcombe High St	375414	164216	26.1	19.7	23.2	18.6	18.1	14.9	16.6	13.7	20.3	18.3	27.9	22.2	20.0	17.4	-	
DT020a	Bath - Wells Rd	374760	164310	53.3	44.0		50.0	53.2	42.1	47.0	44.8	53.9	50.2	64.1	40.4	-	-	-	Triplicate Site with DT020a, DT020b and DT020c - Annual data provided for DT020c only
DT020b	Bath - Wells Rd	374760	164310	49.7	47.7	50.9	52.5	40.2	41.5	47.1	39.1	56.1	54.7	52.8	51.1	-	-	-	Triplicate Site with DT020a, DT020b and DT020c - Annual data provided for DT020c only
DT020c	Bath - Wells Rd	374760	164310	55.6	45.9	51.2	55.1	39.3	46.0	44.0	42.3	59.5	48.8	53.5	44.0	49.0	**42.6**	-	Triplicate Site with DT020a, DT020b and DT020c - Annual data provided for DT020c only
DT021	Bath - Wells Rd /Upper Oldfield Park	374454	164202	29.6	32.5	30.8	42.2	29.1	29.9	19.5	24.3	41.8	32.9	37.2	31.0	31.7	27.6	-	
DT023	Bath - Alexandra Park	375105	163991	13.9	10.1	11.6	10.9	7.5	7.6	7.2	6.3	8.3	8.7	14.9	10.4	9.8	8.5	-	

DT ID	Site Name	X OS Grid Ref (Easting)	Y OS Grid Ref (Easting)	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual Mean: Raw Data	Annual Mean: Annualised and Bias Adjusted (0.87)	Annual Mean: Distance Corrected to Nearest Exposure	Comment
DT026	Bath - Upper Wellsway	373576	161908	25.6	30.0	25.9	32.1	24.2	20.9	21.9	22.1	31.5	23.4	28.1	24.5	25.8	22.5	-	
DT034	Bath - Newbridge Rd	373092	165106	29.4	27.3	24.7	23.7	21.8		20.5	17.3	25.7	26.6	28.8	27.6	24.8	21.6	-	
DT037a	Bath - Charlotte St	374622	164994	33.2	27.9	30.0	26.9	25.1	23.3	23.9	26.2	29.1	28.6	35.1	27.1	-	-	-	Triplicate Site with DT037a, DT037b and DT037c - Annual data provided for DT037c only
DT037b	Bath - Charlotte St	374622	164994	33.8	29.5	31.0	27.7	24.6	24.7	24.6	25.8	28.2	28.4	37.4	30.4	-	-	-	Triplicate Site with DT037a, DT037b and DT037c - Annual data provided for DT037c only
DT037c	Bath - Charlotte St	374622	164994	33.7	27.7	27.5	25.9	23.3		23.7	22.9	27.4	26.1	34.4	24.8	27.9	24.3	-	Triplicate Site with DT037a, DT037b and DT037c - Annual data provided for DT037c only
DT039	Bath - Manvers St	375247	164591	32.9	26.7	31.8	27.9	27.9	25.7	20.9	25.5	28.8	28.2	44.2	23.7	28.7	25.0	-	
DT042	Bath - Dorchester St	375230	164383	44.2	36.6	44.7	39.2	48.0	43.5	48.3	43.8	49.0	51.8	67.5	41.9	46.5	**40.5**	34.6	
DT043	Bath - St. James Parade	375053	164426	40.3	39.2	38.4	38.7	40.3	31.3	40.9	31.4	44.9	47.3	44.3	38.4	39.6	34.5	-	
DT045	Bath - James St West	374697	164763	30.7	29.5	27.6	26.8	25.4	21.3	24.1	20.9	28.4	28.7	39.0	28.6	27.6	24.0	-	
DT052	Bath - Walcot Terrace	375462	165843	36.9	34.6	31.2	25.3	30.0	25.4	23.5	21.2	26.4	31.6	33.4	31.5	-	-	-	Triplicate Site with DT052, DT053 and DT054 - Annual data provided for DT054 only
DT053	Bath - Walcot Terrace	375462	165843	36.2	32.8	35.0	26.1	30.5	25.8	22.4	20.8	26.7	30.7	32.1	31.6	-	-	-	Triplicate Site with DT052, DT053 and DT054 - Annual data provided for DT054 only
DT054	Bath - Walcot Terrace	375462	165843	35.2	33.7	31.3	26.0	29.1	24.7	22.3	20.8	27.7	29.4	33.4	30.4	29.0	25.3	-	Triplicate Site with DT052, DT053 and DT054 - Annual data provided for DT054 only
DT055	Bath - Lambridge	376451	166502	36.7		27.6	32.2	30.4	36.4	31.6	29.2	33.8	29.8	35.3	29.2	32.0	27.9	32.0	
DT060	Bath - Victoria Buildings	374039	164760	50.1	49.4	51.1	47.2	43.1	43.0			44.2	34.8	54.5	42.0	45.9	40.0	28.1	
DT062	Bath - Argyle Terrace	373211	164743	40.3	47.2	40.5	46.7	34.4	24.8	35.8	31.5	43.9	36.3	40.9	39.3	38.5	33.5	-	
DT084	Bath - Bear Flat	374604	163806	28.7	29.6		34.0	22.5	23.6	22.8	20.7	29.9	24.8	33.2	27.3	27.0	23.5	-	
DT085	Bath - RUH – North	373073	165983	27.6	29.2	27.7	24.4	24.5	22.9		20.3	26.7	25.8	28.0	23.2	25.5	22.2	-	
DT087	Bath - Oak Street	374702	164414	30.5	28.2	25.3	24.7	21.6	18.5	22.4	20.6	26.3	20.5	31.1	27.0	24.7	21.5	-	
DT090a	Bath - Anglo Terrace	375288	165758	45.8	45.6	40.8	48.1	34.3	41.7	28.1	24.8	31.9	31.9	42.1	39.6	-	-	-	Triplicate Site with DT090a, DT090b and DT090c - Annual data provided for DT090c only
DT090b	Bath - Anglo Terrace	375288	165758	45.1	47.5	45.1	50.7	35.2	40.9	28.4	28.3	31.2	31.9	44.2	35.4	-	-	-	Triplicate Site with DT090a, DT090b and DT090c - Annual data provided for DT090c only

DT ID	Site Name	X OS Grid Ref (Easting)	Y OS Grid Ref (Easting)	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual Mean: Raw Data	Annual Mean: Annualised and Bias Adjusted (0.87)	Annual Mean: Distance Corrected to Nearest Exposure	Comment
DT090c	Bath - Anglo Terrace	375288	165758	44.6	44.3	46.0	49.1	37.6	38.2	28.0	25.3	31.3		39.7	39.2	38.2	33.2	-	Triplicate Site with DT090a, DT090b and DT090c - Annual data provided for DT090c only
DT142	Bath - Prior Park Road	375513	164194	30.5	26.3	26.4	26.0	23.9	23.4	23.7	20.9	29.8		33.5	29.5	26.7	23.3	-	
DT143	Bath - Rackfield Place	372644	164738	27.8	30.3	25.2	24.5	24.8	20.2	21.1	20.2	28.0	21.7	28.3	23.4	24.6	21.4	-	
DT145	Bath - Lansdown Road	374930	165550	26.0	23.6	24.7	26.2	21.9	18.9	20.2	17.0	24.7	22.8	28.0	22.9	23.1	20.1	-	
DT147	Bath - Terrace Walk	375195	164735	36.7	22.2	27.8	19.0	15.7	13.7	17.9	20.4	22.8	23.6	28.6	24.1	22.7	19.8	-	
DT148a	Bath - Julian Road	374573	165523	20.6	23.3	23.9	21.8	19.0	19.0	21.7	18.5	24.5	21.7	27.3	23.8	-	-	-	Triplicate Site with DT148a, DT148b and DT148c - Annual data provided for DT148c only
DT148b	Bath - Julian Road	374573	165523	25.8	23.4	24.6	22.0		18.3	21.0		23.9	25.3	29.4	24.4	-	-	-	Triplicate Site with DT148a, DT148b and DT148c - Annual data provided for DT148c only
DT148c	Bath - Julian Road	374573	165523	27.4	23.4	22.4	22.4		18.7	21.4	20.8	24.6	22.1	25.0	22.7	22.6	19.6	-	Triplicate Site with DT148a, DT148b and DT148c - Annual data provided for DT148c only
DT149	Bath - Camden 3	375038	165838			23.8	20.9	18.9	17.0	19.4	17.5	21.7	24.4	30.0	24.5	21.8	19.0	-	
DT150	Bath - Brougham Hayes	373955	164590	28.8	26.7	29.0	26.9	22.8	19.0	22.3	19.0	27.4	21.9	35.9	27.2	25.6	22.2	-	
DT151	Bath - Widcombe Hill	375598	164190	23.3	20.3	24.7	24.8	19.7	18.0	21.6	19.4	21.7	18.6	32.3	21.0	22.1	19.2	-	
DT152	Bath - Bathwick Hill	375800	164912	22.5	13.5	22.4	18.3	19.2	16.1			20.8	21.0	33.9	22.9	21.1	18.3	-	
DT153	Bath - North Road	376069	165356	17.1	7.5	17.0	15.0	12.0	13.5	12.5	10.6		17.4	23.7	16.7	14.8	12.9	-	
DT154	Bath - Bradford Road	375529	162389	23.2	24.2	24.6	24.6	22.1	19.2	21.2	17.6	31.4	26.7	29.1	25.6	24.1	21.0	-	
DT155	Bath - Newbridge Hill 2	372696	165488			16.3	15.0	11.6	10.9	11.0	9.7	14.0	14.9	21.7	17.6	14.3	12.4	-	
DT156	Bath - Corn Street	374827	164531	28.8	28.9	28.3	29.2	20.8	17.5	22.0	17.8	25.1	27.7	28.8	25.8	25.1	21.8	-	
DT157	Bath - Charles Street	374664	164815	27.2	27.0	24.2	25.5	22.8	18.5	25.3		30.2	27.6	28.6	27.0	25.8	22.4	-	
DT158	Bath - Paragon 2	375051	165350	31.5	32.7	30.0	27.3	22.2	20.2	23.3		33.2	31.4	32.0	26.2	28.2	24.5	-	
DT159	Bath - Walcot Street	375075	165287	29.3	22.8	22.2	19.8	18.5	15.9	16.8	18.6	21.3	25.3	28.1	24.6	21.9	19.1	-	
DT160	Bath - North Parade Road	375284	164694	29.0	24.3	29.6	22.2	21.1	19.3	21.1	24.8	27.6	37.0	35.2	26.9	26.5	23.1	-	

DT ID	Site Name	X OS Grid Ref (Easting)	Y OS Grid Ref (Easting)	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual Mean: Raw Data	Annual Mean: Annualised and Bias Adjusted (0.87)	Annual Mean: Distance Corrected to Nearest Exposure	Comment
DT165	Bath - Brassknocker Hill	377960	162736	23.7	23.7	29.2	29.1	31.0		34.9	32.1	34.3	27.8	37.4	27.0	30.0	26.1	-	
DT167	Bath - Weston High Street	372587	166629	22.7	25.2	20.3	24.1	20.0	19.4	19.8	16.1	21.5	20.6	21.4	22.4	21.1	18.4	-	
DT168	Bath - Englishcombe Lane	373207	163339	14.9	14.1	16.0		10.2	9.8	9.5	8.5	12.1	11.4	18.5	12.8	12.5	10.9	-	
DT169	Bath - Eastbourne Avenue	375667	166369	22.3	20.1	23.4	21.3	16.2	14.1	17.0	13.3	19.9	20.8	27.3	25.8	20.1	17.5	-	
DT171	Bath - Frome Road/Upper Bloomfield	373706	162411	25.8	30.2	30.0	33.0	24.7	22.3	25.9	23.4	30.3	22.1	31.3	21.4	26.7	23.2	-	
DT172a	Bath - London Road 2	375374	165813	39.3	37.9	41.2	40.7	31.8	35.1	28.1	26.8	31.3	32.9	42.3	38.4	-	-	-	Triplicate Site with DT172a, DT172b and DT172c - Annual data provided for DT172c only
DT172b	Bath - London Road 2	375374	165813	42.7	40.3	39.7	38.9	34.4	36.2	27.9	26.9	33.6	32.3	44.2	37.0	-	-	-	Triplicate Site with DT172a, DT172b and DT172c - Annual data provided for DT172c only
DT172c	Bath - London Road 2	375374	165813	43.4	38.8	43.5	39.8	32.7	34.4	29.0	24.0	30.6	33.5	41.2	35.9	35.8	31.1	-	Triplicate Site with DT172a, DT172b and DT172c - Annual data provided for DT172c only
DT173	Bath - Upper Bristol Road 2	374362	165016		33.5	30.5	25.7	28.6	21.0	27.9	23.6	33.1	28.0	36.7	35.9	29.5	25.7	-	
DT179a	Bath - Upper Bristol Road 3	373299	165093	30.5	33.2	29.8	33.8	25.9	23.3	27.6	26.4	38.7	29.8	37.4	32.1	-	-	-	Triplicate Site with DT179a, DT179b and DT179c - Annual data provided for DT179c only
DT179b	Bath - Upper Bristol Road 3	373299	165093	30.3	34.6	33.4	34.0	26.2	23.7	31.1	28.9	37.6	29.6	33.4	28.5	-	-	-	Triplicate Site with DT179a, DT179b and DT179c - Annual data provided for DT179c only
DT179c	Bath - Upper Bristol Road 3	373299	165093	33.2	37.2	30.4	34.3	24.6	25.2	30.6	28.1	36.4	29.8	33.9	31.3	31.0	26.9	-	Triplicate Site with DT179a, DT179b and DT179c - Annual data provided for DT179c only
DT180a	Bath - Wells Road 2	374537	163968	34.4	34.1	35.7	39.6	35.4	28.1	31.8	27.8	39.9	35.3	40.4	31.1	-	-	-	Triplicate Site with DT180a, DT180b and DT180c - Annual data provided for DT180c only
DT180b	Bath - Wells Road 2	374537	163968	37.2	34.8	37.1	39.9	32.9	30.5	35.3	28.1	37.8	36.0	38.5	26.3	-	-	-	Triplicate Site with DT180a, DT180b and DT180c - Annual data provided for DT180c only
DT180c	Bath - Wells Road 2	374537	163968	37.2	35.5	35.7	41.9	35.7	29.9	36.6	26.6		36.7	41.1	31.0	34.9	30.3	-	Triplicate Site with DT180a, DT180b and DT180c - Annual data provided for DT180c only
DT181	Bath - Wellsway	374618	163494	33.5	29.0	31.8	28.1	27.5	14.9	23.4	21.9	33.1	30.3	40.1	31.1	28.7	25.0	-	
DT182a	Bath - Gay Street - Lower	374796	165123	36.9	31.5	34.8	30.5	35.7	36.1	39.4	37.6	47.4	43.4	44.9	39.6	-	-	-	Triplicate Site with DT182a, DT182b and DT182c - Annual data provided for DT182c only
DT182b	Bath - Gay Street - Lower	374796	165123	35.6	32.0	33.9	29.5	39.8	34.7	40.0	37.6	48.3	47.1	48.1	34.4	-	-	-	Triplicate Site with DT182a, DT182b and DT182c - Annual data provided for DT182c only
DT182c	Bath - Gay Street - Lower	374796	165123	34.5	29.1	30.4	29.3	34.5	35.9	37.6	38.0	48.8	41.1	48.5	36.2	37.9	32.9	-	Triplicate Site with DT182a, DT182b and DT182c - Annual data provided for DT182c only

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DT183	Bath - Chapel Row	374712	164913	29.2	27.5	27.0	28.0	28.8	24.0	30.7	28.1	37.2	31.0	33.2	29.6	29.5	25.7	-	
DT185	Bath - Greenway Lane	374712	163417	15.9	12.5	14.8	10.8		8.4	9.1	7.9	12.4	13.4	20.2	12.3	12.5	10.9	-	
DT186	Bath - Coronation Avenue	373170	163416	18.1	21.0	20.0	22.7		12.6	13.4	13.4	18.9	15.9	20.9	17.2	17.6	15.4	-	
DT187	Bath - Stanley Road West	373835	164438	27.4	25.6	20.4	23.4	17.3	15.5	16.7	13.2	20.4		25.3	23.3	20.8	18.1	-	
DT188	Bath - Moorland Road	373696	164343	25.3		21.7	19.7	16.6	14.1	14.8	12.8	18.9	19.4	26.0	22.1	19.2	16.7	-	
DT189	Bath - Old Newbridge Hill	372251	165686	28.5		30.6	33.2	23.8	26.5	29.2	26.4	33.7	25.1	36.4	24.7	28.9	25.2	-	
DT190	Bath - Church Street	375814	164027	18.1	12.6	16.3	13.4	9.2	7.9	7.7	7.7	8.9		19.3	12.7	12.2	10.6	-	
DT192	Bath - Fairfield Road	375505	166428	18.9	17.1	17.0	12.5	12.1	9.8	10.9	7.9	12.5	16.0	18.4	16.8	14.2	12.3	-	
DT193	Bath - Granville Road	374260	167661	10.5	17.8	9.2	7.1	6.5	16.4	5.5	4.4	6.1	7.1	10.4	8.1	9.1	7.9	-	
DT194	Bath - Brooklyn Road	376096	166878	17.0	15.6	16.5	13.6	11.1	10.9	11.4		12.2	14.1	17.8	16.1	14.2	12.4	-	
DT195	Bath - Lansdown Lane	372537	167235	20.3	20.5	21.5	22.1	17.4		19.8	16.3	22.6	21.3	29.9	22.5	21.3	18.5	-	
DT196	Bath - Oakley	377133	164045	19.7	11.4	19.0	17.9	19.3	18.9	16.6	13.8	21.9	27.9	34.4	21.3	20.2	17.6	-	
DT197	Bath - Rush Hill	372703	162983	20.6	23.8	25.1	24.0	21.3	18.3	20.4	17.5	25.6	22.9	28.8	20.8	22.4	19.5	-	
DT198a	Bath - Walcot Parade	375240	165739	49.1	48.2	50.8	51.8	41.4	42.2	33.2	33.7	39.4	41.5	47.3	43.8	-	-	-	Triplicate Site with DT198a, DT198b and DT198c - Annual data provided for DT198c only
DT198b	Bath - Walcot Parade	375240	165739	48.9	50.0	45.8	52.3	39.5	42.6	34.5	33.7	40.6	42.1	49.9	43.4	-	-	-	Triplicate Site with DT198a, DT198b and DT198c - Annual data provided for DT198c only
DT198c	Bath - Walcot Parade	375240	165739	49.2	48.0	49.3	50.7	41.9	42.2	31.6	34.6	39.5	41.0	46.7	43.9	43.5	37.8	35.8	Triplicate Site with DT198a, DT198b and DT198c - Annual data provided for DT198c only
DT199	Bath - Hensley Road	374353	163504	14.5	13.5	13.8	12.6		7.3	8.1	6.3	10.4	10.5	14.8	11.4	11.2	9.7	-	
DT200	Bath - Millmead Road	373375	164307	22.8	19.0	16.2	18.1	11.1	10.4	10.1	9.8	14.1	13.4	17.4	16.4	14.9	13.0	-	
DT201	Bath - The Hollow	373003	164250	27.7	26.2		27.1	21.7	19.5	19.8	18.3	24.5	23.0	28.7	23.0	23.6	20.5	-	
DT202	Bath - Charlcombe	374636	166701	13.0	13.7	12.9	11.5	10.5	8.8	8.9	8.2	11.0	12.4	17.3	13.7	11.8	10.3	-	

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DT206a	Bath - Park Lane	373742	165305	27.0	25.6	26.6	24.3	23.4	25.5	27.7	24.4	32.1	32.6	36.1	26.3	-	-	-	Triplicate Site with DT206a, DT206b and DT206c - Annual data provided for DT206c only
DT206b	Bath - Park Lane	373742	165305	29.4	24.6	29.5	21.7	25.0	23.5	27.0	24.9	32.4	31.7	32.9	26.6	-	-	-	Triplicate Site with DT206a, DT206b and DT206c - Annual data provided for DT206c only
DT206c	Bath - Park Lane	373742	165305	28.3	25.3	28.5	25.5	23.7	24.4	28.5	25.8	30.1	31.5	37.0	26.2	27.7	24.1	-	Triplicate Site with DT206a, DT206b and DT206c - Annual data provided for DT206c only
DT207	Bath - Darlington Street	375630	165132	39.3	22.1	39.0	30.7	30.0	30.5	25.6	23.5	30.4	28.3	38.9	29.7	30.7	26.7	-	
DT209	Bath - Bellots Road	373490	164804	21.6	19.9	17.2	19.0	14.5	11.4	13.2	11.9	18.0	16.3	24.0	21.7	17.4	15.1	-	
DT210	Bath - Red Lion Roundabout	373895	162254	29.0	29.5	31.4	32.7	33.0	33.8	33.9	28.4	38.6		37.8	28.4	32.4	28.2	-	
DT211	Bath - St John's Road	375218	165290	22.3	11.1	20.7	16.6	13.8	10.7		10.3	14.6	16.2	22.0	19.4	16.1	14.0	-	
DT212	Bath - Oldfield Road	374356	163985	21.3	19.1	18.9	21.4	12.0	12.3	12.8	10.4	16.6	13.9	20.5	16.6	16.3	14.2	-	
DT213a	Bath - Marlborough Lane	374262	165127	21.9	23.0	21.2	20.3	19.0	18.2	20.6	19.8	24.3		25.7		-	-	-	Triplicate Site with DT213a, DT213b and DT213c - Annual data provided for DT213c only
DT213b	Bath - Marlborough Lane	374262	165127	21.7	23.5	20.2	18.7	15.6	18.1	20.5	18.5	25.2	19.9	25.2		-	-	-	Triplicate Site with DT213a, DT213b and DT213c - Annual data provided for DT213c only
DT213c	Bath - Marlborough Lane	374262	165127	21.4	22.7	21.0	19.3	17.2	17.1	19.3	19.7	24.0	19.0	25.3	22.5	20.9	18.2	-	Triplicate Site with DT213a, DT213b and DT213c - Annual data provided for DT213c only
DT214a	Bath - Marlborough Buildings	374354	165448	22.9	18.7	20.6	16.5	14.3	12.0	15.5	13.6	18.5	21.6	27.0	22.4	-	-	-	Triplicate Site with DT214a, DT214b and DT214c - Annual data provided for DT214c only
DT214b	Bath - Marlborough Buildings	374354	165448	23.5	19.1	21.1	16.7	13.0	12.2	15.2	13.4	18.7	17.6	26.6	21.1	-	-	-	Triplicate Site with DT214a, DT214b and DT214c - Annual data provided for DT214c only
DT214c	Bath - Marlborough Buildings	374354	165448	25.5	19.2	20.7	17.8	13.8	13.1	14.9	14.4	18.7	17.9	27.0	23.2	18.6	16.1	-	Triplicate Site with DT214a, DT214b and DT214c - Annual data provided for DT214c only
DT215a	Bath - Queen Parade Place	374758	165096	19.8	19.8	17.9	16.7	14.0		14.0	15.5	17.8	17.8	22.5	19.1	-	-	-	Triplicate Site with DT215a, DT215b and DT215c - Annual data provided for DT215c only
DT215b	Bath - Queen Parade Place	374758	165096	20.9	19.1	17.3	17.0			13.7	14.3	17.1	16.2	21.3	20.9	-	-	-	Triplicate Site with DT215a, DT215b and DT215c - Annual data provided for DT215c only
DT215c	Bath - Queen Parade Place	374758	165096	20.2	17.9	18.0				14.1	15.0	18.0	17.8	20.9	20.4	17.6	15.3	-	Triplicate Site with DT215a, DT215b and DT215c - Annual data provided for DT215c only
DT216a	Bath - Monmouth Place	374574	164958	33.4	29.9	31.7	29.0	21.5	21.7	25.1	23.5	30.4	28.6	36.2		-	-	-	Triplicate Site with DT216a, DT216b and DT216c - Annual data provided for DT216c only
DT216b	Bath - Monmouth Place	374574	164958	32.5	30.7	32.7	30.1	25.4	20.3	23.6	21.1	26.9	27.9	37.2		-	-	-	Triplicate Site with DT216a, DT216b and DT216c - Annual data provided for DT216c only

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DT216c	Bath - Monmouth Place	374574	164958	33.8	29.6	30.3	30.3	23.2	21.5	23.2	22.0	28.6	29.0	34.6		28.0	24.4	-	Triplicate Site with DT216a, DT216b and DT216c - Annual data provided for DT216c only
DT217a	Bath - Cavendish Road	374335	165990	15.8	16.5	15.8	16.4	11.9	11.3	13.5	11.7	15.4	15.1	22.5	15.6	-	-	-	Triplicate Site with DT217a, DT217b and DT217c - Annual data provided for DT217c only
DT217b	Bath - Cavendish Road	374335	165990	18.6	17.7	18.4	17.5	13.2	12.0	13.3	11.2	16.7	14.4	18.0	17.6	-	-	-	Triplicate Site with DT217a, DT217b and DT217c - Annual data provided for DT217c only
DT217c	Bath - Cavendish Road	374335	165990	17.9	18.7	17.3	17.9	13.2	12.2	14.5	11.7	18.0	14.8	20.0	17.4	15.7	13.6	-	Triplicate Site with DT217a, DT217b and DT217c - Annual data provided for DT217c only
DT218	Bath - Weston Road	373668	165697	22.0	20.0	19.6	16.2	15.4	13.3	14.2	12.7	15.0	18.8	23.5	17.1	17.3	15.1	-	
DT219	Bath - Morford Street	374872	165570	25.2	23.9	24.3	21.4	17.3	13.9	18.5	15.0	20.9	17.0	24.2	23.0	20.4	17.7	-	
DT221	Bath - Gay Street - façade	374793	165119	30.5	27.6	29.6	26.3	27.4	29.2	32.2	29.9	39.8	36.0	40.3	32.7	31.8	27.7	-	
DT222a	Bath - Anglo Terrace façade	375231	165778	48.0	53.2	52.2	50.1	43.1	42.7	32.2	31.5	37.2	39.8	48.5	44.6	-	-	-	Triplicate Site with DT222a, DT222b and DT222c - Annual data provided for DT222c only
DT222b	Bath - Anglo Terrace façade	375231	165778	51.4	51.4	52.6	50.6	42.8	45.7	32.6	29.8	38.3	40.3	48.5	44.1	-	-	-	Triplicate Site with DT222a, DT222b and DT222c - Annual data provided for DT222c only
DT222c	Bath - Anglo Terrace façade	375231	165778	52.7	49.7	50.4	51.8	41.9	45.6	32.7	31.6	36.0	40.1	48.8	46.2	43.8	38.1	36.5	Triplicate Site with DT222a, DT222b and DT222c - Annual data provided for DT222c only
DT223a	Bath - Canton Place	375322	165759	38.0	35.5	33.4	29.1	29.1	27.6	19.5	17.6		26.7	32.5	34.0	-	-	-	Triplicate Site with DT223a, DT223b and DT223c - Annual data provided for DT223c only
DT223b	Bath - Canton Place	375322	165759	41.0	25.0	34.6	29.6	28.3	26.5	20.4	19.0		25.5	36.5	32.9	-	-	-	Triplicate Site with DT223a, DT223b and DT223c - Annual data provided for DT223c only
DT223c	Bath - Canton Place	375322	165759	39.4	27.1	37.2	30.8	31.0	29.1	20.9	18.2		26.4	35.0	32.3	29.4	25.6	-	Triplicate Site with DT223a, DT223b and DT223c - Annual data provided for DT223c only
DT224a	Bath - Walcot Parade 2	375207	165726	52.6	44.8	51.1	50.9	45.4	49.7	42.3	42.6	53.6	54.0	54.8	45.8	-	-	-	Triplicate Site with DT224a, DT224b and DT224c - Annual data provided for DT224c only
DT224b	Bath - Walcot Parade 2	375207	165726	50.8	50.5	50.8	53.7	49.3	49.0	43.7	38.1	51.7	55.2	52.9	45.7	-	-	-	Triplicate Site with DT224a, DT224b and DT224c - Annual data provided for DT224c only
DT224c	Bath - Walcot Parade 2	375207	165726	53.3	54.8	54.2	54.5	51.0	48.1	43.4	41.7	52.1	51.4	49.5	52.6	49.6	**43.1**	**41.2**	Triplicate Site with DT224a, DT224b and DT224c - Annual data provided for DT224c only
DT225a	Bath - Cleveland Terrace	375203	165708	40.4	39.2	40.3	36.5	33.7		32.3	30.4	39.1	37.7	38.6	39.0	-	-	-	Triplicate Site with DT225a, DT225b and DT225c - Annual data provided for DT225c only
DT225b	Bath - Cleveland Terrace	375203	165708	42.1	40.2	40.5	37.5	34.0		31.4	33.3	38.8	38.4	38.2	38.1	-	-	-	Triplicate Site with DT225a, DT225b and DT225c - Annual data provided for DT225c only
DT225c	Bath - Cleveland Terrace	375203	165708	40.5	40.1	38.2	35.5	33.8		31.4	31.1	35.3	38.3	38.2	38.1	37.0	32.2	-	Triplicate Site with DT225a, DT225b and DT225c - Annual data provided for DT225c only

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DT226a	Bath - AURN	375394	165824	36.5	33.0	36.6	34.9	29.8	30.9	25.8	23.6	27.1	29.6	36.5	30.2	-	-	-	Triplicate Site with DT226a, DT226b and DT226c - Annual data provided for DT226c only
DT226b	Bath - AURN	375394	165824	38.7	32.1	34.3	31.6	26.4	30.7	25.6	23.9	27.5	29.2	37.2	31.2	-	-	-	Triplicate Site with DT226a, DT226b and DT226c - Annual data provided for DT226c only
DT226c	Bath - AURN	375394	165824	36.8	34.2	33.8	30.9	29.3	30.2	26.0	24.1	27.7	28.6	36.9	31.7	30.9	26.9	-	Triplicate Site with DT226a, DT226b and DT226c - Annual data provided for DT226c only
DT227a	Bath - Wells Road 3	374580	163979	40.7	37.0	39.8	38.2	34.5	31.4	37.4	28.7	42.2	35.1	50.3	33.1	-	-	-	Triplicate Site with DT227a, DT227b and DT227c - Annual data provided for DT227c only
DT227b	Bath - Wells Road 3	374580	163979	40.6	33.3	39.9	38.5	37.0	28.4	35.2	30.5	45.2	36.1	45.8	34.1	-	-	-	Triplicate Site with DT227a, DT227b and DT227c - Annual data provided for DT227c only
DT227c	Bath - Wells Road 3	374580	163979	40.9	37.2	38.6	34.7	35.1	30.3	36.7	28.2	46.2	35.6	48.7	36.2	37.3	32.4	-	Triplicate Site with DT227a, DT227b and DT227c - Annual data provided for DT227c only
DT228a	Bath - Lower Bristol Road 2	374002	164754	35.5	32.6	33.6	30.3	27.7	24.1	24.0	23.7	29.8	25.7	35.6	30.8	-	-	-	Triplicate Site with DT228a, DT228b and DT228c - Annual data provided for DT228c only
DT228b	Bath - Lower Bristol Road 2	374002	164754	34.3	33.7	28.3	28.2	23.9	22.7	23.7	22.1	26.1	22.5	32.7	28.9	-	-	-	Triplicate Site with DT228a, DT228b and DT228c - Annual data provided for DT228c only
DT228c	Bath - Lower Bristol Road 2	374002	164754	35.8	31.5	31.9	29.1	26.7	25.0	23.5	23.1	28.7	26.6	33.5	28.1	28.4	24.7	-	Triplicate Site with DT228a, DT228b and DT228c - Annual data provided for DT228c only
DT229a	Bath - Lower Bristol Road 3	373936	164779	39.3	40.0	37.1	40.8	32.3	30.4	32.4	27.1	35.1	27.1	43.8	34.2	-	-	-	Triplicate Site with DT229a, DT229b and DT229c - Annual data provided for DT229c only
DT229b	Bath - Lower Bristol Road 3	373936	164779	41.3	41.1	37.7	41.0	31.0	29.4	30.9	27.5	36.0	27.8	41.9	35.1	-	-	-	Triplicate Site with DT229a, DT229b and DT229c - Annual data provided for DT229c only
DT229c	Bath - Lower Bristol Road 3	373936	164779	42.3	39.8	37.5	38.8	27.8	28.4	29.0	28.4	33.5	25.5	40.2	33.5	34.6	30.1	-	Triplicate Site with DT229a, DT229b and DT229c - Annual data provided for DT229c only
DT230a	Bath - Upper Bristol Road 4	373439	165098	44.6	44.5	39.3	40.4	36.0	34.1	36.0	38.7	47.7	43.4	38.8	35.3	-	-	-	Triplicate Site with DT230a, DT230b and DT230c - Annual data provided for DT230c only
DT230b	Bath - Upper Bristol Road 4	373439	165098	42.3	46.5	40.6	41.2	36.7	31.0	38.1	36.7	49.2	44.5	46.5	42.7	-	-	-	Triplicate Site with DT230a, DT230b and DT230c - Annual data provided for DT230c only
DT230c	Bath - Upper Bristol Road 4	373439	165098	37.8	45.9	37.5	43.5			36.2	38.9	49.5	42.7	45.0	35.6	40.5	35.2	-	Triplicate Site with DT230a, DT230b and DT230c - Annual data provided for DT230c only
DT231a	Bath - Upper Bristol Road 5	373480	165125	38.2	36.3	34.8	37.4	33.7	32.9	37.0	30.8	41.9		43.9	34.7	-	-	-	Triplicate Site with DT231a, DT231b and DT231c - Annual data provided for DT231c only
DT231b	Bath - Upper Bristol Road 5	373480	165125	40.2	35.8	34.6	39.4	31.9	31.5	35.3	30.2	40.4	38.7	41.4	38.9	-	-	-	Triplicate Site with DT231a, DT231b and DT231c - Annual data provided for DT231c only
DT231c	Bath - Upper Bristol Road 5	373480	165125	42.1	39.5	40.3	36.7	32.0	33.4	36.0	33.6	37.9	38.5	41.0	37.8	36.9	32.1	-	Triplicate Site with DT231a, DT231b and DT231c - Annual data provided for DT231c only

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DT232a	Bath - Lansdown Road 3	374942	165391	29.7	26.5	24.2	24.3	25.1	23.1	23.5	19.5	27.7	29.4	36.1	29.6	-	-	-	Triplicate Site with DT232a, DT232b and DT232c - Annual data provided for DT232c only
DT232b	Bath - Lansdown Road 3	374942	165391	30.0	25.8	27.3	23.7	24.2	23.2	23.5	20.3	27.8	33.3	39.2	29.8	-	-	-	Triplicate Site with DT232a, DT232b and DT232c - Annual data provided for DT232c only
DT232c	Bath - Lansdown Road 3	374942	165391	27.2	24.8	27.0	24.4	25.4	21.4	24.7	18.8	26.7	28.6	35.0	29.2	26.7	23.2	-	Triplicate Site with DT232a, DT232b and DT232c - Annual data provided for DT232c only
DT233a	Bath - Lansdown Road 4	374956	165359	27.4	28.8	26.7	31.6	23.7	22.7	24.4	21.3	29.7	26.0	29.3	27.2	-	-	-	Triplicate Site with DT233a, DT233b and DT233c - Annual data provided for DT233c only
DT233b	Bath - Lansdown Road 4	374956	165359	23.9	28.8	25.7	31.0	24.7	20.7	24.8	22.8	29.5	26.2	30.8	27.5	-	-	-	Triplicate Site with DT233a, DT233b and DT233c - Annual data provided for DT233c only
DT233c	Bath - Lansdown Road 4	374956	165359	25.2	28.7	25.3	30.7	24.7	22.5	25.5	20.3	29.2	25.1	30.3	26.5	26.4	22.9	-	Triplicate Site with DT233a, DT233b and DT233c - Annual data provided for DT233c only
DT234a	Bath - Gay Street 2	374806	165084	40.8	35.8	39.7		37.1	38.7	43.8	39.5	48.4	46.3	47.8	34.7	-	-	-	Triplicate Site with DT234a, DT234b and DT234c - Annual data provided for DT234c only
DT234b	Bath - Gay Street 2	374806	165084	41.3	36.9	39.3		40.2	38.0	37.5		47.1	47.7	48.9	37.5	-	-	-	Triplicate Site with DT234a, DT234b and DT234c - Annual data provided for DT234c only
DT234c	Bath - Gay Street 2	374806	165084	43.3	36.6			42.9	39.7	38.6	41.1	48.1	45.7	46.0	36.6	41.4	36.0	-	Triplicate Site with DT234a, DT234b and DT234c - Annual data provided for DT234c only
DT235a	Bath - Wells Road 4	374694	164288	39.7	44.0	39.4	41.5	53.0	33.4	37.3	33.2	38.5	44.5	45.3		-	-	-	Triplicate Site with DT235a, DT235b and DT235c - Annual data provided for DT235c only
DT235b	Bath - Wells Road 4	374694	164288	41.1	44.6	39.4	40.2	47.7		37.5	32.0		43.1	42.0		-	-	-	Triplicate Site with DT235a, DT235b and DT235c - Annual data provided for DT235c only
DT235c	Bath - Wells Road 4	374694	164288	44.0	42.9	39.2	37.6	46.1	35.5	33.1	32.1	42.6		41.6		40.3	35.1	-	Triplicate Site with DT235a, DT235b and DT235c - Annual data provided for DT235c only
DT236a	Bath - Pulteney Terrace	375668	164493	32.6	26.6	27.8	22.0	21.8	19.6	19.7	17.1	23.0	21.0	34.0	25.7	-	-	-	Triplicate Site with DT236a, DT236b and DT236c - Annual data provided for DT236c only
DT236b	Bath - Pulteney Terrace	375668	164493	31.6	25.7	27.7	23.4	21.8	19.9	18.9	16.5	22.4	20.8	33.4	25.9	-	-	-	Triplicate Site with DT236a, DT236b and DT236c - Annual data provided for DT236c only
DT236c	Bath - Pulteney Terrace	375668	164493	31.3	25.7	27.5	23.1	21.2		19.8	16.9	23.6	20.8	34.8	27.2	24.2	21.0	-	Triplicate Site with DT236a, DT236b and DT236c - Annual data provided for DT236c only
DT237	Bath - Broad Street 2	375000	165179	31.7	32.3	30.8		35.3	30.8	36.5	36.6	46.7	38.7	38.8	31.7	35.4	30.8	-	
DT238a	Bath - Broad Street 3	375001	165140	32.3	27.5	31.8	26.8	29.9	28.5	34.2	30.4	39.3	37.6	40.9	33.8	-	-	-	Triplicate Site with DT238a, DT238b and DT238c - Annual data provided for DT238c only
DT238b	Bath - Broad Street 3	375001	165140	31.2	27.4	28.6	25.2	31.1	25.7	39.7	33.4	39.5	39.2	38.8	32.8	-	-	-	Triplicate Site with DT238a, DT238b and DT238c - Annual data provided for DT238c only

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DT238c	Bath - Broad Street 3	375001	165140	33.4	27.1	30.7	26.6	31.3	28.2	33.5	33.7	38.4	40.7	41.8	32.6	32.9	28.6	-	Triplicate Site with DT238a, DT238b and DT238c - Annual data provided for DT238c only
DT239a	Bath - Broad Street 4	375008	165145	31.2	29.3	31.4	30.1	32.4	33.9	44.5	39.7	45.4	41.4	46.5	30.7	-	-	-	Triplicate Site with DT239a, DT239b and DT239c - Annual data provided for DT239c only
DT239b	Bath - Broad Street 4	375008	165145	34.5	29.2	31.2	30.0	32.3	34.4	44.6	39.1	44.6	42.9	43.7	32.0	-	-	-	Triplicate Site with DT239a, DT239b and DT239c - Annual data provided for DT239c only
DT239c	Bath - Broad Street 4	375008	165145	32.5	28.4	32.7	29.2	34.3	33.0	44.1	38.0	47.8	43.7	42.8	35.1	36.6	31.8	-	Triplicate Site with DT239a, DT239b and DT239c - Annual data provided for DT239c only
DT240a	Bath - Bathwick Street 2	375489	165450	28.9	17.0	28.2	22.9	24.9	17.6	11.1	9.8	14.7	17.9	30.5	27.0	-	-	-	Triplicate Site with DT240a, DT240b and DT240c - Annual data provided for DT240c only
DT240b	Bath - Bathwick Street 2	375489	165450	29.0	17.3	26.7	22.5	24.4	20.5	10.5	10.3	14.6	19.5	30.3	26.7	-	-	-	Triplicate Site with DT240a, DT240b and DT240c - Annual data provided for DT240c only
DT240c	Bath - Bathwick Street 2	375489	165450	27.7	13.1	25.2	23.6	24.7	18.7	10.9	9.2	14.6	19.5	30.9	26.4	20.8	18.1	-	Triplicate Site with DT240a, DT240b and DT240c - Annual data provided for DT240c only
DT241a	Bath - Bathwick Street 3	375520	165446	26.9	10.5	22.5	17.4	16.8	13.7	10.4	8.5	12.1	17.9	24.4	21.7	-	-	-	Triplicate Site with DT241a, DT241b and DT241c - Annual data provided for DT241c only
DT241b	Bath - Bathwick Street 3	375520	165446	27.2	14.3	23.2	18.6	16.7	14.6	10.0	9.3	13.8	16.8	24.5	21.8	-	-	-	Triplicate Site with DT241a, DT241b and DT241c - Annual data provided for DT241c only
DT241c	Bath - Bathwick Street 3	375520	165446	26.1	15.1	20.0	18.9	15.5	14.0	10.2	9.2	13.4	17.7	24.5	21.7	17.2	15.0	-	Triplicate Site with DT241a, DT241b and DT241c - Annual data provided for DT241c only
DT242a	Bath - Charlotte Street 2	374583	164974	25.5	24.6	21.7	22.5	18.8	16.8	18.0	16.7	23.3	22.7	26.8	24.2	-	-	-	Triplicate Site with DT242a, DT242b and DT242c - Annual data provided for DT242c only
DT242b	Bath - Charlotte Street 2	374583	164974	27.7	24.6	22.2	20.3	19.0	15.4	17.9	17.7	23.6	22.4	27.3	23.4	-	-	-	Triplicate Site with DT242a, DT242b and DT242c - Annual data provided for DT242c only
DT242c	Bath - Charlotte Street 2	374583	164974	26.1	24.5	21.3	21.1	19.6	15.3	17.9	16.9	23.7	23.6	24.2	22.7	21.7	18.8	-	Triplicate Site with DT242a, DT242b and DT242c - Annual data provided for DT242c only
DT243a	Bath - Sydney Place	375625	165312	32.3	17.0	31.1	24.8	27.0	25.1	18.8	16.9	21.2	23.8	31.4	26.0	-	-	-	Triplicate Site with DT243a, DT243b and DT243c - Annual data provided for DT243c only
DT243b	Bath - Sydney Place	375625	165312	31.7	16.8	30.5	25.4	26.2	23.0	17.5	15.5	20.3	22.7	32.0	24.7	-	-	-	Triplicate Site with DT243a, DT243b and DT243c - Annual data provided for DT243c only
DT243c	Bath - Sydney Place	375625	165312	29.4	14.0	29.9	26.4	26.3	22.9	16.4	15.4	20.8	25.9	31.7	23.6	24.0	20.9	-	Triplicate Site with DT243a, DT243b and DT243c - Annual data provided for DT243c only
DT244	Bath - Whiteway	372494	163165	22.6	18.1	19.4	18.5	17.2	18.9		15.8	21.8	19.9	26.1	15.6	19.5	16.9	-	
DT245	Bath - Whiteway 2	372401	163212	17.8	23.6	23.7	22.2	20.7	19.7	23.2	17.4	25.9	23.8	29.3	22.1	22.4	19.5	-	
DT246a	Bath - Dorchester Street 2	375186	164372	39.5	34.3	37.3	34.1	38.2	30.4	36.2	30.8		42.1		35.9	-	-	-	Triplicate Site with DT246a, DT246b and DT246c - Annual data provided for DT246c only

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DT246b	Bath - Dorchester Street 2	375186	164372	37.7	36.7	34.9	33.8	37.4	28.9	36.7	28.1	38.2	42.7		37.0	-	-	-	Triplicate Site with DT246a, DT246b and DT246c - Annual data provided for DT246c only
DT246c	Bath - Dorchester Street 2	375186	164372	37.9	33.8	36.7	32.0	36.1	29.6	35.9	32.3	39.6	39.4		34.8	35.7	31.1	-	Triplicate Site with DT246a, DT246b and DT246c - Annual data provided for DT246c only
DT247a	Bath - Monmouth Place 2	374627	164924	33.7	30.3	29.4	28.5	28.2	25.1	25.5	26.0	33.5	29.8	33.4	32.1	-	-	-	Triplicate Site with DT247a, DT247b and DT247c - Annual data provided for DT247c only
DT247b	Bath - Monmouth Place 2	374627	164924	33.4	29.2	30.9	28.8	28.2	25.0	28.4	26.0	33.8	31.7	37.7	28.9	-	-	-	Triplicate Site with DT247a, DT247b and DT247c - Annual data provided for DT247c only
DT247c	Bath - Monmouth Place 2	374627	164924	34.0	31.4	30.5	28.8	28.4	23.7	27.9	26.7	33.2	30.7	35.9	32.8	30.0	26.1	-	Triplicate Site with DT247a, DT247b and DT247c - Annual data provided for DT247c only
DT248a	Bath - Chapel Row 2	374711	164931	35.4	33.6	35.2	33.9	37.9	36.4	48.6	42.2		49.1	47.4	40.5	-	-	-	Triplicate Site with DT248a, DT248b and DT248c - Annual data provided for DT248c only
DT248b	Bath - Chapel Row 2	374711	164931	38.3	33.3	36.2	35.1	39.2	34.0	48.3	43.2	54.8	56.2	55.3	38.7	-	-	-	Triplicate Site with DT248a, DT248b and DT248c - Annual data provided for DT248c only
DT248c	Bath - Chapel Row 2	374711	164931	35.7	32.3	36.5	35.2	37.8	36.0	49.4	41.9	56.1	46.3	58.1	41.2	42.1	36.6	35.4	Triplicate Site with DT248a, DT248b and DT248c - Annual data provided for DT248c only
DT276	Bath - Twerton High Street	372783	164624								27.2	41.4	30.2	37.6	37.5	34.8	30.3	-	
DT278	Bath - CAZ Background 1	374420	165288									11.2	12.2	16.1	15.3	13.7	10.8	-	
DT279	Bath - CAZ Background 2	375365	165176									10.6	12.1	17.3	14.0	13.5	10.7	-	
DT280	Bath - Background Alice Park	376478	166696									9.3	10.9	13.6	12.4	11.5	9.1	-	
DT288	Bath - Victoria Buildings - façade	374045	164760										29.4	46.1	36.3	37.2	29.1	-	
DT091	Bathampton High Street	377683	166408	22.1	12.9	21.0	20.6	19.1	18.8	19.2	18.4	26.5	24.0	28.1	22.8	21.1	18.4	-	
DT166	Bathampton, A36	377543	165924	24.8	17.3	23.4	21.4	19.0	19.9	22.4		19.6	20.2	26.3	22.8	21.6	18.8	-	
DT058	Batheaston – London Road West A	377643	167365	29.7	20.5	48.6	21.1	19.6	16.6		17.3	20.4	20.8	24.5	25.0	24.0	20.9	-	
DT094	Batheaston - London Road West B	377290	167097	24.8	13.3	24.0	20.5	20.4	23.2	22.8	24.9	26.6	24.8	27.0	23.2	23.0	20.0	-	
DT130	Batheaston - London Road West C	377802	167456	29.6	17.3	24.2	19.9	22.2	20.5	20.8	18.3	23.0	24.5	26.1	25.0	22.6	19.7	-	
DT163	Batheaston, A4 Box Road	378911	167259	24.9	11.7	13.4	16.1	15.2	12.3	13.0	12.2	11.7	19.7	23.1	17.7	15.9	13.9	-	

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DT191	Batheaston - Mill Lane	377339	167065	17.4	10.9	14.4	16.1	16.2	15.3	20.0	18.0	22.5	18.6	23.8	18.4	17.6	15.3	-	
DT134	Farrington Gurney 2	362891	155485	36.1	33.7	39.0	40.7	41.4	36.1	38.8	32.1	42.8	30.5	40.2	31.2	36.9	32.1	-	
DT136	Farrington Gurney 3	362884	155790	31.9	25.6	32.0	37.5	32.6	34.3	41.1	32.1	40.6	31.2	38.7	25.4	33.6	29.2	-	
DT138	Farrington Gurney 5	362983	155459	29.1	28.8	29.7	38.3	34.3	33.9	39.2	24.9	40.5	26.8	37.5	28.2	32.6	28.4	-	
DT257	Farrington Gurney 7	363931	155313	20.4	22.3	23.4	24.2	21.2	20.5	20.2	17.9	24.6	18.9	25.4	21.4	21.7	18.9	-	
DT033	Keynsham	364803	168237	16.3	12.8	12.7	12.2	7.6	7.6		7.3	9.1	9.2	15.4	11.1	11.1	9.6	-	
DT063	Keynsham – Station Road	365409	168846	24.6	23.1	22.3	24.0	20.2	19.3		18.1	28.1	25.9	30.0	25.6	23.7	20.7	-	
DT064	Keynsham – Charlton Road B	365305	168657	31.4	25.0	29.6	27.4	23.7	22.0	26.0	21.6	27.4	27.7	30.7	26.5	26.6	23.1	-	
DT065	Keynsham - Charlton Rd A	365399	168701	30.4	23.9	28.3	24.3	22.4	22.4	24.6	20.9	29.0	25.2	33.1		25.9	22.5	-	
DT066	Keynsham – High Street A	365360	168815	33.5	31.0	32.1	27.6	29.5	32.4	29.8	25.5	33.7	35.4	39.2	29.2	31.6	27.5	-	
DT067	Keynsham - Somerfield	365457	168496	33.3	27.6	29.7	25.9	24.5	25.6		21.9	29.1	29.2	35.8	29.1	28.3	24.6	-	
DT068	Keynsham - Temple St	365489	168363	22.1	16.3	20.0	18.1	16.5	17.4	16.6	15.3	19.2	12.8	26.9	19.8	18.4	16.0	-	
DT069	Keynsham – Rock Road	365428	168435	24.8	22.3	24.0	23.0	19.5	21.7	21.8	18.6	24.9	21.9	30.6	24.4	23.1	20.1	-	
DT070	Keynsham – Bath Hill	365496	168521	25.0	20.8	22.0	21.1	17.7	17.8	19.0	15.9	22.7	19.4	24.6	16.8	20.2	17.6	-	
DT107	Keynsham - Bath Hill South	365710	168339	36.3	32.2	32.7	28.3	32.7	30.9	32.9	29.5	37.1	33.6	36.1	29.4	32.7	28.4	-	
DT112	Keynsham - Ashton Way	365375	168594	24.2	21.4	23.1	18.6	17.7	19.6	21.1	17.3	24.7	25.2	31.7	20.9	22.1	19.3	-	
DT113	Keynsham - West View Road	365217	168505	19.5	16.7	17.3	15.3	10.6	11.1		10.0	13.1	12.9	19.6	16.2	14.7	12.8	-	
DT114	Keynsham - Victoria Church	365414	168684	22.8	19.6	23.6	19.1	18.1			19.6	23.8	23.5	30.4	21.7	22.2	19.3	-	
DT115	Keynsham - High Street B	365447	168586	17.9	16.7	17.5	16.1	13.2	13.4	11.1	10.7	13.9		24.2	18.3	15.7	13.7	-	
DT116	Keynsham - Fish Bar	365462	168533	22.6	20.4	20.4	19.3	16.4	13.4	15.8	13.0	20.2	21.1	25.2		18.9	16.5	-	
DT141	Keynsham A4	366921	168096	30.5	28.0	29.5	26.4	24.2	25.9	26.6		30.9		37.9	29.6	28.9	25.2	-	

DT ID	Site Name	X OS Grid Ref (Easting)	Y OS Grid Ref (Easting)	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual Mean: Raw Data	Annual Mean: Annualised and Bias Adjusted (0.87)	Annual Mean: Distance Corrected to Nearest Exposure	Comment
DT266	Keynsham - Avon Mill Lane	365784	168710		22.0	22.4		18.0	18.5	20.8	17.7	24.1	19.9		21.4	20.6	17.9	-	
DT277	Keynsham - Background	365622	168563									12.7		17.8	15.1	15.2	11.2	-	
DT259	Midsomer Norton - Redfield Road	366144	154071	19.6	20.3	19.7	21.1	14.6								19.1	14.7	-	
DT174	Pensford 3	361769	164034	41.5	37.3	35.1	35.7	31.8	35.7	39.8	34.3	41.3	37.6	41.3	30.7	36.8	32.0	-	
DT258	Radstock - Frome Road	368921	154912	30.1	29.9	28.2	25.8	31.5	23.8	24.9	21.9	24.6	20.7	31.9	28.1	26.8	23.3	-	
DT075	Saltford - The Crown	368375	166988	29.3	26.9	27.1	25.0	23.1	21.0	23.5	20.2	31.6	28.5	33.4	27.8	26.5	23.0	-	
DT077	Saltford - Bath Road	368778	166687	16.2	21.9	25.1	21.4	21.9	22.2	22.2	19.2	24.1	24.1	27.0	21.5	22.2	19.3	-	
DT096a	Temple Cloud 1	362219	157923	48.8	45.7	48.2	49.0	43.4	49.2	57.9	55.1	55.1	39.0	61.6	40.3	-	-	-	Triplicate Site with DT096a, DT096b and DT096c - Annual data provided for DT096c only
DT096b	Temple Cloud 1	362219	157923	48.8	50.1	51.5	54.5	49.7	53.5	64.1	55.0	66.5	42.3	67.4	42.3	-	-	-	Triplicate Site with DT096a, DT096b and DT096c - Annual data provided for DT096c only
DT096c	Temple Cloud 1	362219	157923	47.2	49.0	47.5	52.3	45.3	43.8	54.5	51.5		37.4	58.9	40.2	50.8	**44.2**	-	Triplicate Site with DT096a, DT096b and DT096c - Annual data provided for DT096c only
DT108a	Temple Cloud 2	362179	158055	36.2	35.4	36.7	31.2	35.3	33.9	32.7	31.0	41.7	32.8	40.1	32.6	-	-	-	Triplicate Site with DT108a, DT108b and DT108c - Annual data provided for DT108c only
DT108b	Temple Cloud 2	362179	158055	34.8	35.3	36.5	34.5	34.3	32.5	35.5	30.2	42.0	32.6	40.0	34.0	-	-	-	Triplicate Site with DT108a, DT108b and DT108c - Annual data provided for DT108c only
DT108c	Temple Cloud 2	362179	158055	32.7	35.4	36.3	32.6	33.8	31.9	32.4	31.6	42.5	31.9	41.8	29.1	34.8	30.3	-	Triplicate Site with DT108a, DT108b and DT108c - Annual data provided for DT108c only
DT109a	Temple Cloud 3	362344	157658	32.8	35.2	34.5	38.2	33.3	30.6	33.3	30.3	35.3	26.9	41.8	28.0	-	-	-	Triplicate Site with DT109a, DT109b and DT109c - Annual data provided for DT109c only
DT109b	Temple Cloud 3	362344	157658	33.2	34.6	33.9	38.0	31.6	31.8	33.0	31.3	36.5	31.2	40.6	29.4	-	-	-	Triplicate Site with DT109a, DT109b and DT109c - Annual data provided for DT109c only
DT109c	Temple Cloud 3	362344	157658	34.3	34.8	34.2	39.7	32.6	32.5	32.9	26.9	39.3	26.9	44.5	32.1	33.8	29.4	-	Triplicate Site with DT109a, DT109b and DT109c - Annual data provided for DT109c only
DT252a	Temple Cloud 9	362195	158007	36.0	39.0	36.4	39.9	34.7	35.9	41.6		49.9	34.4	46.4	33.5	-	-	-	Triplicate Site with DT252a, DT252b and DT252c - Annual data provided for DT252c only
DT252b	Temple Cloud 9	362195	158007	39.0	36.9	36.5	36.6	35.6	37.2	40.7	35.6	50.5	33.3	48.5	33.9	-	-	-	Triplicate Site with DT252a, DT252b and DT252c - Annual data provided for DT252c only
DT252c	Temple Cloud 9	362195	158007	39.3	40.6	39.0	40.3	38.7	40.3	42.3	34.9	49.5	32.2	47.5	35.6	39.1	34.0	-	Triplicate Site with DT252a, DT252b and DT252c - Annual data provided for DT252c only

DT ID	Site Name	X OS Grid Ref (Easting)	Y OS Grid Ref (Easting)	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual Mean: Raw Data	Annual Mean: Annualised and Bias Adjusted (0.87)	Annual Mean: Distance Corrected to Nearest Exposure	Comment
DT253a	Temple Cloud 10	362243	157846	45.1	39.9	45.1	43.2	38.8	40.7	42.1	37.7	46.1		53.5	32.6	-	-	-	Triplicate Site with DT253a, DT253b and DT253c - Annual data provided for DT253c only
DT253b	Temple Cloud 10	362243	157846	49.0	40.0	49.3	43.2	40.5	44.2	42.4	42.5	68.8	45.6	58.5	39.4	-	-	-	Triplicate Site with DT253a, DT253b and DT253c - Annual data provided for DT253c only
DT253c	Temple Cloud 10	362243	157846	43.3	40.5	49.0	43.5	51.6	43.1	44.6	41.1	54.5		56.6	41.1	45.2	39.4	**47.3**	Triplicate Site with DT253a, DT253b and DT253c - Annual data provided for DT253c only
DT254a	Temple Cloud 11	362262	157799	33.2	39.8	35.6	39.7	42.5	36.8	34.2	36.3	48.0	34.7	46.4	37.5	-	-	-	Triplicate Site with DT254a, DT254b and DT254c - Annual data provided for DT254c only
DT254b	Temple Cloud 11	362262	157799	37.2	41.8	37.4	43.0	42.3	37.3	45.1	37.9	51.8	34.2	46.8	38.8	-	-	-	Triplicate Site with DT254a, DT254b and DT254c - Annual data provided for DT254c only
DT254c	Temple Cloud 11	362262	157799	37.3	42.9	35.4	41.0	41.3	39.9	32.5	32.2	43.7	32.0	45.5	37.2	39.4	34.3	-	Triplicate Site with DT254a, DT254b and DT254c - Annual data provided for DT254c only
DT255a	Temple Cloud 12	362284	157741	38.9	37.6	45.2	38.0	44.3	42.3	38.8	40.6		40.3	56.2	38.5	-	-	-	Triplicate Site with DT255a, DT255b and DT255c - Annual data provided for DT255c only
DT255b	Temple Cloud 12	362284	157741		38.9	46.5	41.9	47.0	44.9	37.6	42.4	52.8	36.0	55.2	40.5	-	-	-	Triplicate Site with DT255a, DT255b and DT255c - Annual data provided for DT255c only
DT255c	Temple Cloud 12	362284	157741	37.0	38.5	45.8	46.4	45.4	40.1	40.9	41.9	50.8	34.8	60.2	37.3	43.1	37.5	-	Triplicate Site with DT255a, DT255b and DT255c - Annual data provided for DT255c only
DT260	Temple Cloud 14	362289	157786	12.6	14.2	13.6	13.7	9.7								12.7	9.8	-	
DT261	Temple Cloud 15	362280	157781	19.3	21.4	20.0	24.7	18.0								20.7	16.0	-	
DT262	Temple Cloud 16	362364	157756	13.4	11.2	10.6	12.0	9.2								11.3	8.7	-	
DT263	Temple Cloud 17	362306	157719	24.1	22.9	23.3										23.4	16.1	-	
DT264	Temple Cloud 18	362367	157638	28.5	25.9	27.1	26.6	27.2								27.1	20.9	22.5	
DT284	Temple Cloud 26	362211	157929										27.4	38.8	24.9	30.4	23.7	-	
DT268	Westfield 4	367064	153332					22.6	23.8	21.8	22.0	26.5	19.5	36.2	24.8	24.7	24.2	-	
DT269	Westfield 5	367321	153823					14.8	12.2	11.1	12.8	13.7	13.5	18.7	17.8	14.3	14.0	-	
DT270	Westfield 6	367434	154008					20.6	19.0	17.9	19.3	22.3	20.5	28.8	23.4	21.5	21.1	-	
DT271	Westfield 7	368494	154742					25.7	18.1	23.3	20.9	31.2	26.6	30.9	26.8	25.4	25.0	-	
DT032	Whitchurch	361242	167652	36.0	33.8	34.0	31.7	28.1	26.8	30.3	25.0		37.4	41.0	30.8	32.2	28.1	-	

DT ID	Site Name	X OS Grid Ref (Easting)	Y OS Grid Ref (Easting)	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual Mean: Raw Data	Annual Mean: Annualised and Bias Adjusted (0.87)	Annual Mean: Distance Corrected to Nearest Exposure	Comment
DT098	Whitchurch 2	361276	167555	27.7	26.8	28.6	30.7	23.7	27.8	27.6	24.5	31.0			23.7	27.2	23.7	-	
DT100	Whitchurch 4	361326	167606	25.6	22.2	27.1	24.0	22.3	22.9	23.2	19.5	27.7	23.5	33.5	21.8	24.4	21.3	-	
DT101	Whitchurch 5	361235	167824	37.5	32.1	38.3	31.9	34.0	31.9	30.0	28.5	37.9	39.6	46.6	30.9	34.9	30.4	-	

☒ **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.TG16.**

☒ **Local bias adjustment factor used.**

☐ **National bias adjustment factor used.**

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

☒ **Bath & North East Somerset Council confirm that all 2021 diffusion tube data has been uploaded to the Diffusion Tube Data Entry System.**

Notes:

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

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

See Appendix C for details on bias adjustment and annualisation.

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

New or Changed Sources Identified Within Bath & North East Somerset Council During 2021

Bath & North East Somerset Council has not identified any new sources relating to air quality within the reporting year of 2021.

Additional Air Quality Works Undertaken by Bath & North East Somerset Council During 2021

During 2021, Bath & North East Somerset Council carried out further monitoring for Benzene and also using indicative Zephyr and AQMesh analysers results are detailed in Appendix F.

A further assessment was carried out in Keynsham and Saltford to determine if the AMQAs can be revoked, details are given in Appendix G.

Appendix H details additional monitoring studies which were carried out in Temple Cloud which investigated the resident's exposure at the properties closest to the AQMA. This included monitoring in the rear gardens to see if concentrations were low enough to recommend ventilation from the rear of the property and also internal concentrations to see if the high levels of pollution from the road were also seen indoors.

QA/QC of Diffusion Tube Monitoring

The diffusion tubes were analysed by Gradko in 2017-2021, and by Somerset Scientific Services in 2012-2016. The method of analysis is 20% triethanolamine (TEA) in water. Gradko is UKAS accredited for the analysis of the diffusion tubes and all the laboratories participate in the AIR-PT scheme formally the Workplace Analysis Scheme for Proficiency (WASP). The latest AIR-PT report for nitrogen dioxide for the laboratory indicates a performance classification as satisfactory for all periods.

Diffusion Tube Annualisation

During 2021 17 diffusion tubes (17 sites) had data capture less than 75%. To estimate the annual mean from the short-term monitoring period the Diffusion Tube Processing Tool was used. Four sites were selected from the national network within 50 miles of Bath and greater that 85% data capture; Charlton Mackrell (27miles from Bath), Swindon Walcot (28miles from Bath), Bristol St Paul's (11 miles from Bath) and Newport (30 miles from Bath). Table C.2 shows the adjustment factors and which locations they are applied to.

Diffusion Tube Bias Adjustment Factors

The diffusion tube data presented within the 2021 ASR have been corrected for bias using an adjustment factor. Bias represents the overall tendency of the diffusion tubes to under or over-read relative to the reference chemiluminescence analyser. LAQM.TG16 provides guidance with regard to the application of a bias adjustment factor to correct diffusion tube monitoring. Triplicate co-location studies can be used to determine a local bias factor based on the comparison of diffusion tube results with data taken from NO_x/NO_2 continuous analysers. Alternatively, the national database of diffusion tube co-location surveys provides bias factors for the relevant laboratory and preparation method.

Bath & North East Somerset Council have applied a local bias adjustment factor of 0.87 to the 2021 monitoring data. This was calculated from a co-located triplicate site at the Bath A4 Roadside site (CM8), details of the calculation are in Table C.3. A summary of bias adjustment factors used by Bath & North East Somerset Council over the past five years is presented in Table C.1.

A local bias factor is where this represents local conditions, and previously in Bath and North East Somerset this has been calculated using co-located diffusion tubes at the London Road site (CM1). The national bias factor is a combined factor which averages a number of local bias factor studies for the analytical laboratory and diffusion tube preparation method. Guidance on the choice of bias factor is given in LAQM.TG16 (Box 7.11) and includes consideration on diffusion tube locations compared with the co-location site, exposure period and number of studies contributing to the national bias factor.

The guidance in the LAQM.TG16 tends to suggest that the choice of a single bias correction factor is required for all diffusion tubes from the local authority. However, the bias correction factor chosen will only be appropriate for locations where similar traffic characteristics, street geometry, and distance from kerbside are repeatable. If a bias factor from a co-located site that is closer to a background location is used, the application of its

bias factor to roadside locations will be likely to provide an underestimate of true concentrations and vice-versa for using a bias factor, derived from a roadside or kerbside site, that is applied to monitoring locations, further away from the kerb, the results are likely to be overestimated.

In 2021 Bath & North East Somerset Council have used the local bias factor as this better represents the diffusion tubes in the Bath AQMA. The national bias factor for 2021 was lower (0.84)[11] and therefore the local bias factor represents a worst case result at locations which are less representative of the local bias. In 2017-18 and 2020 the local bias adjustment factors were used to correct the diffusion tube data as they were the same as or higher than the national bias factor leading to a worse case result. In 2019 the national bias factor was used as there was no local factor available due to the co-location site being moved resulting in low data capture. The choice of factor will be reviewed annually.

Table C.1 – Bias Adjustment Factor

Monitoring Year	Local or National	If National, Version of National Spreadsheet	Adjustment Factor
2021	Local	-	0.87
2020	Local	-	0.89
2019	National	06/20	0.92
2018	Local	-	0.96
2017	Local	-	1.00

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.

For diffusion tube sites which have been located in roadside locations with concentrations above 36 µg/m^3, the distance adjustment has been calculator using the Diffusion Tube

[11] National Bias Adjustment Spreadsheet 03/22

Data Processing Tool. A local background of 8.5 µg/m^3 was used in Bath (from Alexandra Park, DT23) and a background concentration taken from the background maps was used for sites outside of Bath. Table C.4 below shows the distances used in the calculator, background concentrations and the concentration at the façade for these sites. Urban centre, urban background and sites at the building façade have not been adjusted.

In Bath & North East Somerset 7 sites with concentrations above 36 µg/m^3 were distanced adjusted; DT042, DT060, DT198, DT222, DT224, DT248 and DT253. A further 2 sites were adjusted as the site was located further from the road (e.g. on the side of a building) than the nearest façade to ensure they were not above 36 µg/m^3 (DT055 and DT264).

Precision check for triplicate tubes

The precision of a diffusion tube is the ability of the measurements to be reproduced. Precision cannot be corrected for but can be improved by careful handling of the diffusion tubes in the laboratory and in the field. For triplicate sites (3 diffusion tubes at one location) it is possible to check the precision of the results using a spreadsheet tool[12] Diffusion tubes are considered to have "good" precision where the coefficient of variation of triplicate diffusion tubes for eight or more periods during the year is less than 20%, and the average coefficient of variation of all monitoring periods is less than 10%.

In 2021 there were 48 triplicate sites in Bath & North East Somerset. Two triplicate sites in Bath and North East Somerset showed poor precision for individual periods in June (DT017) and in September (DT253). All other sites showed good precision on individual periods. The average coefficient of variation was <10% (good) at all sites.

2019 Data update

The data from 2019 was re-calculated using the Diffusion Tube Data Processing Tool. This showed a difference for the annual average calculations for some of the new triplicate sites where there was not full data capture for each diffusion tube across the year (difference is due to now calculating a monthly average for the site before the annual average, previously [on advice from the helpdesk] an annual average was calculated for each tube before the triplicate sites were averaged). This marginally affected 17 diffusion tubes but has not changed the outcomes of the previous assessment. The annual

[12] Local Bias adjustment tool website.

average concentrations have been updated in Table A.4 in Appendix A. The Diffusion Tube Data Processing Tool also highlighted that one of the annual correction factors was incorrect, this only affected one diffusion tube, this has also been updated.

QA/QC of Automatic Monitoring

The Council's continuous analysers follow a QA/QC programme; the Bath A4 Roadside NO_2 (CM8) site is an AURN affiliated site and are managed as part of that network. The Guildhall (CM2), Windsor Bridge (CM3), Chelsea House (CM4) and Bath A4 Roadside PM_{10} (CM8) sites follow the QA/QC programme below.

- There are daily checks on the data to ensure analysers and communications are working and faults are reported as soon as possible.
- The sites are inspected and calibrated checks are made once a month by a member of the Environmental Quality Team at Bristol City Council, using certified traceable gases. The sites are also visited by a trained AURN Local Site Operator (LSO) to change the filters and check the analysers.
- The analysers are also serviced and re-calibrated at six monthly intervals by the equipment suppliers.
- The results of all service, maintenance and calibration checks are held and used for ratification and scaling of the data.

In 2016-2021 the continuous data for Guildhall, Windsor Bridge, Chelsea House and Bath A4 Roadside PM_{10} was corrected by Air Quality Data Management (AQDM).

Recent live data can be viewed on the Council's Air Quality Data – Live website.

PM_{10} and $PM_{2.5}$ Monitoring Adjustment

The PM_{10} measurements are made using an unheated BAM1020 and have been corrected by dividing by 1.2 as recommended in the LAQM.TG16. The $PM_{2.5}$ measurements are made using a heated BAM1020 and are not corrected.

Automatic Monitoring Annualisation

All automatic monitoring locations within Bath & North East Somerset Council recorded data capture of greater than 75% therefore it was not required to annualise any monitoring data.

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 NO_2 fall-off with distance calculator available on the LAQM Support website.

No automatic NO_2 monitoring locations within Bath & North East Somerset Council required distance correction during 2021.

Table C.2 – Annualisation Summary (concentrations presented in µg/m^3)

Site ID	Annualisation Factor Bristol St Paul's	Annualisation Factor Charlton Mackrell	Annualisation Factor Newport	Annualisation Factor Swindon Walcot	Average Annualisation Factor	Raw Data Annual Mean	Annualised Annual Mean	Comments
DT276	0.8977	1.0854	0.9670	1.0541	1.0011	34.8	34.8	
DT278	0.8226	0.9824	0.8788	0.9453	0.9073	13.7	12.4	
DT279	0.8226	0.9824	0.8788	0.9453	0.9073	13.5	12.3	
DT280	0.8226	0.9824	0.8788	0.9453	0.9073	11.5	10.5	
DT288	0.7972	1.0125	0.8600	0.9205	0.8975	37.2	33.4	
DT277	0.7927	0.9040	0.8151	0.8545	0.8416	15.2	12.8	
DT259	0.9488	0.8268	0.9392	0.8319	0.8867	19.1	16.9	
DT260	0.9488	0.8268	0.9392	0.8319	0.8867	12.7	11.3	
DT261	0.9488	0.8268	0.9392	0.8319	0.8867	20.7	18.3	
DT262	0.9488	0.8268	0.9392	0.8319	0.8867	11.3	10.0	
DT263	0.8556	0.7242	0.8348	0.7521	0.7917	23.4	18.6	
DT264	0.9488	0.8268	0.9392	0.8319	0.8867	27.1	24.0	
DT284	0.7972	1.0125	0.8600	0.9205	0.8975	30.4	27.3	
DT268	1.0717	1.1888	1.0736	1.1777	1.1279	24.7	27.8	
DT269	1.0717	1.1888	1.0736	1.1777	1.1279	14.3	16.1	
DT270	1.0717	1.1888	1.0736	1.1777	1.1279	21.5	24.2	
DT271	1.0717	1.1888	1.0736	1.1777	1.1279	25.4	28.7	

Table C.3 – Local Bias Adjustment Calculation

	Local Bias Adjustment Input 1	Local Bias Adjustment Input 2	Local Bias Adjustment Input 3	Local Bias Adjustment Input 4	Local Bias Adjustment Input 5
Periods used to calculate bias	12				
Bias Factor A	0.87 (0.82 - 0.93)				
Bias Factor B	15% (8% - 23%)				
Diffusion Tube Mean (µg/m^3)	30.9				
Mean CV (Precision)	2.7%				
Automatic Mean (µg/m^3)	26.8				
Data Capture	99%				
Adjusted Tube Mean (µg/m^3)	27 (25 - 29)				

Notes:

A single local bias adjustment factor has been used to bias adjust the 2021 diffusion tube results.

Table C.4 – NO_2 Fall off With Distance Calculations (concentrations presented in µg/m^3)

Site ID	Distance (m): Monitoring Site to Kerb	Distance (m): Receptor to Kerb	Monitored Concentration (Annualised and Bias Adjusted)	Background Concentration	Concentration Predicted at Receptor	Comments
DT042	1.0	2.5	40.5	8.5	34.6	
DT055	2.6	1.1	27.9	8.5	32.0	
DT060	0.5	4.2	40.0	8.5	28.1	
DT198a, DT198b, DT198c	1.0	1.4	37.8	8.5	35.8	
DT222a, DT222b, DT222c	1.8	2.3	38.1	8.5	*36.5*	*Predicted concentration at Receptor within 10% the AQS objective.*
DT224a, DT224b, DT224c	1.1	1.5	43.1	8.5	**41.2**	*Predicted concentration at Receptor above AQS objective.*
DT248a, DT248b, DT248c	1.6	2.0	36.6	8.5	35.4	
DT253a, DT253b, DT253c	3.6	1.5	39.4	5.2	**47.3**	*Predicted concentration at Receptor above AQS objective.*
DT264	3.0	2.0	20.9	5.2	22.5	

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

Figure D.1 – Map of the AQMAs in Bath

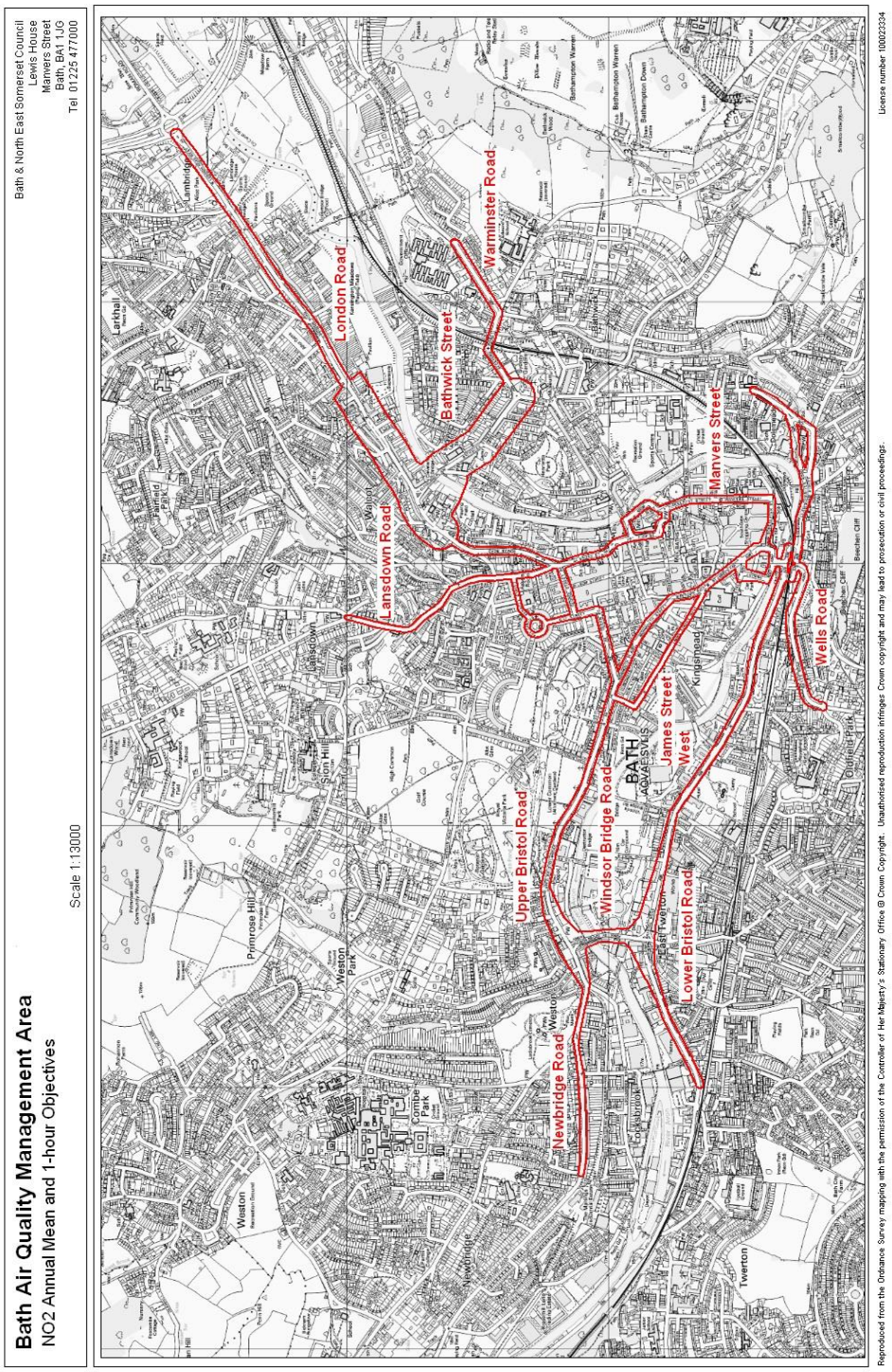


Figure D.2 – Map of the automatic monitoring locations

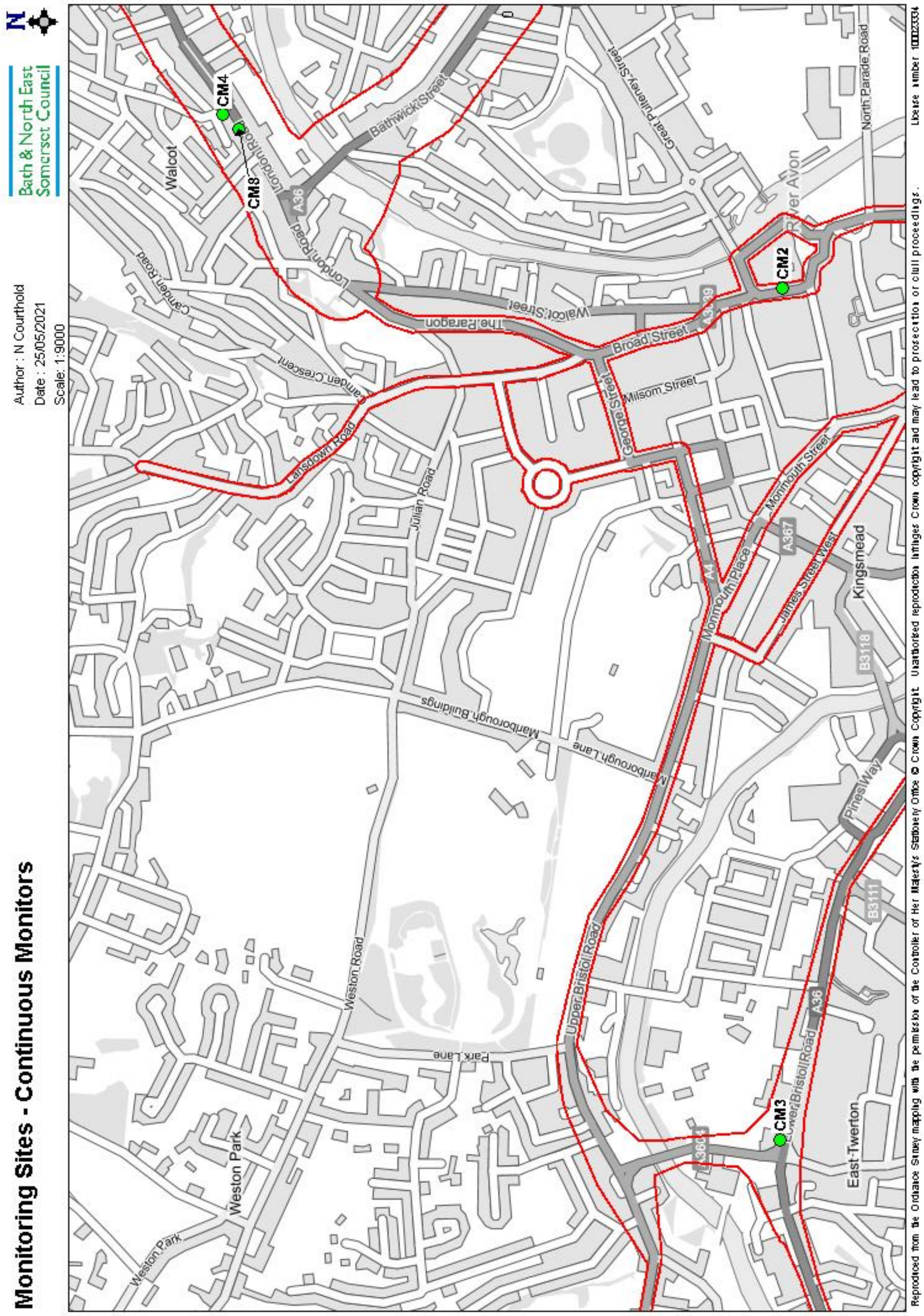


Figure D.3 – Map of the non-automatic monitoring sites and AQMA – Bath – Centre

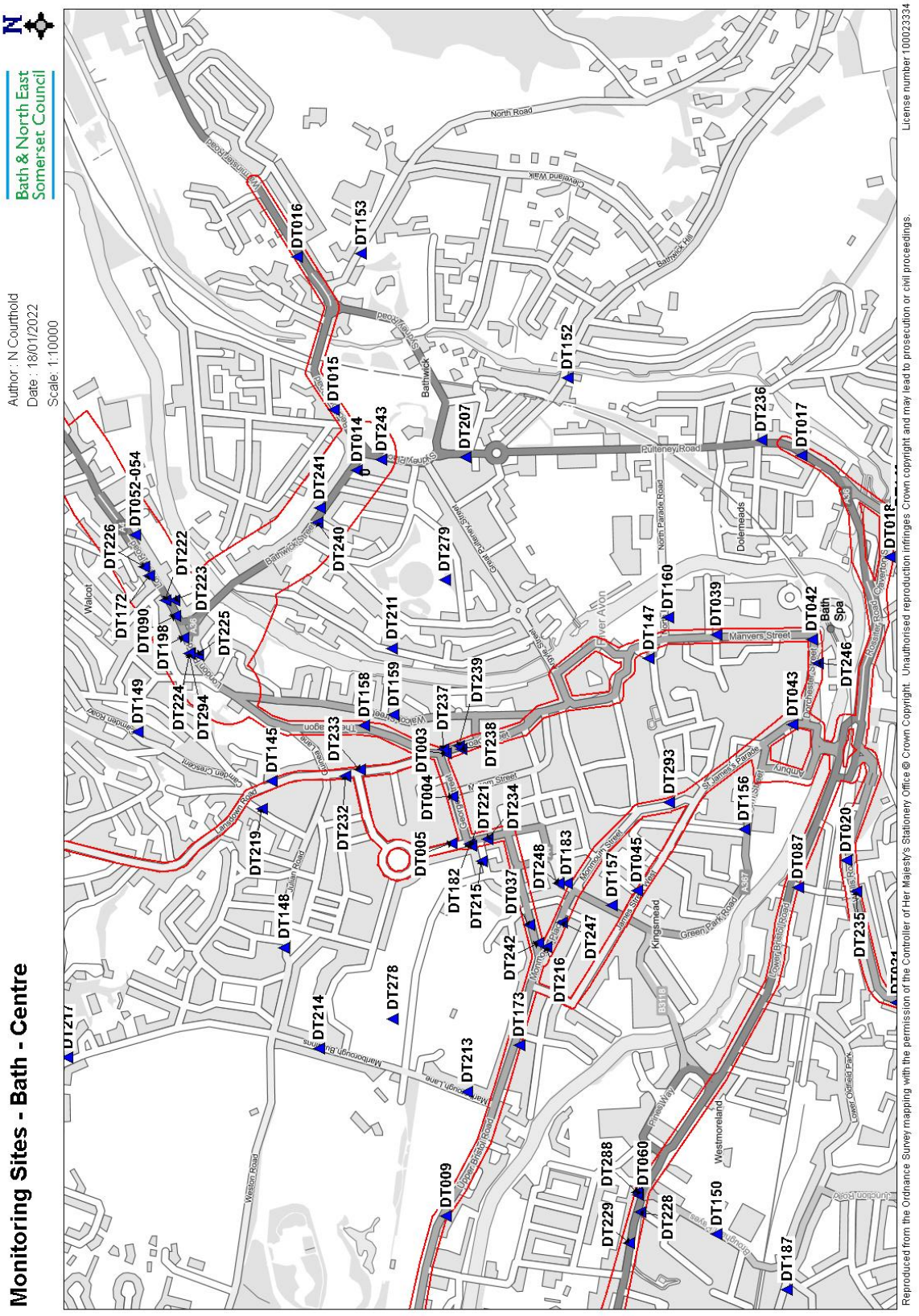


Figure D.4 – Map of the non-automatic monitoring sites and AQMA – Bath – North

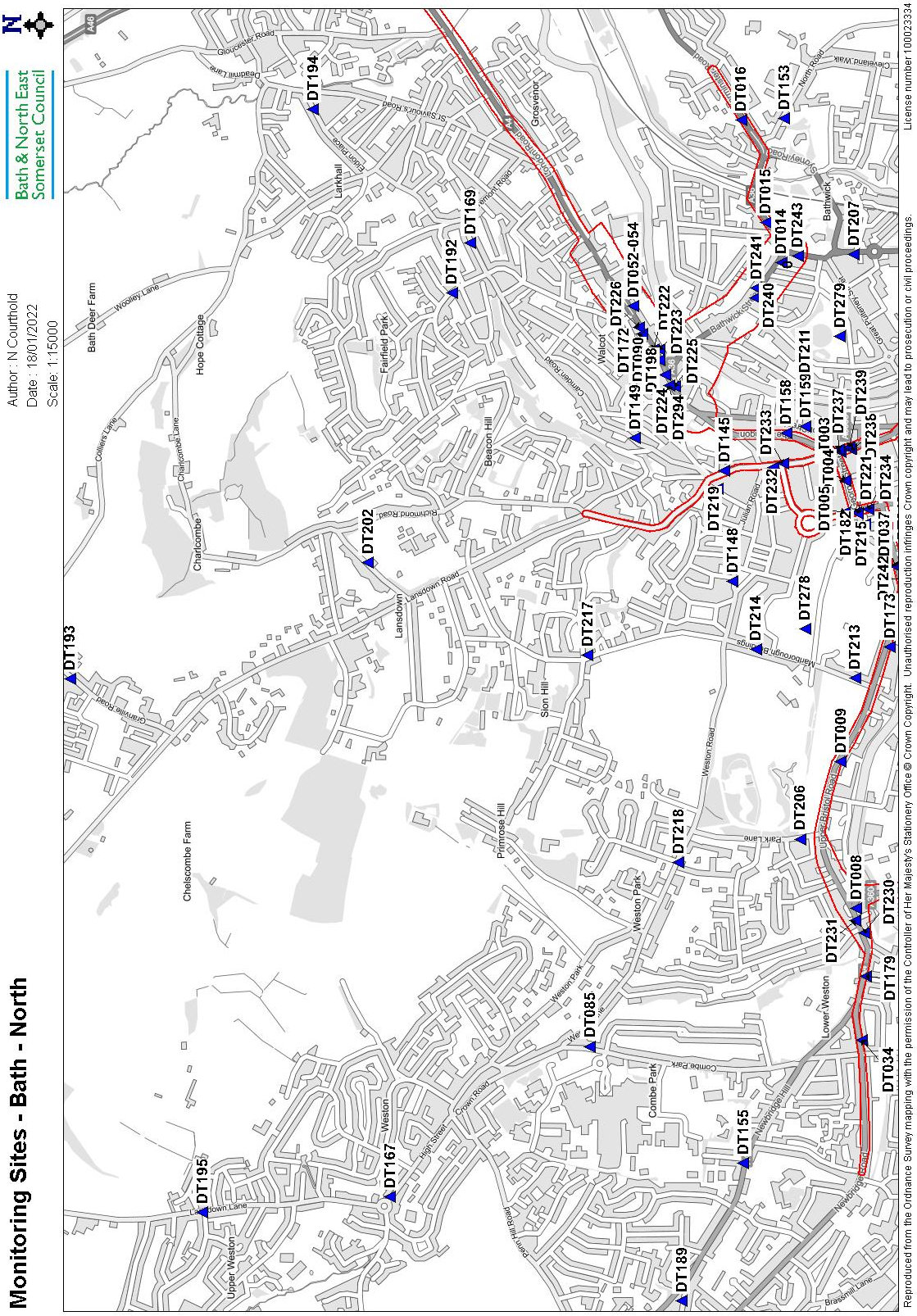


Figure D.5 – Map of the non-automatic monitoring sites and AQMA – Bath – South

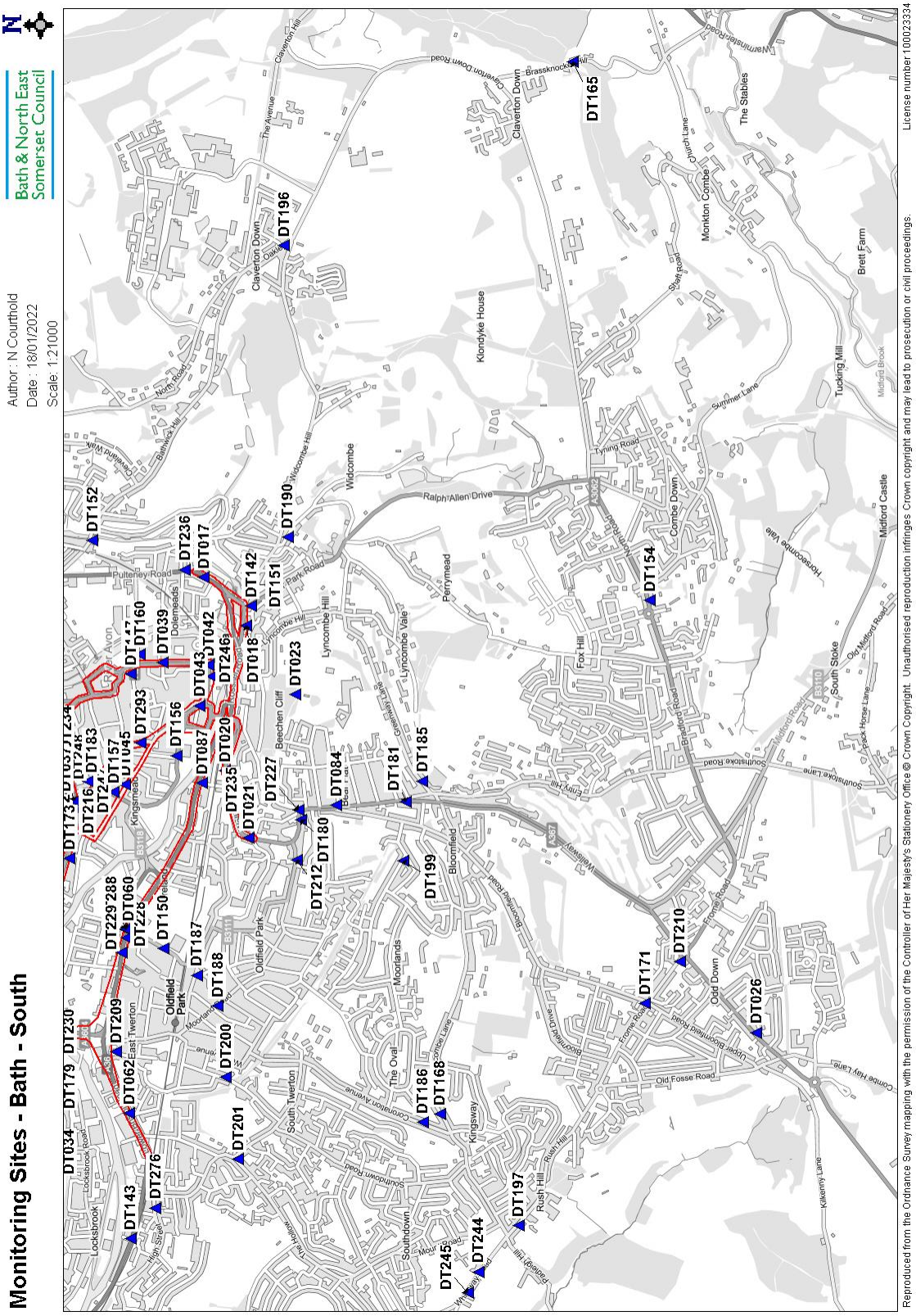


Figure D.6 – Map of the non-automatic monitoring sites and AQMA – Bathampton, Batheaston and Lambridge

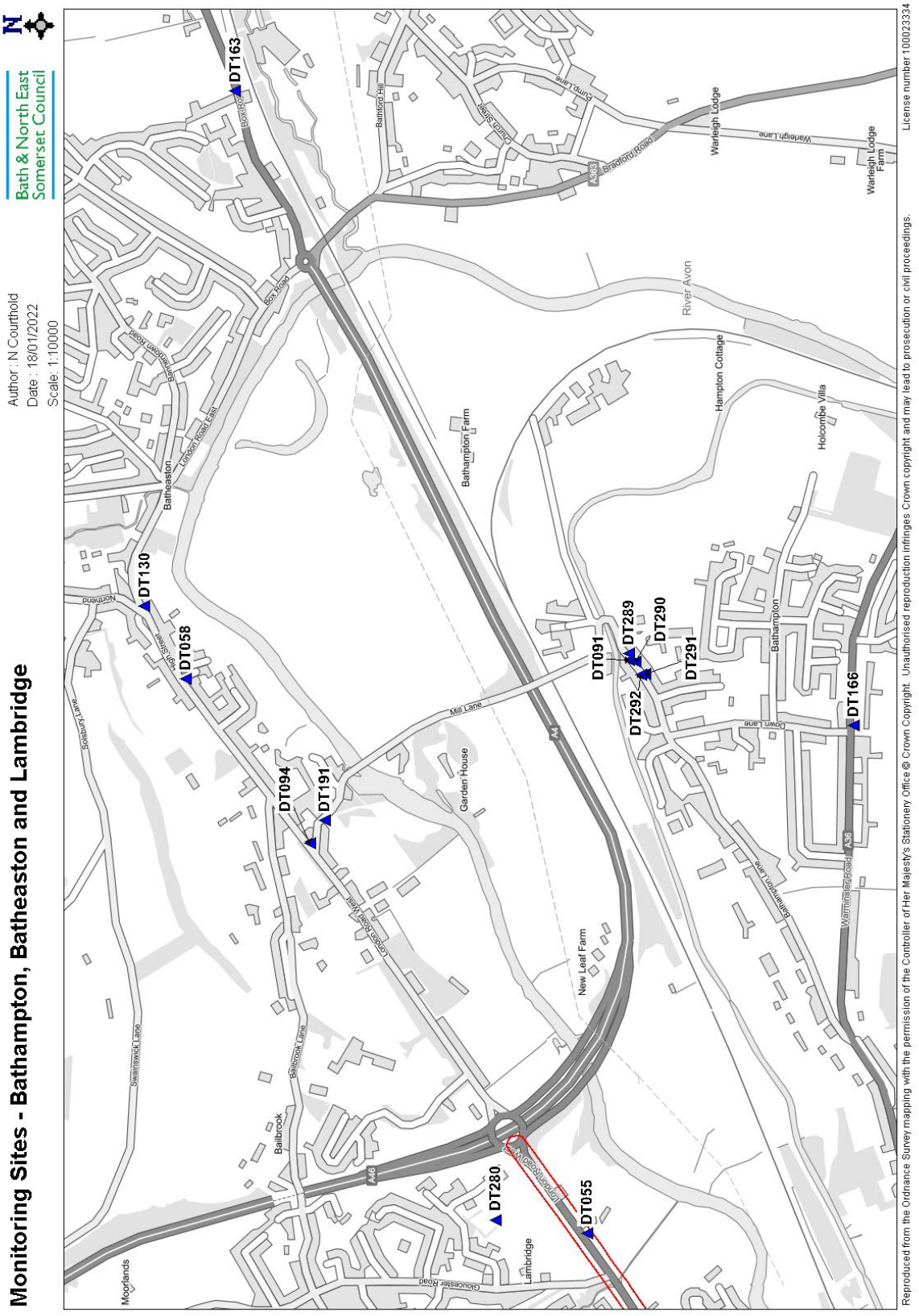


Figure D.7 – Map of the non-automatic monitoring sites and AQMA – Farrington Gurney

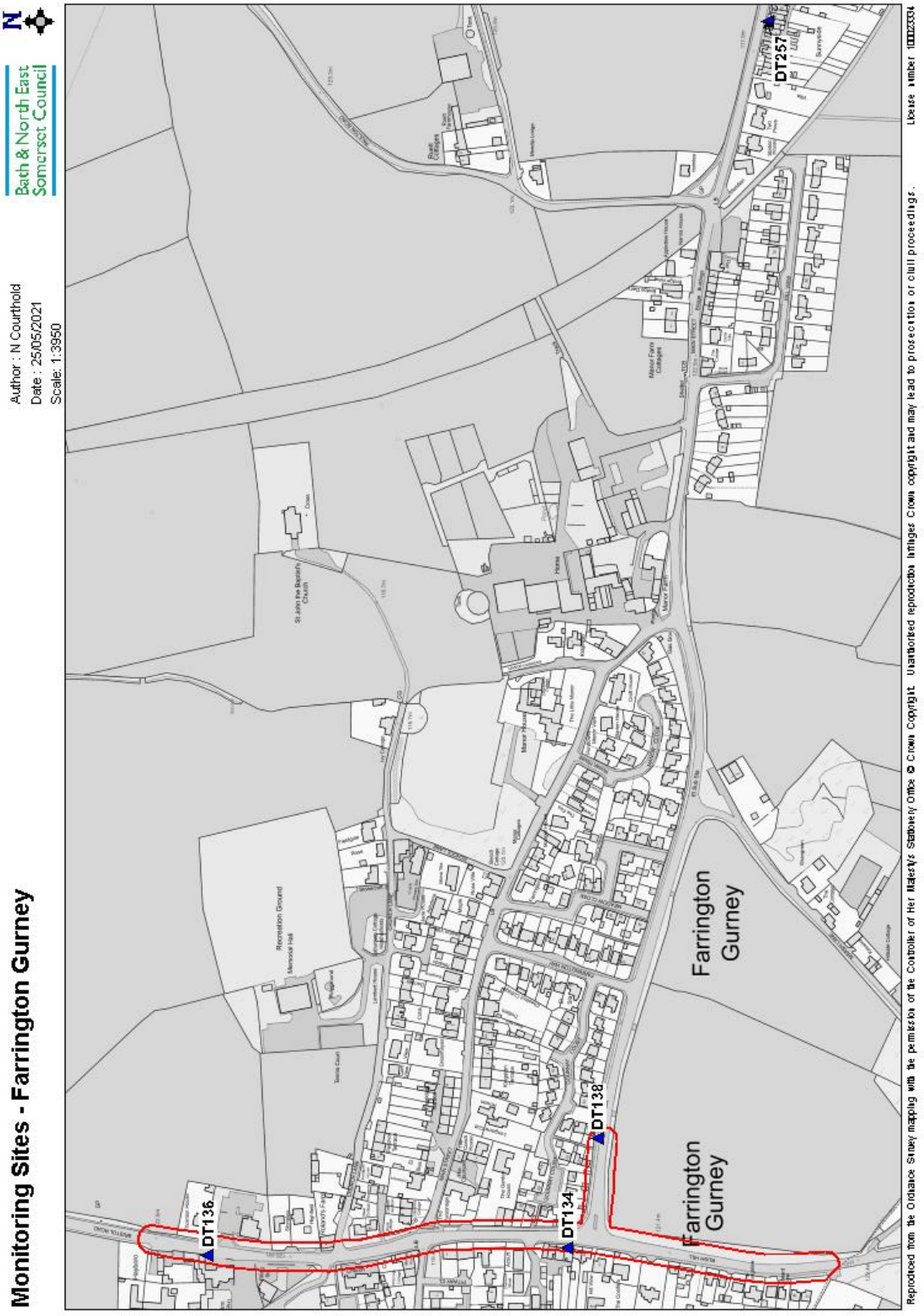


Figure D.8 – Map of the non-automatic monitoring sites and AQMA – Keynsham

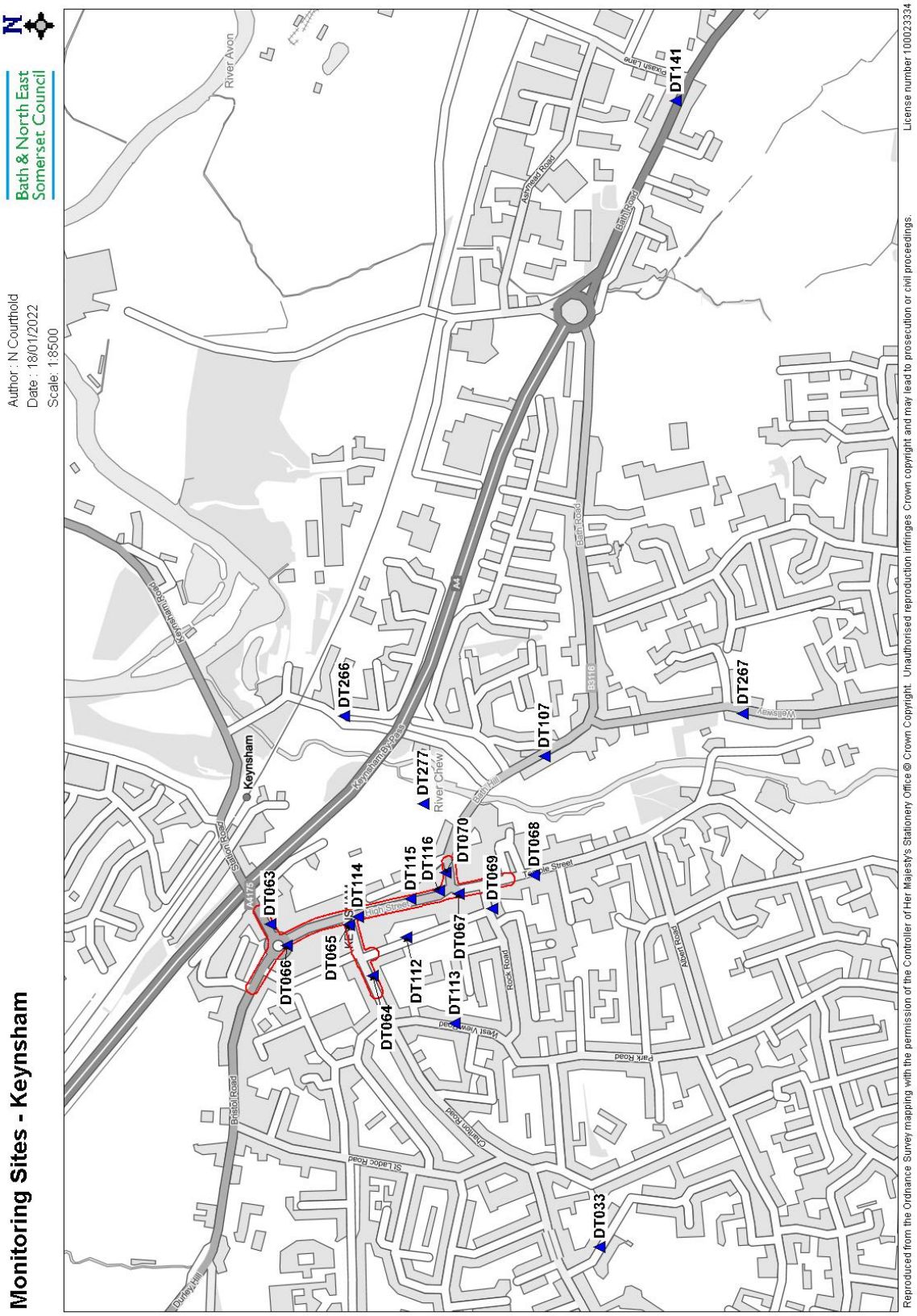


Figure D.9 – Map of the non-automatic monitoring site – Pensford

Figure D.10 – Map of the non-automatic monitoring sites– Midsomer Norton, Radstock and Westfield

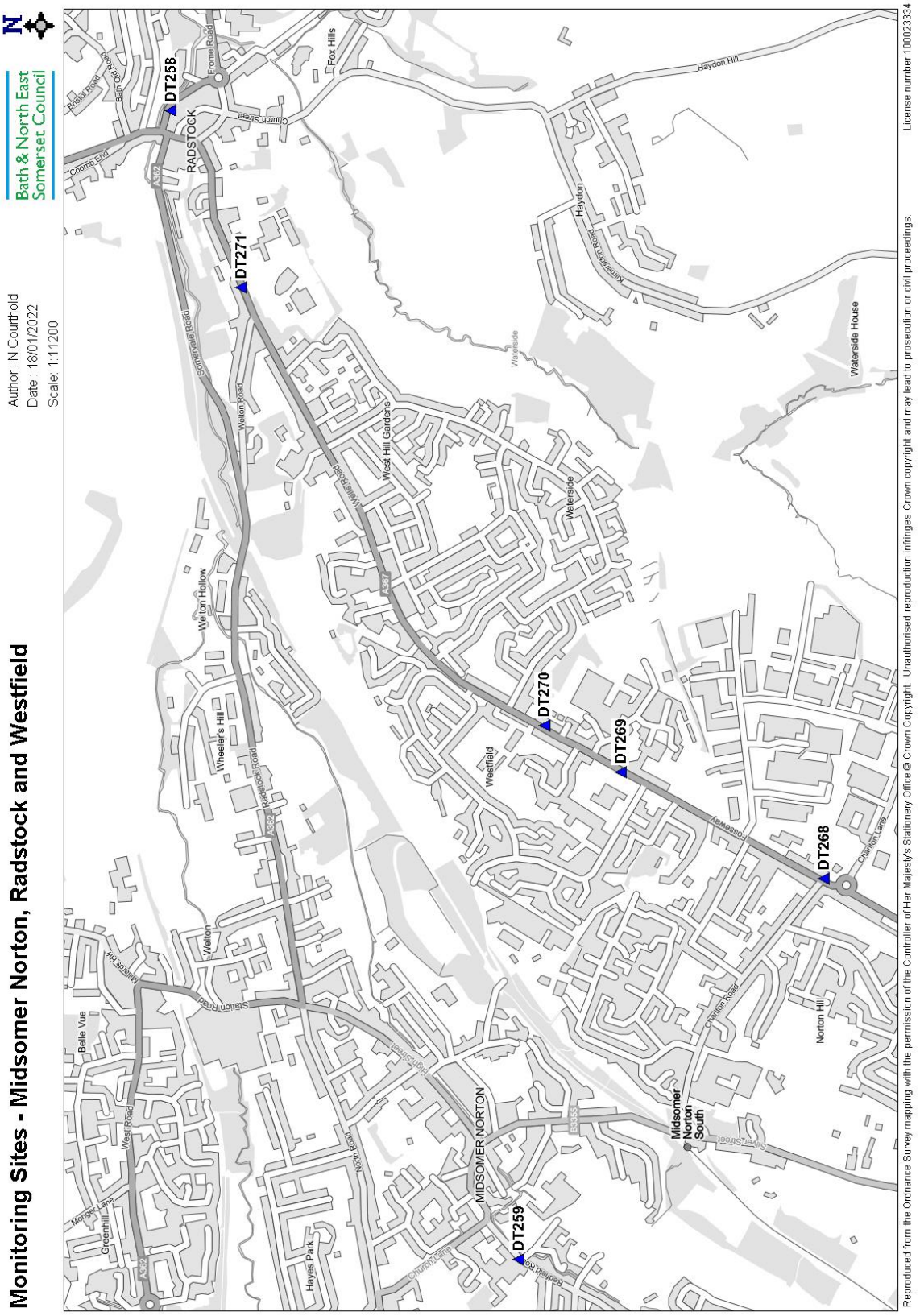


Figure D.11 – Map of the non-automatic monitoring sites and AQMA – Saltford

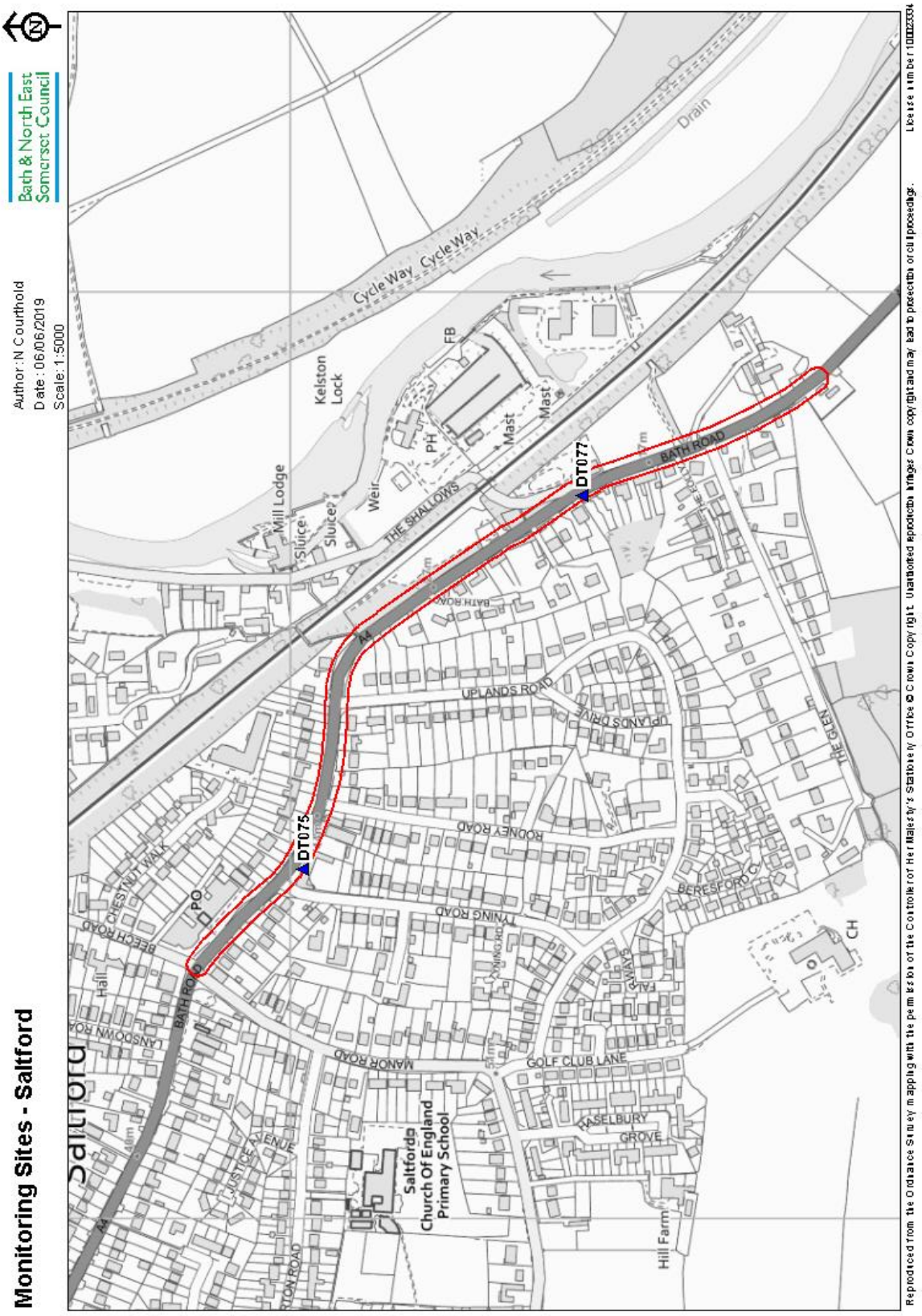


Figure D.12 – Map of the non-automatic monitoring sites and AQMA – Temple Cloud

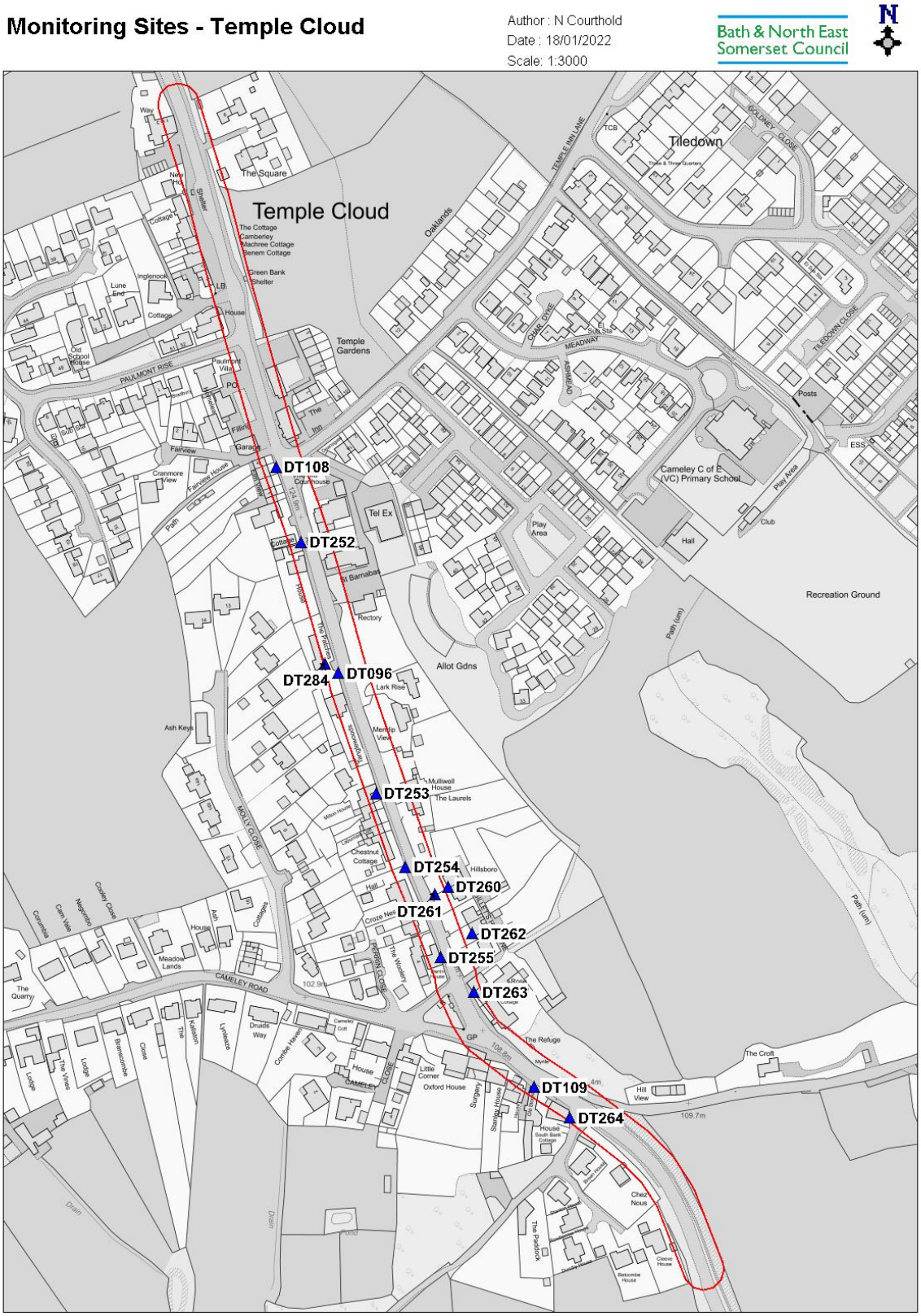
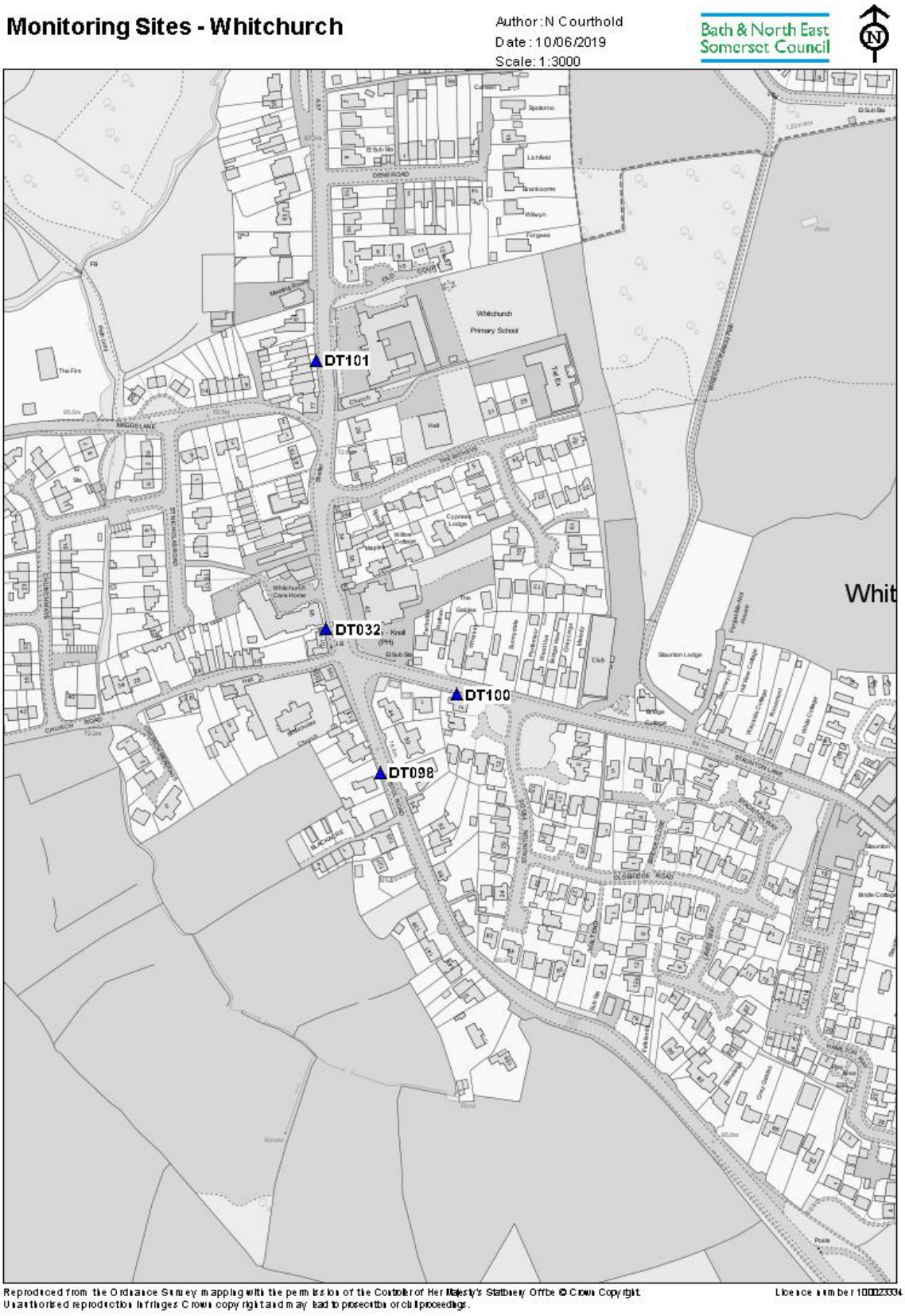


Figure D.13 – Map of the non-automatic monitoring sites – Whitchurch



Appendix E: Summary of Air Quality Objectives in England

Table E.1 – Air Quality Objectives in England[13]

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

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

Appendix F: Other monitoring

Benzene

Whilst we are fully compliant with the national air quality objective with respect to benzene, Bath & North East Somerset Council has a benzene monitor which is part of the national non-automatic hydrocarbon network. This uses a pumped benzene tube (a benzene tube which has a fixed amount of air being drawn through it). Until June 2019 the site was located at the London Road continuous site (CM1), due to the site closing the monitor was relocated to a roadside new roadside enclosure on the London Road (Bath A4 Roadside, CM8) in October 2019.

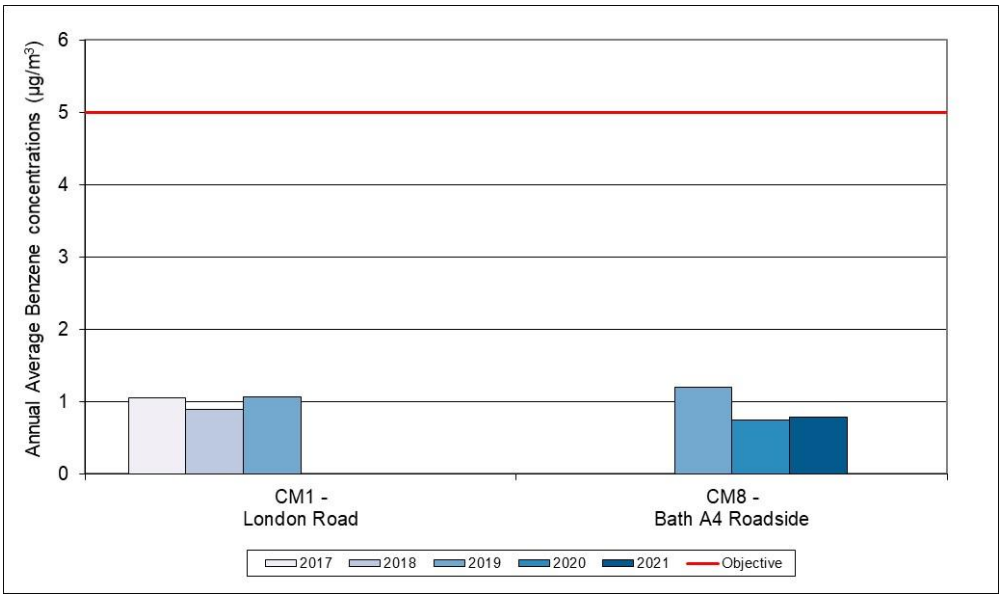
Monitoring results for benzene are shown in Table F.1 and Figure F.1. The results show that there are no exceedances of the benzene objectives during 2021. Trends in benzene show that levels are gradually decreasing (Figure F.1).

Table F.1 - Annual Mean Results: Benzene Monitoring (µg/m3)

Site ID	Site Name	Data Capture for 2021 (%)	2017	2018	2019	2020	2021
CM1	London Road	-	1.1	0.9	1.1	-	-
CM8	Bath A4 Roadside	100	-	-	1.2	0.8	0.8

Note: Benzene Annual Mean Objective is 5 µg/m^3

Figure F.1 – Trends in Benzene Monitoring



AQMesh Monitoring

The AQMesh analyser is an indicative analyser which uses electrochemical sensors to measure NO_2 concentrations and optical sensors to monitor particulates. As an 'indicative' monitor, the monitor is used to identify the timing of peaks and troughs, changes in concentrations due to e.g. a traffic scheme being implemented and approximate values. If high concentrations are indicated further investigations will take place. It is possible that co-locating with our more accurate 'reference method' analysers (e.g. CM3 Windsor Bridge) will improve the accuracy (not precision) of the data by providing a local calibration factor that can be applied to the data retrospectively. It is also noted that the limit of detection of the NO_2 sensor is 10 µg/m^3. In areas where the background concentrations are low and NO_2 concentrations are often likely to fall below 10µg/m^3 e.g. overnight, there is a higher uncertainty in the results.

The AQMesh analyser was compared to the continuous analysers at Windsor Bridge. Scaling has been carried out for the NO_2 concentrations as there was a large offset on the raw data. This was done using the gradient and offset from the best fit line when the sensors were co-located at Windsor Bridge. No scaling has been carried out on the PM_{10} results

In 2021 the AQMesh analyser was located at Keynsham – Avon Mill Lane (AQM25). The results from these locations are shown in Table F.2 (NO_2).and Table F.3 (PM_{10} and $PM_{2.5}$). Due to PM_{10} sensor issues and poor NO_2 correlation monitoring using the AQMesh analysers ceased in May 2021.

Table F.2 – NO_2 Monitoring Results: AQMesh analysers

Site	Period	Mean NO_2 (µg/m^3)	NO_2 1-Hour Means > 200µg/m^3 (2)	Data Capture 2021 (%) (1)
AQM25 – Keynsham Avon Mill Lane	Feb-April	23	0 (95)	23 (100)
Co-located DT266	Feb-April	22	-	
Co-located DT266	Feb-Dec	18	-	

Notes:

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

(1) 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%), data capture for the period is shown in brackets.

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

Table F.3 – PM Monitoring Results: AQMesh analysers

Site	Period	Annual Mean PM_{10} (µg/m^3)	PM_{10} 24- hour Means >50 µg/m^3 (2)	Annual Mean $PM_{2.5}$ (µg/m^3)	Data Capture 2021 (%) (1)
AQM25 – Keynsham Avon Mill Lane	Feb-April	25	3 (30)	8	23 (100)

Notes:

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

Zephyr Monitoring

The Zephyr analyser is an indicative analyser which uses electrochemical sensors to measure NO_2 concentrations and optical sensors to monitor particulates. The Zephyr also has a fan which draws air onto the sensors. It is possible that co-locating with our more accurate 'reference method' analysers (e.g. CM3 Windsor Bridge) will improve the accuracy (not precision) of the data by providing a local calibration factor that can be applied to the data retrospectively.

There are 2 Zephyr analysers which are part of the Clean Air Plan work and are being used to adjust timings of the traffic lights in Gay Street/Queen Square to discourage traffic in Gay Street when pollution concentrations are high. One Zephyr is permanently in Gay Street linked to the traffic lights and the second acts as a 'Gold Pod' to ensure the units are calibrated to a continuous analyser. This Zephyr alternates between the continuous analyser at Windsor Bridge (CM3) and Gay Street.

The traffic lights are set to trigger based on the 15-minute NO_2 concentration; the trigger would shorten the cycle time. The trigger was initially set by reviewing the local continuous sites comparing the highest 15 minutes averages with the annual averages 5 years between 2015-2019. A best fit line was put through the data and the concentration at 36 µg/m^3 was calculated. The threshold was adjusted during the year to take into account the verification with data at Windsor Bridge (Table F.4).

During 2021 regular comparisons between the continuous analyser, the Gold Pod and the permanent analyser were made and example is shown below. As seen in Figure F.2, the NO_2 concentrations recorded from 'Jane' (permanent Gay Street Zephyr) and 'Verity' (Gold Pod) have a strong, positive association with one another. The concentrations recorded trace almost identically to one another with there being very few outliers in the data. Figure F.3 shows the NO_2 concentrations recorded at Windsor Bridge (continuous analyser site) and 'Verity'. There is a positive linear association between the two data sets, however, there is more variability between the concentrations recorded. The continuous analyser often records more exaggerated peaks and troughs than the Zephyr, however, there is a good trace between the two.

Figure F.2 – 'Jane' and 'Verity' 15-minute average comparison

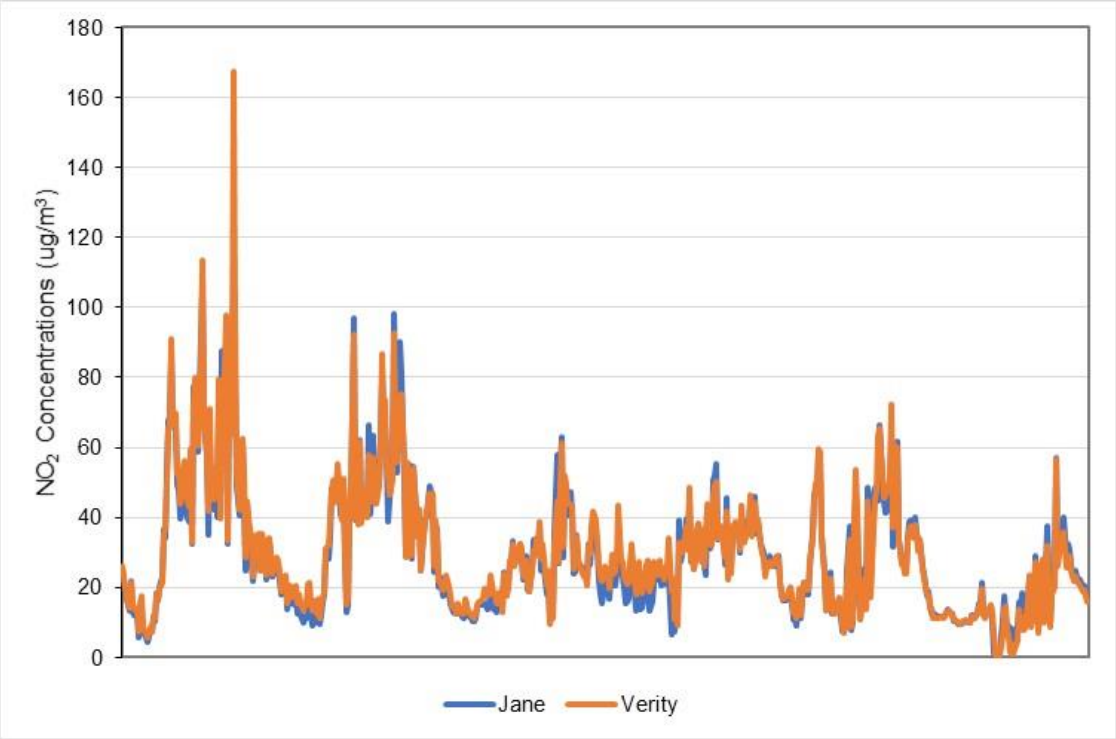
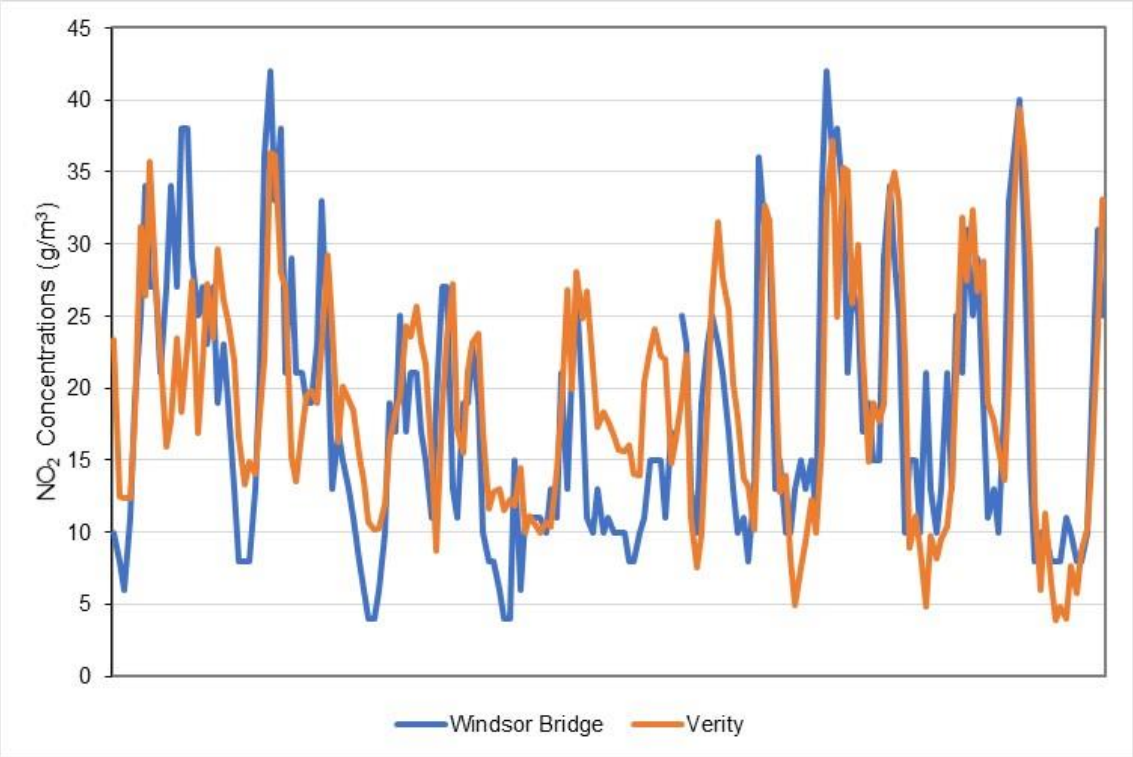


Figure F.3 – Windsor Bridge and Verity hourly average comparison



The nitrogen dioxide results from the analysers are shown in Table F.5 and for PM_{10} and $PM_{2.5}$ in Table F.6.

Table F.4 – NO_2 Thresholds to trigger a traffic light change (µg/m^3)

Date set	28/04/2021	21/10/2021	23/11/2021	03/12/2021
15 minute NO_2 threshold	180	170	148	118

Table F.5 – NO_2 Monitoring Results: Zephyr analysers

Site	Mean NO_2 (µg/m^3)	NO_2 1-Hour Means > 200µg/m^3 (2)	Data Capture 2021 (%) (1)
Gay Street	29	0	100
Gay Street 2	28	0 (77)	27.8
Windsor Bridge	23	0 (71)	74.8

Notes:

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

(1) 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%).

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

Table F.6 – PM Monitoring Results: Zephyr analysers

Site	Annual Mean PM_{10} (µg/m^3)	PM_{10} 24- hour Means >50 µg/m^3 (2)	Annual Mean $PM_{2.5}$ (µg/m^3)	Data Capture 2021 (%) (1)
Gay Street	13	0	9	100
Gay Street 2	12	0 (22)	8	27.8
Windsor Bridge	12	0 (22)	8	75

Notes:

(1) 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%).
(2) If the period of valid data is less than 85%, the 90.4th percentile of 24-hour means is provided in brackets.

Appendix G: Supporting Technical Information: Assessment of Keynsham and Saltford for revoking AQMAs

Revoking an AQMA

Under the Environment Act 1995 Part IV (section 83), an AQMA can be revoked if following a subsequent air quality review it is shown that the air quality objectives are being achieved and are likely to remain so.

The Technical Guidance (LAQM.TG16) states "The revocation of an AQMA should be considered following three consecutive years of compliance with the relevant objective as evidenced through monitoring. Where NO_2 monitoring is completed using diffusion tubes, to account for the inherent uncertainty associated with the monitoring method, it is recommended that revocation of an AQMA should be considered following three consecutive years of annual mean NO_2 concentrations being lower than 36µg/m^3 (i.e. within 10% of the annual mean NO_2 objective)." The 2021 ASR highlighted that the Keynsham and Saltford AQMAs had a number of years' monitoring below the objective.

This section reviews the monitoring in Keynsham and Saltford since the declaration of the AQMAs and considers any local developments which may have an impact on air quality in the AQMAs.

Keynsham

In July 2010 Bath & North East Somerset Council declared an AQMA in Keynsham following a detailed assessment which showed there were a number of locations on the High Street which exceeded the air quality objective for annual mean NO_2. In 2016 an AQAP was approved which included a number of measures to reduce NO_2 concentrations, these are detailed in Table 2.2. As part of the Action Plan a Trial one-way scheme commenced in May 2017 (Keynsham 1 in Table 2.2). Monitoring commenced at additional locations in late August 2016. The results showed a reduction in monitored concentrations is between 3 to 27% when comparing similar periods before and after the introduction of the one-way system. Following positive feedback from the public consultation, in February 2019 the Council's Cabinet took the decision to make the arrangements permanent.

Further public realm work to improve the pedestrian environment commenced in 2021 and was completed in early 2022.

Monitoring

Monitoring of NO_2 has continued using diffusion tubes since the 2006. Further sites were added to monitor the effect of the one-way scheme including the alternative route along Ashton Way and possible diversion routes. Site details are given in Table A.2 and results from the past 5 years are detailed in Table A.4. A long-term trend is shown in Figure G.1 and Figure G.2 below.

The results show that the air quality objective is met at all locations and results from the diffusion tubes have been below 36 µg/m^3 since 2018. The trend continues to be downwards.

Local Developments

Keynsham has a number of developments on the outskirts of the towns, air quality assessments which have accompanied the planning applications have shown that the NO_2 concentrations will remain below the air quality objectives.

Conclusions

As the monitoring data shows the air quality objective continues to be met and there is a downward trend in concentrations and no local developments are likely to significantly increase pollution concentrations in the AQMA it is recommended that the Keynsham AQMA is revoked.

Salford

In May 2013 Bath & North East Somerset Council declared an AQMA in Saltford following a detailed assessment which showed there were a number of locations on the A4 Bath Road which exceeded the air quality objective for annual mean NO_2. In 2016 an AQAP was approved which included a number of measures to reduce NO_2 concentrations these are detailed in Table 2.2. As the A4 is a key route into Bath, Saltford will have indirectly benefitted from the improvement in vehicle emissions from those vehicles upgrading to enter the Bath CAZ.

Monitoring

Monitoring of NO_2 has continued using diffusion tubes since the 2010. Site details are given in Table A.2 and results from the past 5 years are detailed in Table A.4. A long-term trend is shown in Figure G.3 below.

The results show that the air quality objective is met at all locations since 2017 and results from the diffusion tubes have been below 36 µg/m^3 since 2018. The trend continues to be downwards.

Local Developments

Saltford is located on the A4 and there is a number of developments on the A4 between Keysham and Saltford, air quality assessments which have accompanied the planning applications have shown that the NO_2 concentrations will remain below the air quality objectives.

Conclusions

As the monitoring data shows the air quality objective continues to be met and there is a downward trend in concentrations and no local developments are likely to significantly increase pollution concentrations in the AQMA it is recommended that the Saltford AQMA is revoked.

Next Steps

Following the acceptance of this report by DEFRA the council with consult on the removal of the AQMAs for Keynsham and Saltford. A single member decision will be taken before the Council carries out the formal revocation process.

The Council will also develop an Air Quality Strategy to ensure that Air Quality continues to improve across the district.

Figure G.1 – Long-term trends in Annual Mean NO2 Concentrations Measured at Diffusion Tube Monitoring Sites – Keysham (1)

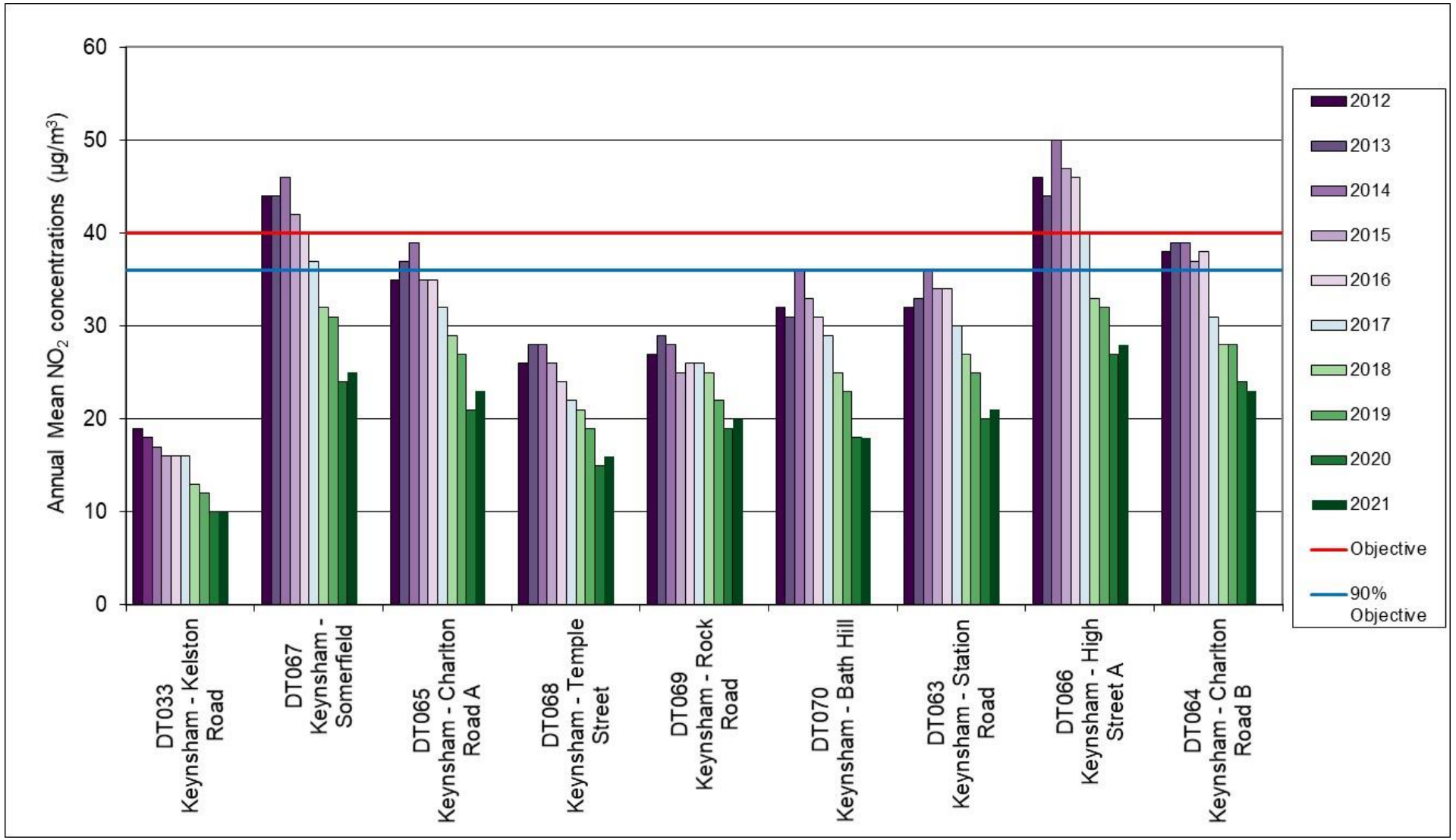


Figure G.2– Long-term trends in Annual Mean NO2 Concentrations Measured at Diffusion Tube Monitoring Sites – Keysham (2)

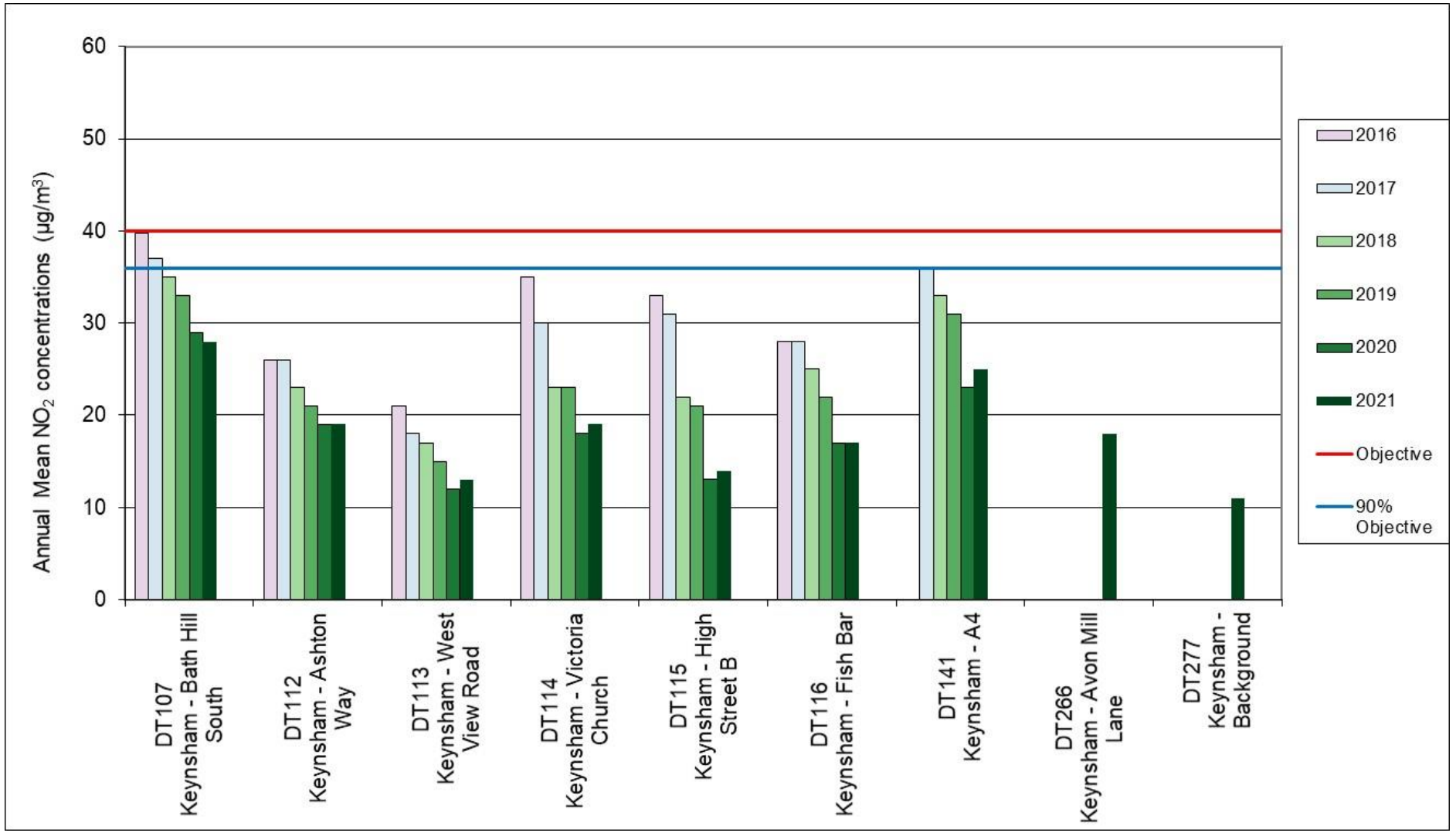
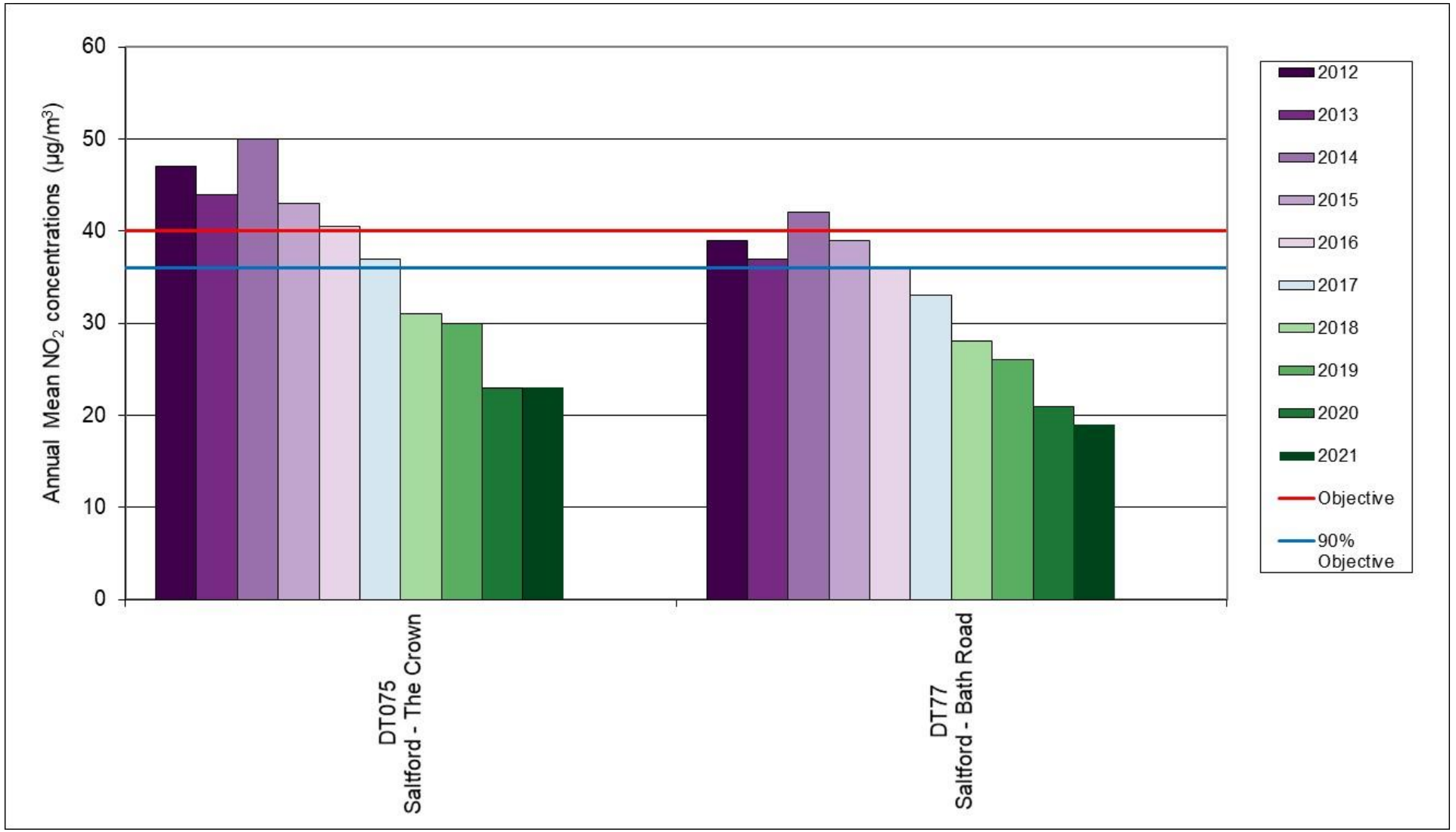


Figure G.3 - Long-term trends in Annual Mean NO2 Concentrations Measured at Diffusion Tube Monitoring Sites – Saltford



Appendix H: Additional non-LAQM monitoring – Temple Cloud Gardens and Indoor

Monitoring on Eastern side of A37

Temple Cloud has high concentrations of NO2 which are being monitored in the west side of the A37 in the narrow stretch within the AQMA. Work to cut back vegetation on the east side of the A37 raised concerns over possible high concentrations. To confirm there were no issues for properties on the eastern side of the A37 we monitored the NO2 concentration in the east side of the road at the boundary and close to the property façade for 5 months from January to May 2021. The locations of the monitors are shown in Figure H.1. The result can be seen in the Table H.1.

Table H.1 – Annual Mean NO_2 Monitoring Results: Temple Cloud, East side of the A37 in 2021 (µg/m^3)

Diffusion Tube ID	Site Name	Valid Data Capture (%)	Annual Average
DT260	Temple Cloud 15	40	10
DT261	Temple Cloud 16	40	16
DT262	Temple Cloud 17	40	9
DT263	Temple Cloud 18	23	16

Even with the predominant winds coming from the west the results are below 40 µg/m^3. The highest concentrations were found at DT261 the closest to the road in the narrow stretch measured the 16 µg/m^3 comparing to the reading of 38 µg/m^3 at site DT255. Site DT263 located a few metres away from the DT255 on the East side (outside of the narrow stretch) measured relatively low NO_2 concentrations comparing with the DT255.

Monitoring in Gardens on Western side of A37

When considering the proposed AQAP, a possibility of mitigating exposure by ventilating the properties from an area of low pollution was investigated. The NO_2 concentrations in the back gardens of the properties in west side of the A37 were monitored, to assess how much better the air quality it is away from the road. The main goal of this was to provide ventilation guidance for the properties close to the road and demonstrate it with real data.

Monitoring was carried out at 4 locations from June to September 2021 (Figure H.1). The results are shown in Table H.2.The results are all below 40 µg/m^3 and ventilation could be taken from these areas.

Table H.2 - Annual Mean NO_2 Monitoring Results: Temple Cloud, Garden on the West side of the A37 in 2021 (µg/m^3)

Diffusion Tube ID	Site Name	Valid Data Capture	Annual Average
DT272	Temple Cloud 19	33.0	10
DT273	Temple Cloud 20	33.0	9
DT274	Temple Cloud 21	33.0	9
DT275	Temple Cloud 22	25.3	15

Indoor Monitoring

To assist with the advice for the residents we placed some diffusion tubes in the interior of the properties (next to the windows closer to the road) to have a better understanding of NO_2 infiltration from the traffic gets to the interior of the properties.

A small survey was delivered to the residents for them to complete with information regarding some actions that could generate NO_2 at home (e.g. woodburning, smoking, gas cooking, candles etc.). This was to see if something else could be causing some higher readings of NO_2 indoors. Monitoring was carried out at 6 locations from October to December 2021. Due to access issues at some of the properties there is low data capture at 3 locations. The locations of the monitors are shown in Figure H.2.

The results from the indoor monitoring are displayed in Table H.3. The results are all below 40 µg/m^3 and much lower than the façade results at these locations.

Table H.3 - Annual Mean NO_2 Monitoring Results: Temple Cloud, Indoor in 2021 ($\mu g/m^3$)

Diffusion Tube ID	Site Name	Valid Data Capture	Annual Average
DT286	Temple Cloud 28	8.0*	5
DT282	Temple Cloud 24	26.6	7
DT283	Temple Cloud 25	26.6	2
DT285	Temple Cloud 27	26.6	8
DT281	Temple Cloud 23	17.3*	4
DT287	Temple Cloud 29	17.3*	7

*low data capture, no annual correction has been made

Figure H.1 - Diffusion tube locations in the east and west side of the A37

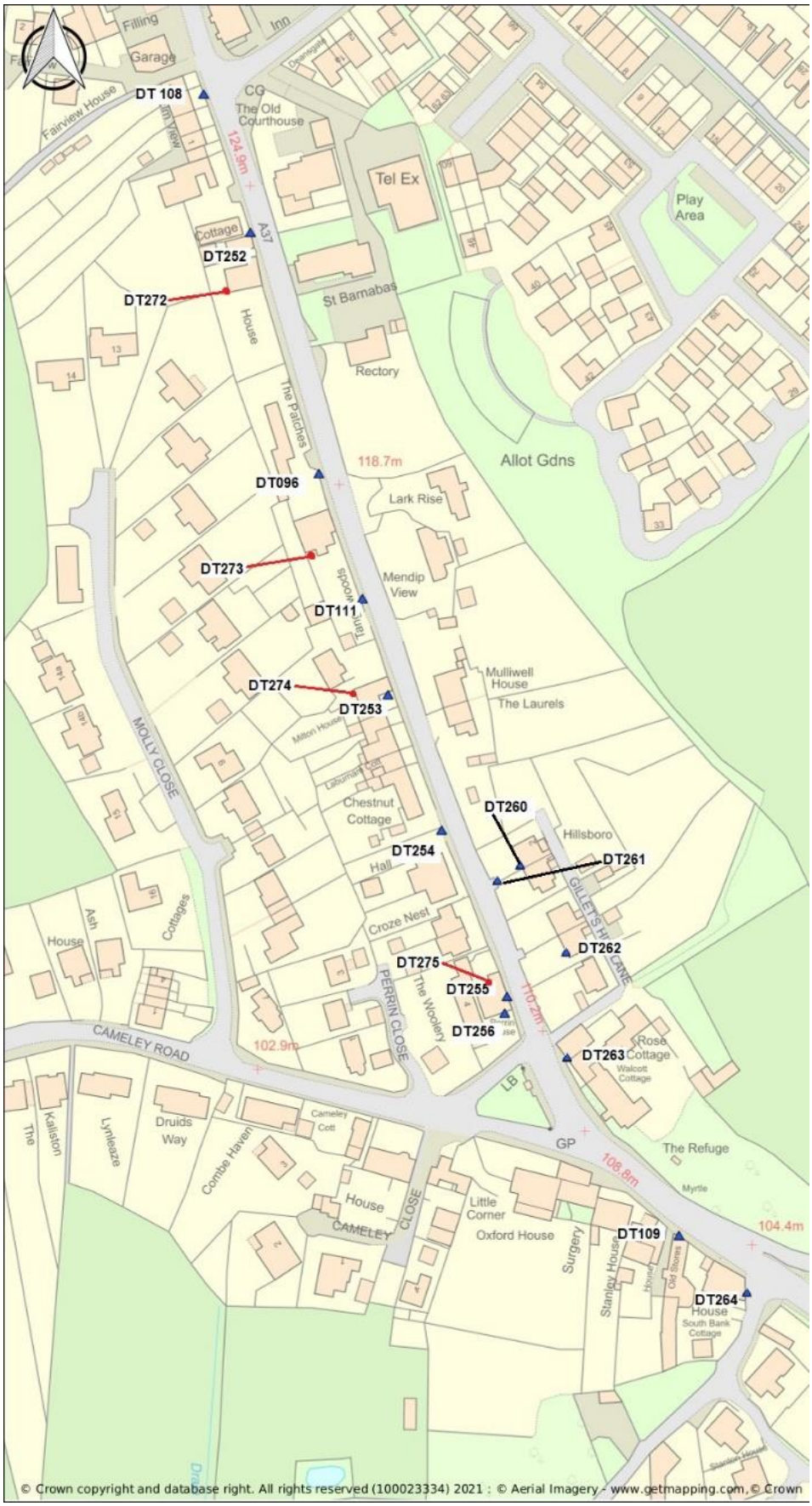
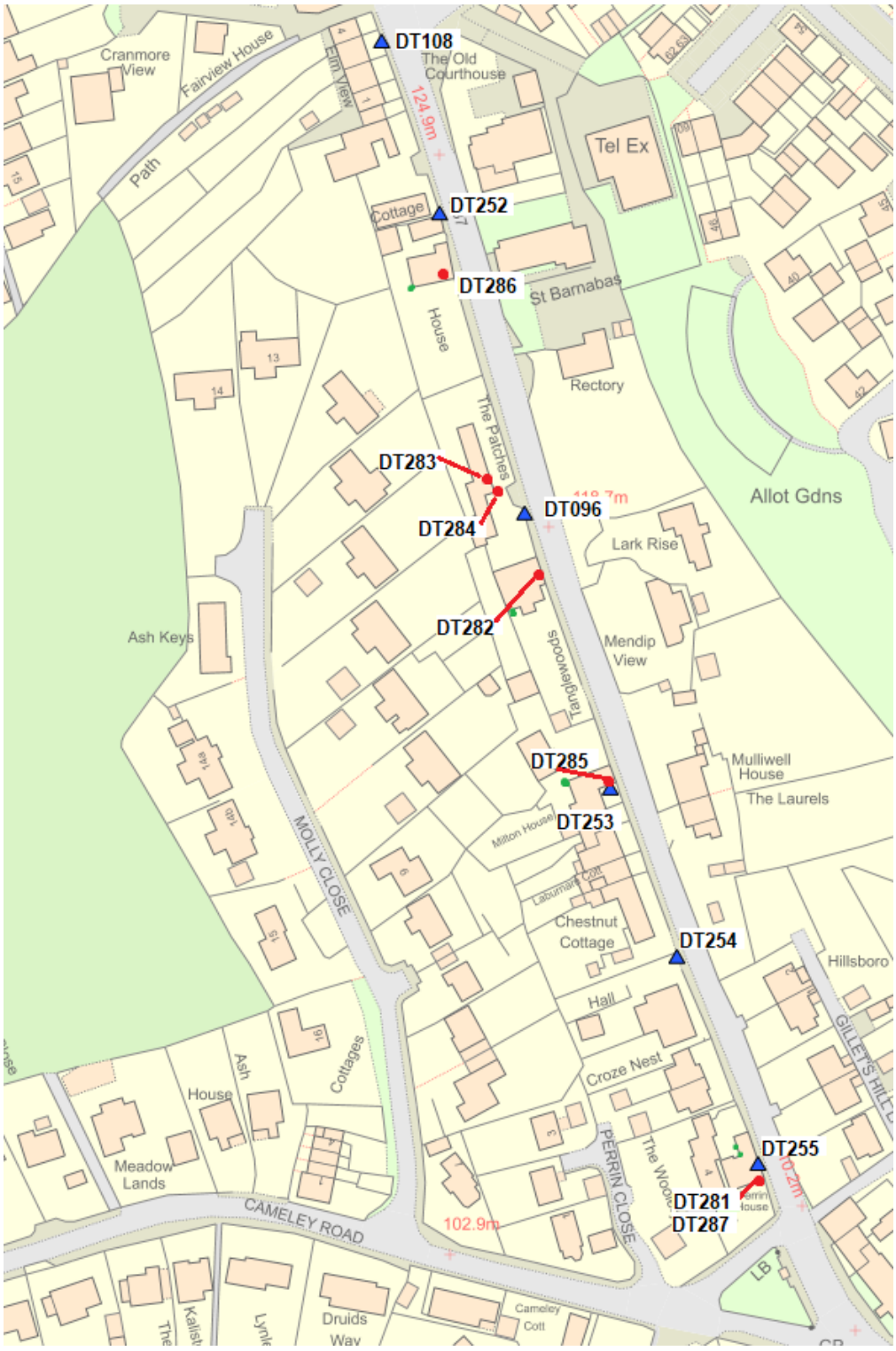


Figure H.2 - Indoor diffusion tube locations map



Glossary of Terms

Abbreviation	Description
ANPR	Automatic Number Plate Recognition
AQ	Air Quality
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
AURN	Automatic Urban and Rural Network
ATC	Automatic Traffic Count
BAM1020	Beta Attenuation Monitor
B&NES	Bath and North East Somerset Council
CAD	Clean Air Day
CAP	Clean Air Plan
CAZ	Clean Air Zone
CBTF	Clean Bus Technology Fund
CO_2	Carbon Dioxide
CM	Continuous Monitoring
CTP	Corporate Travel Plan
CVRAS	Clean Vehicle Retrofit Accreditation Scheme
DCO	Development Consent Order
Defra	Department for Environment, Food and Rural Affairs
DNO	District Network Operator
DfT	Department for Transport
DT	Diffusion Tube
DVLA	Driver and Vehicle Licensing Agency
DVLA VED	Driver and Vehicle Licensing Agency Vehicle Excise Duty
EU	European Union

Abbreviation	Description
EV	Electric Vehicle
GULW	Go Ultra Low West
GUL	Go Ultra Low
GWR	Great Western Railway
HGV	Heavy Goods Vehicle
JAQU	Joint Air Quality Unit
JNZ	Journey to Net Zero
JSP	Joint Spatial Plan
KPI	Key Performance indicator
LAQM	Local Air Quality Management
LCWIP	Local Cycling and Walking Infrastructure Plan
LGV	Light Goods Vehicle
LN	Liveable Neighbourhood
LSO	Local Site Operator
LSTF	Local Sustainably Transport Fund
LTA	Local Transport Authority
LTN	Low Traffic Neighbourhood
MaaS	Mobility as a Service
MoU	Memorandum of Understanding
NO_2	Nitrogen Dioxide
NO_x	Nitrogen Oxides
OLEV	Office for Low Emission Vehicles
PHV	Private Hire Vehicle
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
P&R	Park and Ride
PAYG	Pay as you go
PCN	Penalty Charge Notice
QA/QC	Quality Assurance and Quality Control

Abbreviation	Description
SO_2	Sulphur Dioxide
SOV	Single Occupant Vehicle
SCR	Selective Catalytic Reduction
TEA	Triethanolamine
TG16	Technical Guidance (Local Air Quality Management)
TMT	Thermal Management Technology
TRO	Traffic Regulation Order
$\mu g/m^3$	Microgrammes per cubic metre
ULEV	Ultra-Low Emission Vehicles
ULETF	Ultra-Low Emission Taxi Fund
UKAS	United Kingdom Accreditation Service
UTMC	Urban Traffic Management Control
VMS	Variable Message Sign
WASP	Workplace Analysis Scheme for Proficiency
WECA	West of England Combined Authority

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