



2025 Air Quality Annual Status Report (ASR)

In fulfilment of Part IV of the Environment Act 1995
Local Air Quality Management, as amended by the
Environment Act 2021

Date: June, 2025

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Executive Summary: Air Quality in Our Area

Air Quality in Test Valley Borough Council

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

Air pollution particularly affects the most vulnerable in society, children, the elderly, and those with existing heart and lung conditions. Low-income communities are also disproportionately impacted by poor air quality, exacerbating health and social inequalities.

Table ES 1 provides a brief explanation of the key pollutants relevant to Local Air Quality Management and the kind of activities they might arise from.

Table ES 1 - Description of Key Pollutants

Pollutant	Description
Nitrogen Dioxide (NO ₂)	Nitrogen dioxide is a gas which is generally emitted from high-temperature combustion processes such as road transport or energy generation.
Sulphur Dioxide (SO ₂)	Sulphur dioxide (SO ₂) is a corrosive gas which is predominantly produced from the combustion of coal or crude oil.
Particulate Matter (PM ₁₀ and PM _{2.5})	Particulate matter is everything in the air that is not a gas. Particles can come from natural sources such as pollen, as well as human made sources such as smoke from fires, emissions from industry and dust from tyres and brakes. PM₁₀ refers to particles under 10 micrometres. Fine particulate matter or PM_{2.5} are particles under 2.5 micrometres.

Due to the potential impact of poor air quality on health, Test Valley Borough Council (TVBC) reviews and assesses air quality within the Borough on a regular basis. The production of an Annual Status Report by the end of June each year is intended to summarise the local air quality status and maintain continuity in the Local Air Quality Management process. This report includes the results of on-going monitoring of Nitrogen

Dioxide (NO₂) within the Borough where emissions from a range of sources could adversely impact sensitive receptors.

This Annual Status Report includes the results of Nitrogen Dioxide (NO₂) diffusion tube monitoring carried out in 2024. A summary of the data is provided here with further details available within section [3.2.1](#) of the report. Data recovery for 2024 was very good with an overall data capture rate of 98.7%. Monitoring shows a decrease of 1.9 µg/m³ in the average NO₂ levels at 17 established sites monitored by TVBC, from 19.4 µg/m³ in 2023 to 17.5 µg/m³ in 2024. This follows broad national trends, which show levels of NO₂ continuing to fall at roadside localities (Defra, 2024^a). The 17 monitoring sites show predominantly decreasing trends at each locality, with levels remaining significantly decreased when compared to 2019 when the average concentration of NO₂ was measured at 26.0 µg/m³.

A total of 19 sites were monitored during 2024 in Test Valley Borough, with one new location added. The 17.4 µg/m³ annual mean concentration of NO₂ recorded in 2024 at the 19 locations (Table A.3 – mean for 2024) is lower than the mean roadside background levels in England of 21.8 µg/m³ for 2023, national data for 2024 is not currently available (Defra, 2024^a). There is currently no evidence that the annual mean concentration of NO₂ at any site monitored by TVBC is likely to exceed the specific Air Quality Objective of 40 µg/m³, with sites frequently reviewed and roads with greater traffic flows in the proximity of potential receptors targeted for monitoring.

The relatively low concentrations of NO₂, as shown in the results from 2024, have occurred despite an estimated UK-wide increase in all motor vehicle traffic of 1.6% compared to 2023, with the estimated vehicle miles travelled in 2024 only 0.7% lower than pre-Pandemic (2019) (DoT, 2025^a).

Combined with monitoring for NO₂, air quality is also addressed across the TVBC area through Environmental Permitting of processes which may have the potential to cause pollution to the atmosphere, and engagement with the Environment Agency where such sites fall within their remit.

Publicly available data for PM_{2.5} has been reviewed, with modelled background concentrations for 2024 indicating annual average concentrations ranging from 5.99 to 8.58 µg/m³ within TVBC. A review of data from monitoring stations outside of the Borough, including Southampton Central AURN and Reading New Town AURN, indicates annual average PM_{2.5} concentrations in the region of 6.7 to 6.9 µg/m³ within highly urbanised settings. No specific consistent sources have been identified within the borough to indicate

that the current concentration of PM_{2.5} within TVBC is likely to exceed the Air Quality Objective of 20 µg/m³.

Through strategic planning TVBC is also working towards accessible and connected communities, in partnership with Hampshire County Council (HCC), who manage local highways infrastructure. TVBC engages with HCC on air quality issues, with events such as the Clean Air Day and The Clean Air Project being promoted through HCC's My Journey Hampshire website (<https://myjourneyhampshire.com/education/air-quality-for-schools/>). TVBC also works with other organisations, such as Sustrans, on sustainable transport and infrastructure planning.

Based on the findings of this report, TVBC has found no evidence that the levels of any other relevant pollutants are likely to exceed the specific Air Quality Objectives and therefore has not identified the need to designate any Air Quality Management Areas.

Actions to Improve Air Quality

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

TVBC takes its responsibilities for air quality seriously and proposals within the Borough are carefully assessed in accordance with the Local Plan. The current Revised Local Plan 2011-2029 was adopted in January 2016 and reviewed in 2021. The Council is currently in the process of proceeding through the statutory stages of preparation for the Draft Local Plan 2042, which has incorporated 4 stages of public consultation and is being amended due to the increase in housing requirements set by central Government, with targets rising from 524 homes to 934 homes per year.

Development that would or could generate potentially significant levels of pollution will only be permitted if it can be demonstrated that there would not be any adverse impact on human health, the natural environment or general amenity. Following national guidance on air quality in relation to land-use planning & development control (IAQM, 2017), an air quality assessment, including modelling of air quality, is required where infrastructure planning may lead to increased traffic flow or new sources of emissions (e.g. biomass boilers). TVBC is conscious of the need to keep air quality issues in mind when looking at development within the Borough over time.

Sustainable transport and improved cycling infrastructure is critical to promoting a reduction in motor vehicle use, a key source of NO₂ within the TVBC area. Through Transport Development and Infrastructure planning and in association with Hampshire County Council, TVBC have worked to develop a Local Cycling & Walking Infrastructure Plan (LCWIP) for the northern part of the Borough which was approved in 2024. Community travel plans are also one of the key requirements for larger developments within the Borough and can help offset or prevent potential increases in motor vehicle traffic.

TVBC aims to lead by example, with a programme of fleet modernisation and electrification, the council currently operates 15 Electrical Vehicles (EV's), with a fleet of electrical pavement sweepers alongside electric hedge trimmers, strimmer's and leaf blowers. The Council's decarbonisation commitment also aims to reduce energy use, decreasing NO₂ emissions from gas boilers within Council buildings and reducing use of electricity from the National Grid – not only reducing local emissions, but also assisting the UK Government to achieve national air quality targets.

In association with Hampshire County Council and Public Health Hampshire, the Council is currently developing an Air Quality Strategy. Aims of the strategy include raising public awareness of air quality within the Borough, identifying areas or populations that may be disproportionately at risk from poorer air quality and setting out objectives and measures that can help improve local air quality and which will contribute to national air quality objectives.

TVBC will continue to explore with HCC potential strategies to reduce particulate matter, including PM₁₀ & PM_{2.5} and how to target these and measure any associated impact on public health. Where complaints are made in relation to domestic solid fuel burning, or other smoke associated nuisance, TVBC will investigate and provide information and guidance, where appropriate, to those involved with the potential for further action where necessary.

The southern part of the Test Valley Borough is encompassed by the Partnership for South Hampshire (PfSH) with the PUSH Air Quality Impact Assessment published in 2018 (<https://www.push.gov.uk/wp-content/uploads/2018/10/Air-Quality-impact-assessment.pdf>). Collaborative work on planning, including air quality, has been carried out with the PfSH Spatial Position Statement published in December 2023 (<https://www.push.gov.uk/work/planning-and-infrastructure/>). TVBC will continue to work on projects through PfSH to improve air quality for urban south Hampshire.

Conclusions and Priorities

In summary the 2025 Air Quality Status Report highlights that:

- Monitoring of NO₂ within the TVBC area continues to indicate that the current Air Quality Objectives have been met, with no current requirement to implement AQMAs.
- The overall trends in the data indicate an improvement in air quality within the region compared to 2019, with a continued decrease in concentrations of NO₂ between 2023 and 2024 (please refer to Figure A.2).
- Planning applications with the potential to impact air quality in Test Valley and within the vicinity of the Southampton Urban Area will continue to be carefully considered.
- Monitoring will continue to be directed to areas identified as at risk from poor air quality, or where residents raise concerns, with regular review of monitoring sites and redeployment of equipment where required.
- TVBC will respond and investigate potential statutory nuisance issues associated with smoke/emissions in order to address particulate emissions.

The data from monitoring in 2024 indicates that an overall trend of decreased concentrations of NO₂ is continuing, with a drop from an average within the Borough of 26.0 µg/m³ in 2019 to 17.4 µg/m³ in 2024. This decrease has occurred despite road traffic levels in 2024 being only 0.7% below those of 2019 and is likely to reflect a reduction in road transport emissions of NO₂ over a comparable period resulting from newer vehicles entering the transport fleet which are subject to stricter emissions standards (Defra, 2024^a).

There is the potential to sustain the reduction in NO₂ within the TVBC area through the increased use of electric vehicles and if home working arrangements, reducing the need for work-based travel, are continued. The Council continues to operate a flexible working policy, allowing staff to minimise vehicle travel wherever possible. Ultra-Low Emission Vehicle (ULEV) ownership per 100,000 population within Test Valley Borough is nearly 60% higher than the UK average, contributing to lower-than-average vehicle emissions from a proportion of local traffic (HoC, 2024). The use of Battery Electric Vehicles (BEV's) and Plug-in Hybrid Electric Vehicles (PHEV's) is also increasing within the UK, with a rise of 38.9% since 2023. 1.3 million electric cars now account for 3.7% of all cars in use, an increase from 2.7% in 2023 (SMMT, 2025). The associated decrease in emissions is predicted to reduce concentrations of NO₂ and other pollutants at roadside exposure sites.

Challenges to air quality in the TVBC area will remain due to climate change, potential increases in domestic solid fuel burning and directives from some institutions for personnel to return to office-based working. Increases in traffic volume combined with an ageing vehicle fleet, with 50.2% of cars on the road now at least 10 years old (SMMT, 2025), also pose a risk to continued air quality improvements. Ongoing inflationary challenges and growing global political instability, combined with the lower-than-average number of publicly available charging points within TVBC (HoC, 2024) may also continue to influence uptake of EV's. The relatively rural nature of areas outside of the main urban settlements of Andover and Romsey, with charging of EV's occurring at homes or businesses, may be the cause of the relatively low number of public charging points compared to the higher rates of EV ownership within the Borough. The continued instability in energy prices may also increase the use of solid fuel to heat homes and the pressure for increased housing could increase air pollution to some extent within selected areas.

How to get Involved

A public engagement exercise was carried out with an online survey open between 25th November 2024 to 20th January 2025, which aimed to both understand public awareness of local air quality issues and to raise the profile of local air quality. The findings of the survey were used to help guide development of the councils Air Quality Strategy.

A summary report of the results of this survey is available on the councils website at:

<https://www.testvalley.gov.uk/housingandenvironmentalhealth/environmentalprotection/air-quality>

An internal workshop event was also used to gain feedback on plans for the Council's air quality strategy and to help identify or further develop actions being undertaken by the Council where air quality can be addressed through processes such as planning, housing, building regulations, fleet development and rural infrastructure development. The event highlighted multiple areas where actions are being undertaken to minimise emissions and where local community actions are actively reducing emissions – such as the community bus running between Broughton, Mottisfont and Dunbridge.

TVBC also actively engages with the Regional Air Quality Group, which includes local authorities from around the south-east along with Hampshire County Council Public Health. Meetings and events are attended regularly by officers of the Environmental Protection Team along with other colleagues in order to keep up to date with the latest

developments of air quality regulation and to identify areas where organisations can co-operate and work together on local – regional air quality issues.

TVBC actively promotes sustainable travel which will help improve air quality. TVBC awarded a £1000 Councillor Community Grant to the Friends of Cupernham Infant School which contributed to funding a new bike shelter which was installed in readiness for national Cycle to School Week in 2024, this aims to inspire students to embrace cycling as a fun, healthy, and eco-friendly way to commute

(<https://www.testvalley.gov.uk/news/2024/sep/new-bike-shelter-at-local-school-receives-council-grant-boost>).

The 5th Andover Festival of Cycling was also held between the 6th-7th July 2024, organised by Halo Sports in association with Stannah, Test Valley Borough Council and Hampshire County Council. The festival promotes the use of the local cycle lane network for both leisure and commuting purposes.

Information and Resources

Information on wood burning stoves and open fires, which have grown in popularity in recent years and can have an impact on air quality in built up areas relating to particulate matter (PM₁₀ and PM_{2.5}), is available on the TVBC website on the dedicated Air Quality page:

<https://www.testvalley.gov.uk/housingandenvironmentalhealth/environmentalprotection/air-quality>

In order to decrease emissions through reducing the burning of garden waste, TVBC encourages residents to consider home composting:

<https://www.testvalley.gov.uk/wasteandrecycling/recycling/homecomposting>

Alternatively, a garden waste collection service is available through an annual subscription service:

<https://www.testvalley.gov.uk/wasteandrecycling/garden-waste-info>

Garden waste recycling facilities are also available at Hampshire County Councils Household Waste Recycling Centres:

<https://www.hants.gov.uk/wasteandrecycling>

Further information on aspects relating to air quality and sustainable transport for TVBC, including links to EV charging locations within the TVBC area, are available on the Council's website:

Air Quality:

<https://www.testvalley.gov.uk/housingandenvironmentalhealth/environmentalprotection/air-quality>

Sustainability:

<https://www.testvalley.gov.uk/aboutyourcouncil/corporatedirection/environmentandsustainability>

Travel Planning:

<https://www.testvalley.gov.uk/transportparkingandstreets/traffic-management/travelplans>

Cycling and Walking:

<https://www.testvalley.gov.uk/communityandleisure/sportsandactivities/cyclingwalking>

Sustainable travel initiatives such as, bus services, walking and cycling provision and residents travel plans:

<https://www.testvalley.gov.uk/communityandleisure/sportsandactivities/cyclingwalking/sustainable-travel>

<https://www.testvalley.gov.uk/communityandleisure/my-local-area-new/andover-romans/augusta-park/east-anton-augusta-park-community-travel-plan>

Journey Planning: follow the My Journey link on the following TVBC webpage

<http://testvalley.gov.uk/transportparkingandstreets>

Useful information on air quality at home can also be found on the Hampshire County Council Clean Air at Home webpage:

<https://myjourneyhampshire.com/air-quality/clean-air-at-home/>

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1 Local Air Quality Management

This report provides an overview of air quality in Test Valley Borough Council during 2024. It fulfils the requirements of Local Air Quality Management (LAQM) as set out in Part IV of the Environment Act (1995), as amended by the Environment Act (2021), and the relevant Policy and Technical Guidance documents.

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

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

2 Actions to Improve Air Quality

2.1 Air Quality Management Areas

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

Test Valley Borough Council currently does not have any declared AQMAs. A local Air Quality Strategy is being finalised and is due for publication in 2025. The aim of which is to improve local air quality in order to protect the local environment, to improve the quality of life for all residents living within the borough and to support the national air quality strategy.

Pending the adoption of a formal AQS the Council continues to utilise a number of local and regional plans and strategies in order to minimise and/or reduce potential impacts on air quality within the Borough and to prevent and reduce polluting activities.

Monitoring data for 2024 indicates continued compliance with the Air Quality Objective for Nitrogen Dioxide (NO₂) of 40.0 micrograms per cubic metre (µg/m³) with no evidence that this will be exceeded.

Examples of the management strategies and plans utilised are listed below:

- Hampshire Local Transport Plan (LTP – 4)
<https://www.hants.gov.uk/transport/localtransportplan>
- Test Valley Borough Council Revised Local Plan (2011 – 2029) and Draft Local Plan 2042
<https://www.testvalley.gov.uk/planning-services/planningpolicy/local-development-framework>
- Cycle Strategy and Network SPD
<https://www.testvalley.gov.uk/communityandleisure/sportsandactivities/cyclingwalking/cyclestrategyspd>

- Climate Emergency Action Plan
<https://www.testvalley.gov.uk/aboutyourcouncil/corporatedirection/environmentandsustainability/climate-emergency-action-plan>
- Test Valley Borough Council Corporate Plan 2023 – 2027
<https://www.testvalley.gov.uk/aboutyourcouncil/corporatedirection/corporate-plan-2023-2027>
- Partnership for Urban South Hampshire Air Quality Impact Assessment (PUSH)
[Home - Partnership for South Hampshire \(push.gov.uk\)](https://push.gov.uk/Home)

For reference, maps of TVBC's monitoring locations are available in Appendix D.

2.2 Progress and Impact of Measures to address Air Quality in Test Valley Borough Council

Defra's appraisal of last year's ASR concluded

"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. *As seen in last year's report, the Council employed short-term diffusion tubes as a screening survey, in order to test out areas for potential hot-spots. This shows the Council's continued proactive approach towards the monitoring network and is commended.*
2. *The Council provide detailed information on the measures they have in place to tackle air quality, including the development of a Local Air Quality Strategy and several regional strategies/plans in place to minimise the potential impacts of air quality within the borough (e.g. the Partnership for Urban South Hampshire Air Quality Impact Assessment).*
3. *The names of the sites used in the annualisation calculations are not provided in Table C.1. Although the sites are included in the text, the Council should ensure that all table headers are completed correctly in future reports, and that they align with the respective text and calculations within the report. [corrected in report published online]*
4. *The Council very clearly outlines the measures in place to address PM_{2.5} emissions. This includes the use of Defra's background mapping resource, which the Council have used to calculate background PM_{2.5} concentrations in the borough. This highlights the Council's dedicated approach to monitoring and addressing air quality and is commended.*
5. *Overall, the report is detailed and provides great insight into the work that Test Valley Borough Council are doing within its area, and all of the measures it has put in place to improve air quality."*

Test Valley has taken forward a number of direct measures during the current reporting year of 2024 in pursuit of improving local air quality. Details of all measures completed, in progress or planned are set out in Table 2.1. 20 measures are included within [the table](#), with the type of measure and the progress Test Valley Borough Council have made during

the reporting year of 2024 presented. Where there have been, or continue to be, barriers restricting the implementation of the measure, these are also presented.

More detail on these measures can be found in their respective Action Plans. Copies of the main reference plans/strategies can be found via the web-links listed below:

Hampshire Local Transport Plan (LTP – 4)

<https://www.hants.gov.uk/transport/localtransportplan>

Test Valley Borough Council Revised Local Plan (2011 – 2029) and Draft Local Plan 2042

<https://www.testvalley.gov.uk/planning-services/planningpolicy/local-development-framework>

Test Valley Borough Council's Climate Emergency Action Plan

<https://www.testvalley.gov.uk/aboutyourcouncil/corporatedirection/environmentandsustainability/climate-emergency-action-plan>

Environmental Health website information

<https://www.testvalley.gov.uk/housingandenvironmentalhealth/environmentalprotection/air-quality>

Test Valley Borough Council will continue to review publicly available data and information on PM_{2.5} emissions along with local trends in NO₂. The position of monitoring sites will also be actively reviewed, taking into consideration the position of major transport routes within Test Valley Borough and how the locations of potential future development and expansion of housing may impact on those routes. To address potential air quality issues and assess locations where potential changes in traffic routing may occur, deployment at site S19A has been carried out for the 2024 reporting year. Further deployments are being used in the 2025 monitoring year to screen other locations where proposed changes in traffic routing may impact air quality in the future.

Key completed measures in 2024 include:

- Bourne House Depot Decarbonisation Project - including improving insulation, replacing heating system (including gas boiler to air source heat pump for office area), and solar panel installation on roof.
- Test Valley Community Energy Project - Supporting communities and residents to decarbonise and reduce sources of air pollution (project ongoing).

- Heat network studies - Investigation of heat network zones and feasibility of zone in Andover town centre. This project has explored heat network zones across the borough based on a national methodology and modelling approaches.
- Northern Test Valley Local Cycling & Walking Infrastructure Plans – reduced traffic in line with increased uptake of active travel (approved March 2025).

TVBC worked to implement these measures in partnership with the following stakeholders during 2024:

- Hampshire County Council
- Sustrans
- Department for Energy Security and Net Zero
- Community Energy South (CES)
- Dragonfly Power
- IncuHive

TVBC expects the following measures to be completed over the course of the next reporting year:

- Completion of the development of Council's Air Quality Strategy setting out the framework for maintaining and improving local air quality within the Borough.

TVBC's priorities for the coming year are:

- Continued focus on the monitoring of NO₂ within the borough, reviewing and adapting the monitoring network where appropriate.
- Working with local businesses to ensure compliance with environmental permits.
- Responding to reports of smoke related issues, such as bonfires and domestic solid fuel burning, with the provision of information on related air quality issues, where appropriate, to those involved.
- Revision of the Council's Local Plan (2042) to account for greater levels of residential development.
- Ensuring that potentially significant air quality impacts associated with new development are identified and properly considered in accordance with Policy E8 of the Council's Local Plan.
- Working with our neighbouring local authorities with regards to the non-compliance for NO₂ in the Southampton Urban Area Clean Air Zone.

The principal challenges and barriers to implementation that TVBC anticipates facing are that the main driver for air quality in the borough remains associated with vehicular traffic. With regional background monitoring data confirming higher levels of NO₂ and PM_{2.5} along major roads, primarily the M27, along with urban areas (Defra, 2024^b; Appendix F). The road network, particularly within the historic settlements of Andover and Romsey, poses additional challenges for traffic management, which is largely beyond the control of TVBC, and is the responsibility of Hampshire County Council and Highways England.

Limitations for alternatively powered vehicles and plant remain a barrier to uptake. The currently available electric options for dustcarts are not sufficiently suitable to meet the operational requirements within the Test Valley Borough Council area. However, all fleet replacements are Euro 6 compliant.

TVBC anticipates that the measures stated above and in Table 2.1 will help maintain compliance within the Test Valley area and TVBC will continue to work with partners in neighbouring authorities, PfSH, Sustrans, Highways England and Hampshire County Council to monitor and achieve the required Air Quality Objectives.

Table 2.1 – Progress on Measures to Improve Air Quality

Measure No.	Measure Title	Category	Classification	Year Measure Introduced in AQAP	Estimated / Actual Completion Date	Organisations Involved	Funding Source	Funding Status	Estimated Cost of Measure	Measure Status	Reduction in Pollutant / Emission from Measure	Key Performance Indicator	Progress to Date	Comments / Barriers to Implementation
1	Green Waste Recycling	Other	Other	2004	Ongoing	Local Authority	Local Authority & Subscribers	Funded	Unknown	Implementation	Reduction in Pollutants/Emissions from outdoor burning	Number of Subscribers	Implementation ongoing, 19,654 participants	Subscription fee, space for waste bin, cost of expanding service
2	Northern Test Valley Local Cycling & Walking Infrastructure Plans	Transport Planning and Infrastructure	Cycle Network	2025	2025	Local Authority County Council Sustrans	Shared	Unknown	Unknown	Planning	Reduced Vehicle Emissions	-	Approved 3rd March 2025	-
3	Electric Vehicles and Plant	Policy Guidance and Development Control	Sustainable Procurement Guidance	2015	Ongoing	Local Authority	Budgets	Funded	Unknown	Implementation	Reduction in Pollutants/Emissions	-	15 electric vehicles, 25 electric plant items and 3 dustcarts with electric bin lifts	High costs / Availability of suitable alternatives to diesel HGV
4	Community travel plans for new neighbourhoods	Transport Planning and Infrastructure	Public transport improvements – interchanges stations and services	2001	Ongoing	Local Authority Developers County Council	Developers	Funded	Unknown	Implementation	Reduction in Pollutants/Emissions	-	Services in place for Picket Twenty, Picket Piece and Abbotswood	Phased development
5	Travel Plan	Promoting Travel Alternatives	Promote use of rail and inland waterways	2015	Ongoing	Local Authority	Local Authority	Funded	Unknown	Implementation	Reduction in Pollutants/Emissions	-	Ongoing	-
6	Southern Test Valley Local Cycling & Walking Infrastructure Plans	Transport Planning and Infrastructure	Cycle Network	2020	2022	Local Authority County Council Sustrans	Shared	Unknown	Unknown	Planning	Reduced Vehicle Emissions	-	Completed	-
7	Salary Sacrifice for Bicycles	Promoting Travel Alternatives	Promotion of Cycling	2012	Ongoing	Local Authority	Local Authority	Funded	Unknown	Implementation	Reduced Vehicle Emissions	-	Available on website	-
8	Walking and Cycling Guides	Promoting Travel Alternatives	Promotion of Cycling/Walking	2010	Ongoing	Local Authority	Local Authority	Funded	Unknown	Implementation	Reduced Vehicle Emissions	-	Available on website, promoted via social media and paper guides	-
9	King Alfreds Cycleway	Transport Planning and Infrastructure	Cycle Network	2020	2020	Local Authorities (Wessex Region)	Mixed	Funded	Unknown	Completed	Reduced Vehicle Emissions	-	-	-
10	Bargain Farm / Nursling Park and Ride	Alternatives to Private Vehicle Use	Bus based park and ride	2021	2022	Local Authority	Developers	Funded	Unknown	Completed	Reduced Vehicle Emissions	-	Opened October 2022	Only available for NHS staff.
11	Pocket Park	Traffic Management	Re-prioritising road space away from cars	2019	2020	Local Authority County Council	Developers & highway infrastructure funding	Funded	£500k - £1M	Completed	Reduced Vehicle Emissions	-	Work completed	-

Measure No.	Measure Title	Category	Classification	Year Measure Introduced in AQAP	Estimated / Actual Completion Date	Organisations Involved	Funding Source	Funding Status	Estimated Cost of Measure	Measure Status	Reduction in Pollutant / Emission from Measure	Key Performance Indicator	Progress to Date	Comments / Barriers to Implementation
12	Alternative Low Carbon Fuel Adoption	Vehicle Fleet Efficiency	Fleet efficiency and recognition schemes	2022	Ongoing	Local Authority	Local Authority	Funded	Unknown	Implementation	Reduced Vehicle Emissions	Fuel consumption / emissions tests	Implementation ongoing	-
13	Bourne House Depot Decarbonisation Project	Policy Guidance and Development Control	Low Emissions Strategy	2023	2024	Local Authority	DESNZ	Funded	£100k - £500k	Complete	Reduced Gas and Mains Electricity Usage	Electricity Usage	Installation works complete, now monitoring implications.	Project included improving insulation, replacing heating and solar panels on roof.
14	Test Valley Community Energy Project	Policy Guidance and Development Control	Low Emissions Strategy	2023	2024	Local Authority; Community Energy South, Dragonfly Power	DLUHC	Funded	£100,000	Implementation	Reduced Gas and Mains Electricity Usage	Number of schemes	In planning and preparation stage	Reducing combustion of fossil fuels at local and national scales aiding a reduction in sources of air pollution.
15	Heat network studies – investigation of heat network zones and feasibility of zone in Andover town centre	Policy Guidance and Development Control	Regional Groups Co-ordinating programmes to develop Area wide Strategies to reduce emissions and improve air quality	2023	2024	Local Authority, Heat Network Delivery Unit	DESNZ, TVBC	Funded	£100k - £500k	Implementation	Reduced Gas and Mains Electricity Usage	-	Heat network zone and detailed feasibility study for Andover completed. Paused pending potential change in legislation	-
16	Renewable and low carbon energy study	Policy Guidance and Development Control	Other Policy	2019	2020	Local Authority	Local Authority	Funded	£10k - 50k	Completed	Reduction in Pollutants/Emissions	-	Study to highlight capacity in the area and assist sustainable development	-
17	Environmental Permits	Environmental Permits	Introduction/Increase of environment charges through permit systems and economic instruments	Ongoing	Ongoing	Local Authority	Self-funding	Funded	Unknown	Implementation	Reduction in Pollutants/Emissions	Permit compliance	Ongoing	-
18	Taxi Licensing	Promoting Low Emission Transport	Taxi Licensing Conditions	2014	Ongoing	Local Authority	Licence Fee	Funded	Unknown	Implementation	Reduced Vehicle Emissions	-	Reviewed regularly	-
19	Home Working/Agile Working	Promoting Travel Alternatives	Encourage/Facilitate Homeworking	2020	Ongoing	Local Authority	N/A	N/A	Savings	Completed	Reduced Vehicle Emissions	-	Agile Working policy finalised January 2022	-
20	Andover Airfield Business Park	Freight and Delivery Management	Route Management Plans/Strategic Routing	2010	Ongoing	Local Authority	Developers / Operators	Funded	Unknown	Implementation	Reduced Vehicle Emissions	TRO	Ongoing	-

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

As detailed in Policy Guidance LAQM.PG22 (Chapter 8) and the Air Quality Strategy¹, local authorities are expected to work towards reducing emissions and/or concentrations of fine particulate matter (PM_{2.5}). There is clear evidence that PM_{2.5} (particulate matter smaller 2.5 micrometres) has a significant impact on human health, including premature mortality, allergic reactions, and cardiovascular diseases.

Test Valley Borough Council is taking a number of measures to address PM_{2.5}, with publicly available data for PM_{2.5} being monitored to determine any changes in background and roadside annual mean concentrations.

Key sources of PM_{2.5} include road traffic, industrial emissions and wood burning stoves. Whilst TVBC only has a limited role in road traffic management it will continue to work with Hampshire County Council and Highways England in addition to Hampshire County Council's Public Health team and the Office for Health Improvement & Disparities/UK Health Security Agency to reduce PM_{2.5} emissions wherever possible. The new Northern Test Valley Local Cycling & Walking Infrastructure Plans (Measure 2) combined with multiple measures designed to reduce road traffic (measures 4 – 11) will have a co-benefit of reducing primary PM_{2.5} associated with vehicle exhaust emissions and brake/tyre wear.

The garden waste recycling scheme (measure 1), along with home composting, is promoted by TVBC with the potential impact of reducing bonfires and associated particulate matter. The scheme has been a success and is highly subscribed, with increased numbers of participants from 11,000 in 2016 to 19,654 in December 2024. The main barrier to increasing the scale of the scheme are the costs of extra vehicles and staff.

Where permitted activities (measure 17) relate to the emissions of fine particulate matter TVBC will ensure appropriate corrective action is carried out where any exceedance of the permitted limits are detected and work with the relevant operators to ensure Best Available Techniques are applied to minimise emissions. Emissions monitoring at all sites of permitted activities in 2024 indicated compliance with the applicable concentrations.

¹ Defra. Air Quality Strategy – Framework for Local Authority Delivery, August 2023

TVBC received 11 complaints relating to domestic solid fuel burning in 2024, TVBC investigates all cases and where the type of fuel is suspected to be supplied contrary to The Air Quality (Domestic Solid Fuels Standards) (England) Regulations 2020 this will be reported to the regulator (Hampshire Trading Standards). Guidance on the use of wood burning stoves, particularly relevant to urban areas, is provided on the TVBC website with advice and guidance provided, where appropriate, to households contacted in regard to solid fuel burning.

As part of the Air Quality Annual Summary Report, Test Valley Borough Council reviews the latest air quality data on particulates available from the Office for Health Improvement & Disparities (OHID - previously Public Health England). According to the latest data available for 2023, the fraction of mortality attributable to particulate air pollution in the Test Valley area was 4.6%, a decrease of 1.1% from 2022 (OHID, 2025^a). This fraction of mortality is slightly lower than the average for Hampshire (4.8%), the South-East region (5.1%) and the average for England (5.2%). For comparison the fraction of mortality estimated as attributable to particulate air pollution in TVBC has significantly decreased from 7.1% in 2018*.

The latest estimates available for concentrations of total PM_{2.5} within the Test Valley Borough are for 2023, with a concentration of 6.2 µg/m³ reported. This is a decrease from the 7.5 µg/m³ reported for 2020* (OHID, 2025^b). Average concentrations of total PM_{2.5} estimated for Hampshire in 2023 are 6.4 µg/m³ with figures reported for the South-East Region and England at concentrations of 6.7 µg/m³ and 7.0 µg/m³ respectively.

[* please note that new methods for calculating both the fraction of mortality and concentrations of particulate matter have been employed since 2022 and therefore may not be directly comparable to previous years].

For the reporting year of 2024 background PM_{2.5} concentrations for Test Valley Borough have been calculated utilising Defra's background mapping resource (<https://laqm.defra.gov.uk/air-quality/air-quality-assessment/background-maps/>). This data indicates a modelled maximum annual average background concentration of PM_{2.5} at 8.58 µg/m³, with a minimum background value of 5.99 µg/m³ and mean of 6.39 µg/m³. This is significantly reduced compared to previously modelled values for 2023, based on pre-Covid data from 2018, where maximum, minimum and mean concentrations of 10.21 µg/m³, 7.37 µg/m³ and 8.03 µg/m³ respectively were predicted. The current modelled values are based on reference year data from 2021. The maximum, minimum and mean annual average background concentrations for the new 2021 reference year are reported

as $8.89 \mu\text{g}/\text{m}^3$, $6.23 \mu\text{g}/\text{m}^3$ and $6.61 \mu\text{g}/\text{m}^3$ respectively. The significant decrease in model predictions compared to 2018 may arise from the decreased traffic volume and other activities due to the disruption caused by the Covid 19 pandemic in 2020 and 2021.

The spatial variation in background concentrations of $\text{PM}_{2.5}$ can be seen in Appendix F. These maps show, that for both 2021 (Figure F1) and 2024 (Figure F2), the higher levels of $\text{PM}_{2.5}$ associated with primary traffic routes and areas of greater urbanisation (seen in previously modelled data – Figure F3 - 2018 and F4 - 2023) have significantly decreased. Concentrations of $\text{PM}_{2.5}$ modelled for the Romsey and Andover urban centres, whilst low, are generally higher than surrounding rural areas, with projections for $\text{PM}_{2.5}$ concentrations all remaining below $9 \mu\text{g}/\text{m}^3$ for 2021 and further improvement predicted for 2024, particularly away from locations influenced by the larger Urban Southampton area. Monitoring data for 2024, from automated monitoring sites within the wider south-east region, support the lower figures projected for 2024 compared to previous projections based on pre-Covid models (TVBC, 2024).

As a comparison the above modelled data within Test Valley Borough has been compared with measured data at automatic monitoring sites within two highly urbanised Air Quality Management Areas*, Southampton Central AURN and Reading New Town AURN. In Southampton a continued decrease in the annual average $\text{PM}_{2.5}$ concentration has been observed, from $9.0 \mu\text{g}/\text{m}^3$ in 2022 to $6.9 \mu\text{g}/\text{m}^3$ in 2024, with over 80% of the hourly data at a concentration of $<10 \mu\text{g}/\text{m}^3$. At the site in Reading, the annual average $\text{PM}_{2.5}$ concentration has been observed to decrease from $8.6 \mu\text{g}/\text{m}^3$ in 2022 to $6.7 \mu\text{g}/\text{m}^3$ in 2024, with over 80% of the hourly data also at a concentration of $<10 \mu\text{g}/\text{m}^3$. Comparing this to data for the entire UK (latest available data is from 2023), this indicates that annual average roadside $\text{PM}_{2.5}$ levels have decreased to $7.7 \mu\text{g}/\text{m}^3$, with urban background levels at an average of $7.2 \mu\text{g}/\text{m}^3$ (Defra, 2024^c).

The drop in $\text{PM}_{2.5}$ concentrations were initially associated with an overall decrease in traffic movements resulting from the Covid Pandemic. However, an influx of newer vehicles subject to more stringent emissions controls may now be influencing the continued decrease similar to the decrease observed in NO_2 (Defra, 2024^a).

The relatively low measured values for both Southampton and Reading suggests that previously modelled values for Test Valley Borough, based on assumptions made in 2018, are higher than those that would have been observed through direct measurement. This is supported by the new modelled data derived from the 2021 reference year (Figure F1).

The primary barrier for carrying out monitoring for PM_{2.5} within the Borough remains the high costs of monitoring equipment and associated necessary resources, with no clear indication from third party data (and through association with relatively low NO₂) that air quality objectives are at risk of being breached.

***Please note that ratified data derived from the UK-Air website has been used for these statistics. <https://uk-air.defra.gov.uk/data/>**

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

This section sets out the monitoring undertaken within 2024 by Test Valley Borough Council and how it compares with the relevant air quality objectives. In addition, monitoring results are presented for a six-year period between 2019 and 2024 to allow monitoring trends to be identified and discussed.

3.1 Summary of Monitoring Undertaken

3.1.1 Automatic Monitoring Sites

Test Valley Borough Council does not currently have any automatic (continuous) monitoring sites.

3.1.2 Non-Automatic Monitoring Sites

Test Valley Borough Council undertook non-automatic (i.e. passive) monitoring of NO₂ at 19 sites during 2024. [Table A.1 – Details of Automatic Monitoring Sites](#)

Test Valley Borough Council does not have any Automatic Monitoring Sites.

[Table A.2](#) in Appendix A presents the details of the non-automatic sites.

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

Deployment sites for air quality monitoring continue to be regularly reviewed by TVBC, with consideration given to concerns or information provided by the public. 1 site was investigated in 2024 (S19A) to screen an area over a full 12-month period due to the potential for a change in traffic routing within the vicinity. Relatively low levels of NO₂ were identified at the location with a proposal to revisit the site if the proposed changes are initiated. Equipment has been re-deployed, with an additional tube added to the network in January 2025 to increase the spatial coverage of monitoring.

3.2 Individual Pollutants

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

3.2.1 Nitrogen Dioxide (NO₂)

Table A.3 and Figure A.1 in Appendix A compares the ratified and adjusted monitored NO₂ annual mean concentrations for the past five years with the air quality objective of 40µg/m³. 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 2024 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.

Annual mean raw and bias corrected NO₂ concentrations at the 19 monitoring stations within the TVBC area did not exceed the air quality monitoring objectives of 40 µg/m³ during the 2024 monitoring period. Mean annual bias corrected NO₂ concentrations of 17.4 µg/m³ are calculated for the 19 locations monitored, with a range from 9.0 to 26.5 µg/m³. A bias correction factor of 0.78 has been applied for 2024 in line with the appropriate technical guidance. Whilst national data for 2024 is currently unavailable, to place the TVBC results in context, a comparison is made with the 2023 national roadside average for England of 21.8 µg/m³ (Defra, 2024^a). The local and national average continues to decrease despite a rise in traffic volume as road journeys increase after a drop during 2020, 2021 and 2022. Total estimated vehicle miles during 2024 were only 0.7% below the pre-Pandemic levels recorded in 2019 (DoT, 2025^a). Total annual vehicle miles estimated within the Hampshire administrative area during 2024 remained at levels similar to 2015, with an increase in total vehicle miles travelled of 1.6% compared to 2023. The total estimate for Hampshire of 9.61 billion vehicle miles, the second highest for a county in the UK, remains 2.4% lower than the peak in 2019 (DoT. 2025^b).

An overall decrease of 1.9 µg/m³ in average annual NO₂ concentrations is observed at the 17 established monitoring locations, from 19.4 µg/m³ in 2023 to 17.5 µg/m³ in 2024. With a

total decrease across the 6 years of monitoring at these 17 locations of $8.5 \mu\text{g}/\text{m}^3$, from $26.0 \mu\text{g}/\text{m}^3$ in 2019 to $17.5 \mu\text{g}/\text{m}^3$ in 2024. This average decrease of $1.4 \mu\text{g}/\text{m}^3$ per year is slightly below the national average decrease at roadside sites of $1.9 \mu\text{g}/\text{m}^3$ per year to 2023 (Defra, 2024^a). All monitoring sites show a decrease when compared to 2023 and relatively or stable trends when compared to the data from 2019 to 2023.

Whilst a decrease of $3.8 \mu\text{g}/\text{m}^3$ between 2023 and 2024 is observed at location S6 (Winchester Road, Romsey) this site shows a more variable trend than others within the Borough. This occurs in a position in relatively close proximity to a second monitoring location, approximately 20m to the east (S1), where a significant decrease has been observed from $35.3 \mu\text{g}/\text{m}^3$ in 2019 to $19.2 \mu\text{g}/\text{m}^3$ in 2024. The average concentrations of NO_2 at the two locations have shown an overall decrease from $31.6 \mu\text{g}/\text{m}^3$ in 2019 to $22.9 \mu\text{g}/\text{m}^3$ in 2023. The specific cause of the change in distribution of NO_2 in this area remains unknown, however the location is relatively narrow with elevated railway embankments (carrying Diesel powered trains) and has multiple congestion points, including junctions and width/height restrictions at two rail bridges.

With the exception of location S6 (Winchester Road, Romsey) all other locations record lower concentrations of NO_2 than during 2020 despite the increase in traffic volumes in 2024 (DoT, 2025^a). This indicates the critical impact that the national strategy for reducing vehicle exhaust emissions has on air quality at the local level, particularly in relation to NO_2 .

The results from monitoring carried out in 2024 indicate that air quality within Test Valley Borough complies with the relevant air quality objective for NO_2 and are below the threshold ($36 \mu\text{g}/\text{m}^3$) where distance correction to the nearest receptor is necessary. Combined with the absence of consistent trends that may indicate a future breach of the air quality objective this information indicates that no action to declare an AQMA is required at this time.

Appendix A: Monitoring Results

Table A.1 – Details of Automatic Monitoring Sites

Test Valley Borough Council does not have any Automatic Monitoring Sites.

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)
S1	Winchester Road - East	Roadside	436129	121398	NO ₂	No	5.9	1.0	No	1.5
S2	Duttons Road	Roadside	435376	121786	NO ₂	No	1.5	1.5	No	2.0
S3	Palmerstons Street - West	Roadside	435474	121089	NO ₂	No	3.0	1.3	No	2.0
S4	Romsey (A27) By-pass	Roadside	434927	120689	NO ₂	No	5.3	3.0	No	2.0
S5	Palmerstons Street - East	Roadside	435473	121125	NO ₂	No	0.0	2.0	No	1.8
S6	Winchester Road - West	Roadside	436079	121388	NO ₂	No	6.0	1.5	No	2.0
S7	Alma Road - South	Roadside	435696	121245	NO ₂	No	2.3	2.0	No	2.0
S8	Alma Road - North	Roadside	435630	121403	NO ₂	No	8.9	2.6	No	2.0
S9	Chilworth Road	Roadside	441760	118091	NO ₂	No	22.0	1.0	No	2.0

Diffusion Tube ID	Site Name	Site Type	X OS Grid Ref (Easting)	Y OS Grid Ref (Northing)	Pollutants Monitored	In AQMA? Which AQMA?	Distance to Relevant Exposure (m) ⁽¹⁾	Distance to kerb of nearest road (m) ⁽²⁾	Tube Co-located with a Continuous Analyser?	Tube Height (m)
S10	Nursling Street, Nursling	Kerbside	436991	116319	NO ₂	No	17.5	0.5	No	2.0
S11	North Baddesley	Roadside	439617	119978	NO ₂	No	7.5	2.0	No	1.5
S12	Kings Somborne	Roadside	435869	130958	NO ₂	No	4.0	1.5	No	1.5
S13	Weyhill (A342), Andover	Roadside	432084	146585	NO ₂	No	10.5	2.5	No	1.5
S14	Humberstone Road (East)	Roadside	436498	144936	NO ₂	No	4.1	1.5	No	2.0
S15	Little Ann (A343)	Roadside	433514	143078	NO ₂	No	14.0	2.0	No	2.0
S16	Nursling (A3057)	Roadside	437747	116652	NO ₂	No	9.4	1.5	No	1.5
S17	New Street, Andover	Roadside	436682	146683	NO ₂	No	5.6	1.5	No	2.4
S18E	Winchester Road, Andover	Roadside	436545	145179	NO ₂	No	6.1	2.3	No	2.4
S19A	West Street, Andover	Roadside	436351	145660	NO ₂	No	16.0	2.3	No	2.4

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 NO₂ Monitoring Results: Non-Automatic Monitoring (µg/m³)

Diffusion Tube ID	X OS Grid Ref (Easting)	Y OS Grid Ref (Northing)	Site Type	Valid Data Capture for Monitoring Period (%) ⁽¹⁾	Valid Data Capture 2024 (%) ⁽²⁾	2020	2021	2022	2023	2024
S1	436129	121398	Roadside	98.7	98.7	32.2	28.3	20.6	21.2	19.2
S2	435376	121786	Roadside	98.7	98.7	21.8	21.9	22.3	18.7	16.6
S3	435474	121089	Roadside	98.7	98.7	23.9	23.2	23.3	21.2	19.3
S4	434927	120689	Roadside	98.7	98.7	18.6	17.8	17.5	17.4	14.7
S5	435473	121125	Roadside	98.7	98.7	21.8	19.6	20.5	18.7	16.8
S6	436079	121388	Roadside	98.7	98.7	21.8	26.3	31.1	30.3	26.5
S7	435696	121245	Roadside	98.7	98.7	18.8	19.6	18.2	16.2	17.0
S8	435630	121403	Roadside	98.7	98.7	18.9	19.2	19.8	18.1	15.9
S9	441760	118091	Roadside	98.7	98.7	22.3	24.6	23.2	20.6	19.0
S10	436991	116319	Kerbside	98.7	98.7	26.4	26.2	26.3	23.6	21.0
S11	439617	119978	Roadside	98.7	98.7	25.4	24.0	24.6	23.3	21.1
S12	435869	130958	Roadside	98.7	98.7	11.8	12.0	12.2	10.8	9.0
S13	432084	146585	Roadside	98.7	98.7	15.4	18.0	14.7	13.6	12.3
S14	436498	144936	Roadside	98.7	98.7	14.1	13.9	14.0	12.0	10.2
S15	433514	143078	Roadside	98.7	98.7	18.7	19.0	18.1	16.6	15.6
S16	437747	116652	Roadside	98.7	98.7	21.3	21.8	21.9	20.0	19.2
S17	436682	146683	Roadside	98.7	98.7	30.2	30.2	32.1	28.1	24.8
S18E	436545	145179	Roadside	98.7	98.7	-	-	-	22.5	20.8
S19A	436351	145660	Roadside	98.7	98.7	-	-	-	-	12.0

☒ Annualisation has been conducted where data capture is <75% and >25% in line with LAQM.TG22. It is confirmed that no data required annualisation for 2024.

☒ 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 $\mu\text{g}/\text{m}^3$.

Exceedances of the NO_2 annual mean objective of $40\mu\text{g}/\text{m}^3$ are shown in **bold**.

NO_2 annual means exceeding $60\mu\text{g}/\text{m}^3$, indicating a potential exceedance of the NO_2 1-hour mean objective are shown in **bold and underlined**.

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

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

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

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

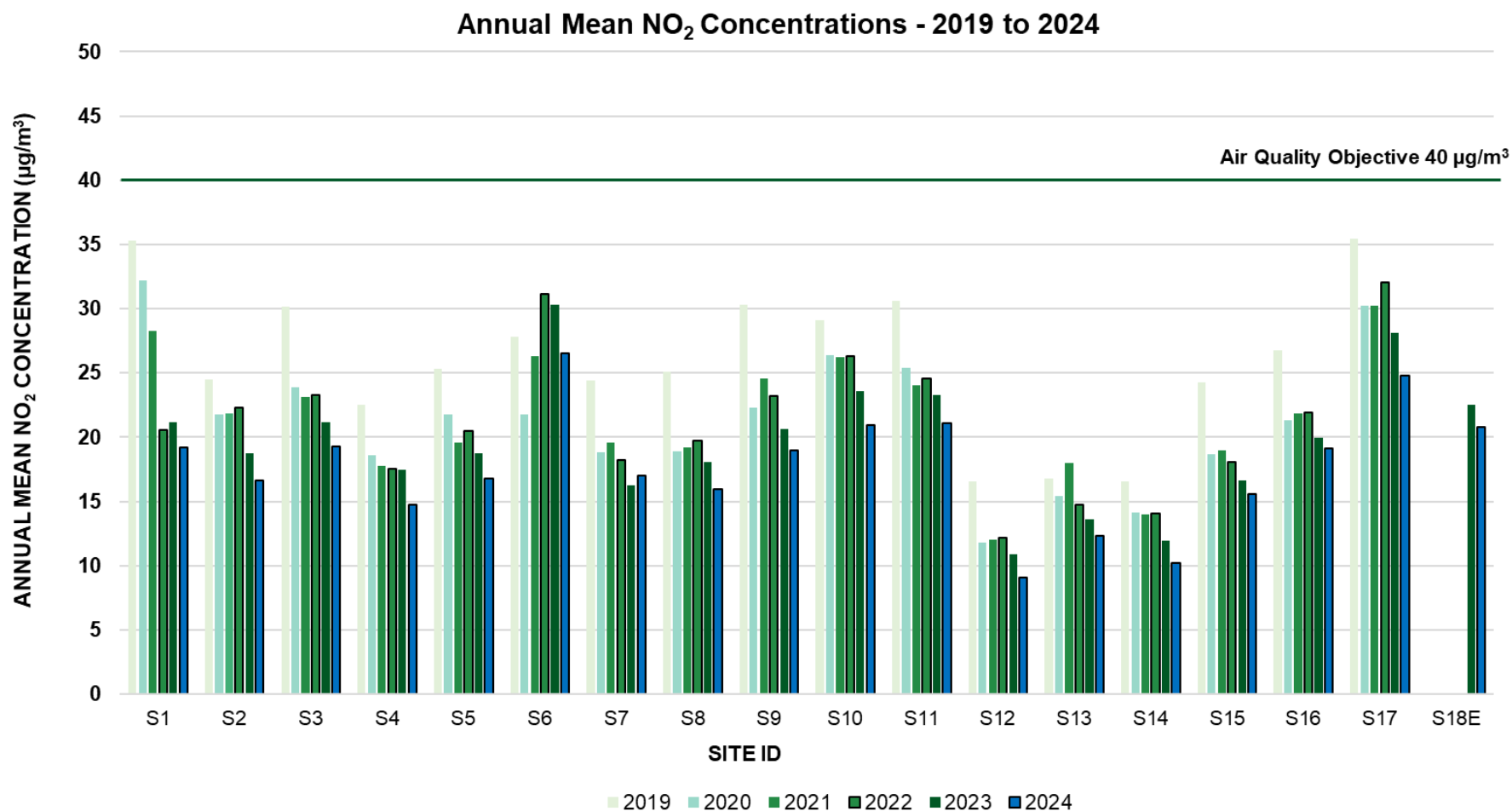
Figure A.1 – Trends in Annual Mean NO₂ Concentrations

Figure A.1. Annual mean concentrations of NO₂ (in µg/m³) for the 6-year period 2019 to 2024 at 18 monitoring sites within Test Valley Borough. The two years of data for site S18E has been included as it is intended to retain this site for long-term monitoring. The majority of sites, with the exception of S6, show concentrations of NO₂ continuing to decrease after a drop off in 2020. All sites show concentrations of NO₂ within the air quality objective of 40 µg/m³

Appendix B: Full Monthly Diffusion Tube Results for 2024

Table B.1 – NO₂ 2024 Diffusion Tube Results (µg/m³)

DT ID	X OS Grid Ref (Easting)	Y OS Grid Ref (Northing)	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual Mean: Raw Data	Annual Mean: Annualised and Bias Adjusted (0.78)	Annual Mean: Distance Corrected to Nearest Exposure	Comment
S1	436129	121398	27.9	30.2	27.4	23.6	22.3	21.3	17.6	19.4	21.9	26.5	32.9	26.0	24.7	19.2	n/a	
S2	435376	121786	26.8	24.1	21.7	18.9	20.4	17.6	16.2	17.5	21.8	25.5	28.9	18.1	21.3	16.6	n/a	
S3	435474	121089	28.5	33.0	29.6	23.4	20.4	23.0	21.0	24.4	22.6	18.2	31.2	24.3	24.8	19.3	n/a	
S4	434927	120689	16.7	24.3	21.1	14.8	18.8	14.2	15.7	19.1	19.0	20.2	25.2	17.5	18.9	14.7	n/a	
S5	435473	121125	27.1	23.9	21.0	18.8	22.9	17.2	15.1	17.1	20.6	25.5	28.0	21.0	21.5	16.8	n/a	
S6	436079	121388	34.3	35.3	36.2	34.8	30.1	32.0	28.2	29.4	39.0	36.1	41.6	33.8	34.0	26.5	n/a	
S7	435696	121245	27.5	29.4	24.6	18.4	19.7	16.3	17.0	17.3	19.2	25.1	27.1	19.9	21.8	17.0	n/a	
S8	435630	121403	26.2	25.2	23.7	17.6	19.9	17.0	16.6	18.0	19.6	22.9	24.9	14.8	20.4	15.9	n/a	
S9	441760	118091	28.8	32.2	27.9	23.2	24.7	18.2	16.1	18.7	23.1	28.4	31.7	19.3	24.3	19.0	n/a	
S10	436991	116319	34.6	26.8	27.4	29.8	30.2	27.6	26.0	28.0	30.5	24.5	33.3	9.4	26.9	21.0	n/a	
S11	439617	119978	31.3	36.5	32.1	20.2	26.8	24.3	23.0	22.4	21.9	29.6	32.2	24.0	27.0	21.1	n/a	
S12	435869	130958	17.0	15.0	14.3	10.7	8.2	7.5	7.0	9.7	11.8	11.5	17.6	10.6	11.6	9.0	n/a	
S13	432084	146585	18.2	18.0	18.1	14.0	16.2	14.4	9.7	12.4	15.1	18.7	20.7	14.4	15.8	12.3	n/a	
S14	436498	144936	20.2	14.9	14.7	11.6	11.6	8.6	7.3	8.5	10.4	15.4	21.3	14.2	13.1	10.2	n/a	
S15	433514	143078	24.5	21.9	19.0	17.0	20.1	16.5	14.7	17.9	18.6	25.6	24.3	19.0	20.0	15.6	n/a	
S16	437747	116652	35.9	33.5	28.2	27.2	23.0	22.4	20.0	20.2	22.9	23.4	26.4	14.0	24.6	19.2	n/a	
S17	436682	146683	38.5	32.3	31.1	31.5	32.1	29.0	25.8	26.0	35.2	37.5	34.7	28.1	31.8	24.8	n/a	
S18E	436545	145179	25.0	27.6	28.6	25.5	29.3	24.6	21.1	22.0	28.7	32.2	33.1	22.5	26.6	20.8	n/a	
S19A	436351	145660	22.7	16.3	18.3	13.2	12.5	11.4	8.5	10.6	12.5	19.3	24.8	16.1	15.4	12.0	n/a	

- ☒ All erroneous data has been removed from the NO₂ diffusion tube dataset presented in Table B.1.
- ☒ Annualisation has been conducted where data capture is <75% and >25% in line with LAQM.TG22.
- ☐ Local bias adjustment factor used.
- ☒ National bias adjustment factor used.
- ☒ Where applicable, data has been distance corrected for relevant exposure in the final column.
- ☒ Test Valley Borough Council confirm that all 2024 diffusion tube data has been uploaded to the Diffusion Tube Data Entry System.

Notes:
Exceedances of the NO₂ annual mean objective of 40µg/m³ are shown in **bold**.

NO₂ annual means exceeding 60µg/m³, indicating a potential exceedance of the NO₂ 1-hour mean objective are shown in **bold and underlined**.

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 Test Valley Borough Council During 2024

TVBC has not identified any significant new sources relating to air quality within the reporting year of 2024. Road traffic volumes, which were relatively low during 2020 and 2021, resulted in a noticeable drop in NO₂ concentrations during this period. Road traffic data for 2024 indicates that volumes of traffic have increased and are now only 0.7% below that in 2019 (DoT, 2025^a). However, monthly recorded NO₂ levels at all sites during 2024 have not returned to pre-pandemic levels and show a decrease compared to 2023.

Additional Air Quality Works Undertaken by Test Valley Borough Council During 2024

TVBC carried out a public engagement exercise, with an online survey open between 25th November 2024 to 20th January 2025. The survey aimed to gather information from the public about their awareness of local air quality issues and to help guide development of the councils Air Quality Strategy, which is being generated to raise awareness of air quality matters within the borough and highlight priority areas that the council will address.

A summary report of the results of this survey is available on the councils website at:

<https://www.testvalley.gov.uk/housingandenvironmentalhealth/environmentalprotection/air-quality>

The Environmental Protection Team also hosted an internal council workshop event which was used to gain feedback on plans for the councils air quality strategy and to help identify or further develop actions being undertaken by the council where air quality can be addressed through processes such as planning, housing, building regulations, fleet development and rural infrastructure development. The event highlighted multiple areas where actions are being undertaken to minimise emissions and where local community actions are actively reducing emissions – such as the community bus running between Broughton, Mottisfont and Dunbridge.

A Preliminary Transport Assessment was carried out by Ridge and published in January 2024 for the Local Plan 2040 in anticipation of targets for development within TVBC. This

work is aimed at identifying areas where increased development may result in higher traffic movements which may increase congestion and reduce air quality. The findings are being reviewed and are scheduled to be updated for the Local Plan 2042 – with a greater number of new homes potentially further impacting the projected congestion at key points on the TVBC road network.

As part of the work towards developing the Test Valley Local Plan 2040, a preliminary transport assessment was undertaken and published in January 2024

(<https://www.testvalley.gov.uk/planning-services/planningpolicy/local-development-framework/draft-local-plan-2042?chapter=3>). This report explored the potential impacts of development within the north and south of the borough with the aim of informing the spatial growth options for the Local Plan. The study will also help to determine a sustainable transport strategy for the sites as well as increasing our understanding of the likely potential impact on air quality within the area which can be mitigated through infrastructure development planning, which is also included within the development of the Local Plan. This is now due to be updated within the Local Plan 2042 due to the increased level of development required by central government.

In addition, an Air Quality Modelling Assessment was carried out and published in January 2024, which is to be used to inform the Appropriate Assessment of the Habitats Regulations Assessment. This focuses on the impact of traffic related emissions due to planned development during the Local Plan period on sensitive ecosystems within the Salisbury Plain, New Forest, Mottisfont Bats, Emer Bog and Solent Maritime Special Areas of Conservation (SACs) and considers the following four key pollutants shown to affect sensitive ecosystems: ammonia (NH₃), oxides of nitrogen (NO_x), total nitrogen deposition and total acid deposition.

QA/QC of Diffusion Tube Monitoring

The diffusion tubes used by TVBC are supplied and analysed (50% TEA in Acetone) by Socotec Laboratories, Didcot, Oxfordshire. The laboratory is UKAS accredited in accordance with International Standard ISO/IEC 17025:2017, with a consistent score of 100% for the Laboratory Performance in AIR NO₂ Proficiency Testing Scheme (AIR-PT) for rounds of performance testing between January 2024 (AR062) and October 2024 (AR066). The precision reported by the laboratory for 2024 indicated 30 incidents of Good precision, with 3 incidents of Bad precision for duplicate/triplicate analyses.

With the exception of tube exposure for November, monitoring within TVBC has been completed in adherence to the 2024 Diffusion Tube Monitoring Calendar (± 2 Days). Due to diffusion tubes not being delivered on time for the November deployment date (6th November 2024) October tubes were collected on the 7th November and delivered to the laboratory, with deployment of the November tubes carried out on the 12th November, with collection on the 4th December as per the suggested exposure periods. Whilst this data is derived from an exposure period shorter than the recommended 4 weeks (- 4 days), this has been accounted for in the Diffusion Tube Data Processing Tool (v5.3).

There are no missing data within table B1 and no erroneous data identified. Data recovery for the 2024 monitoring period is very good, with 98.7% data recovery from all 19 monitoring sites. The reduction from 100% is only due to the short exposure duration for November 2024, caused by a laboratory delay.

Data quality is interpreted as very good. Some monthly variation can be observed within the data which is consistent with environmental fluctuations. Similar to 2023, a negative shift was noted within the raw data during December 2024 (table B.1). Examining data from both diffusion tube and automatic monitoring sites from neighbouring authorities, this drop can be seen consistently across the region – including at triplicate sites (e.g. Eastleigh Borough Council, 2025). Data is therefore interpreted to be representative of the atmospheric concentrations of NO₂ at the individual monitoring stations. The observed decreases are interpreted to result from regional atmospheric conditions and possible resulting changes in traffic/other anthropogenic behaviour that could influence atmospheric NO₂ and has therefore been included within the annual average calculations for 2024.

Diffusion Tube Annualisation

All diffusion tube monitoring locations within Test Valley Borough Council recorded data capture of at least 75% therefore it was not required to annualise any monitoring data. In addition, any sites with a data capture below 25% do not require annualisation.

Diffusion Tube Bias Adjustment Factors

The diffusion tube data presented within the 2024 ASR have been corrected for bias using an adjustment factor. Bias represents the overall tendency of the diffusion tubes to under or over-read relative to the reference chemiluminescence analyser. LAQM.TG22 provides guidance with regard to the application of a bias adjustment factor to correct diffusion tube monitoring. Triplicate co-location studies can be used to determine a local bias factor

based on the comparison of diffusion tube results with data taken from NO_x/NO₂ continuous analysers. Alternatively, the national database of diffusion tube co-location surveys provides bias factors for the relevant laboratory and preparation method.

Test Valley Borough Council have applied a national bias adjustment factor of 0.78 to the 2024 monitoring data. A summary of bias adjustment factors used by Test Valley Borough Council over the past five years is presented in Table C.1.

The national bias adjustment factor has been derived from the revised April 2025 version of the National Diffusion Tube Bias Adjustment Factor Spreadsheet. This utilised a total of 33 studies employing ESG (50% TEA in Acetone) diffusion tubes analysed at the SOCOTEC laboratory in Didcot during 2024. 30 studies achieved 'Good' precision, with three studies indicated as having 'Poor' precision. Individual study locations yield a range of bias factors from 0.54 to 1.13, with the mean from 33 studies of 0.78 utilised for the TVBC data adjustment.

Table C.1 – Bias Adjustment Factor

Monitoring Year	Local or National	If National, Version of National Spreadsheet	Adjustment Factor
2024	National	04/25	0.78
2023	National	03/24	0.77
2022	National	03/23	0.76
2021	National	03/22	0.78
2020	National	03/21	0.77

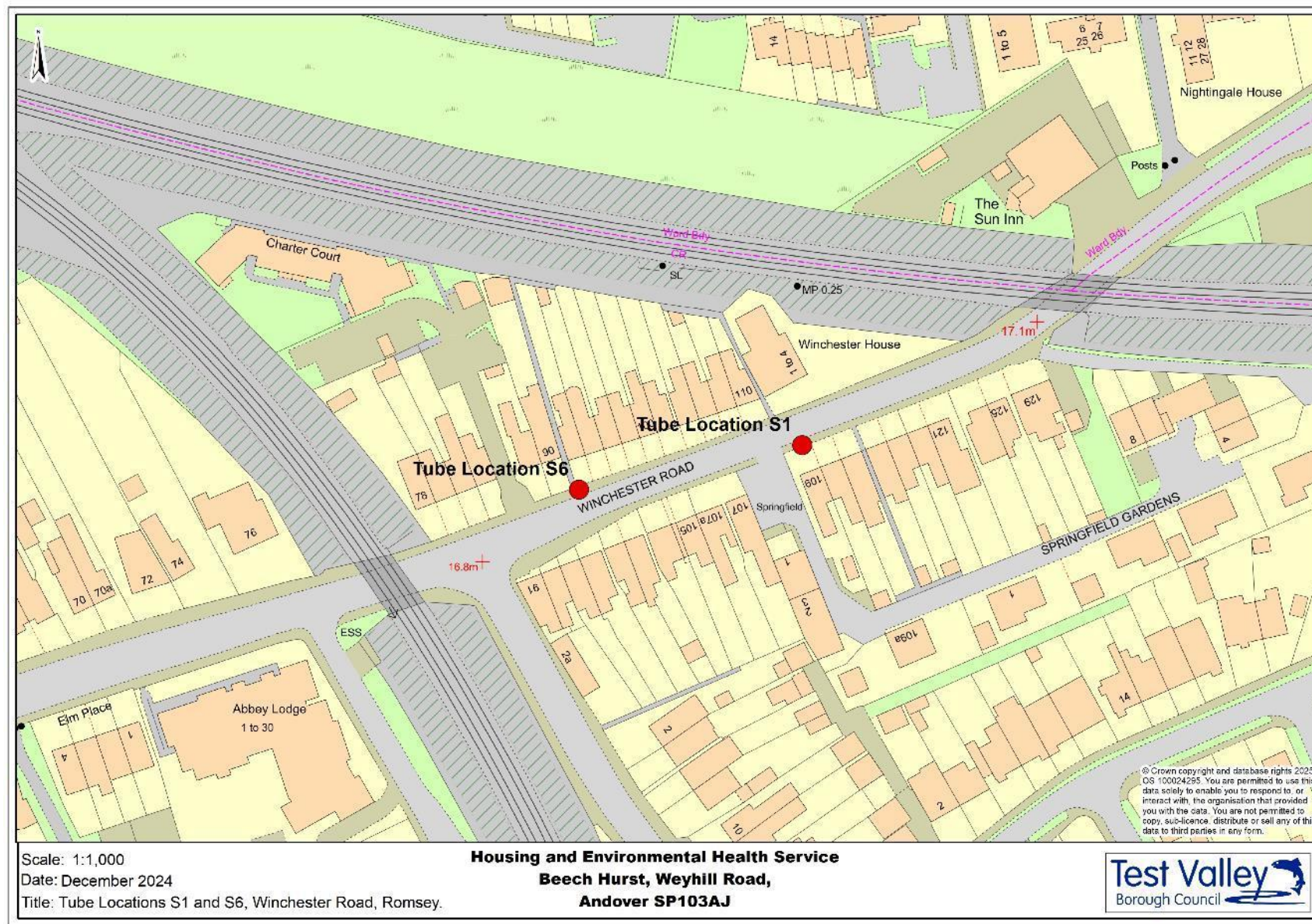
NO₂ Fall-off with Distance from the Road

Wherever possible, monitoring locations are representative of exposure. However, where this is not possible, the NO₂ concentration at the nearest location relevant for exposure has been estimated using the Diffusion Tube Data Processing Tool/NO₂ fall-off with distance calculator available on the LAQM Support website. Where appropriate, non-automatic annual mean NO₂ concentrations corrected for distance are presented in Table B.1.

No diffusion tube NO₂ monitoring locations within Test Valley Borough Council required distance correction during 2024.

Appendix D: Map(s) of Monitoring Locations

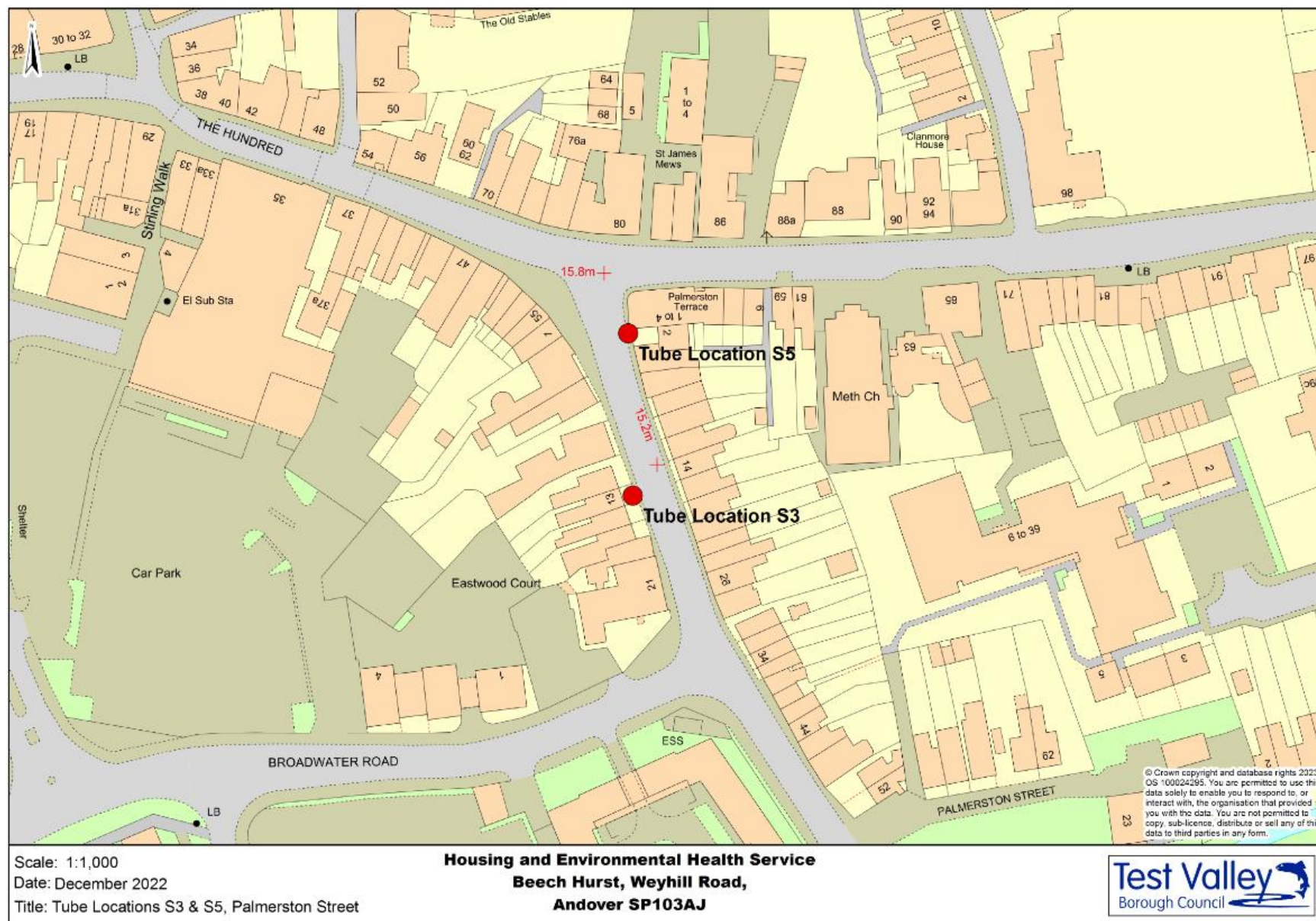
Figure D.1 – Maps of Non-Automatic Monitoring Site – please refer to subsequent pages.



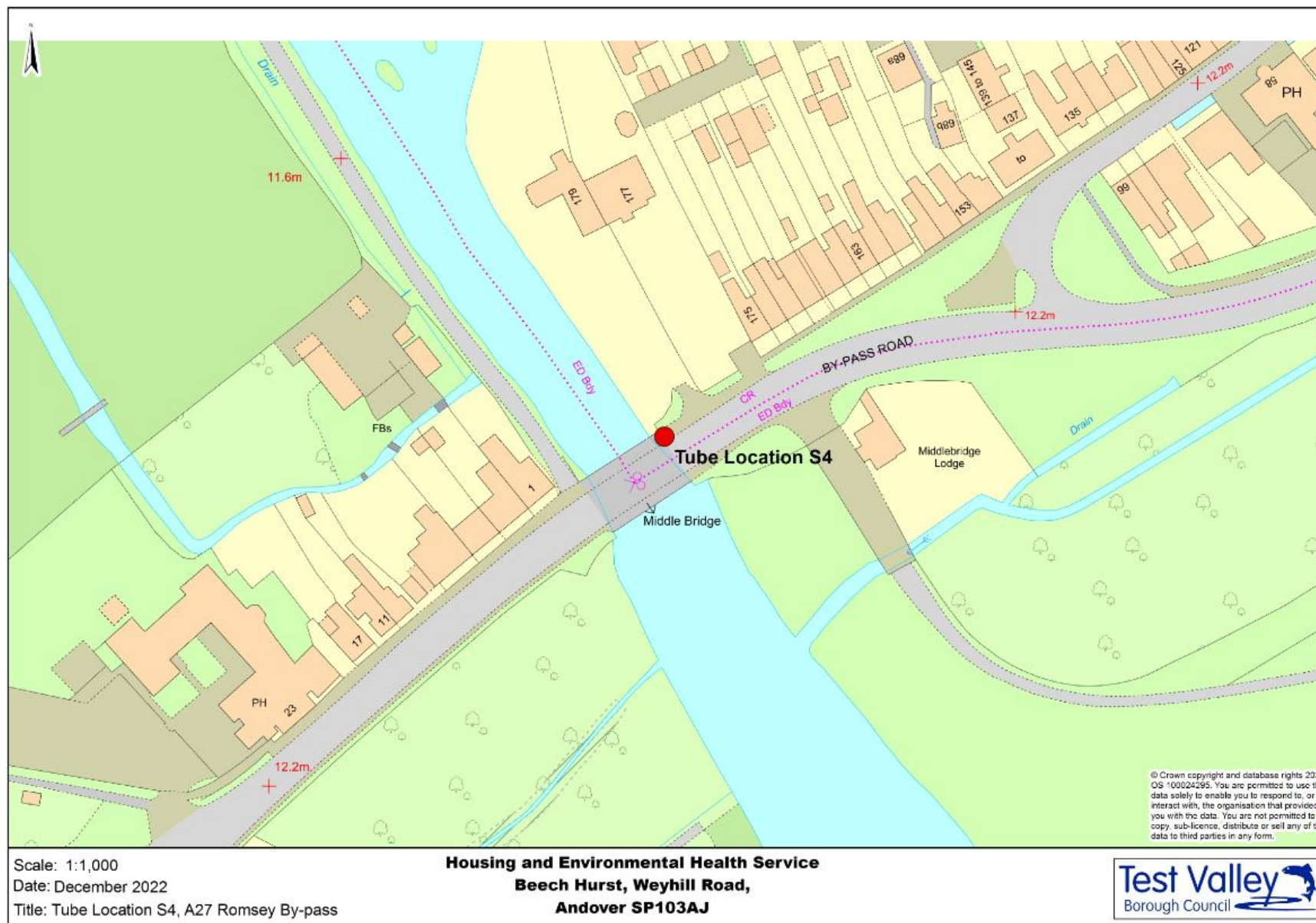
Non-Automatic Monitoring Sites: Numbers S1, S6 & S18C, Winchester Road, Romsey



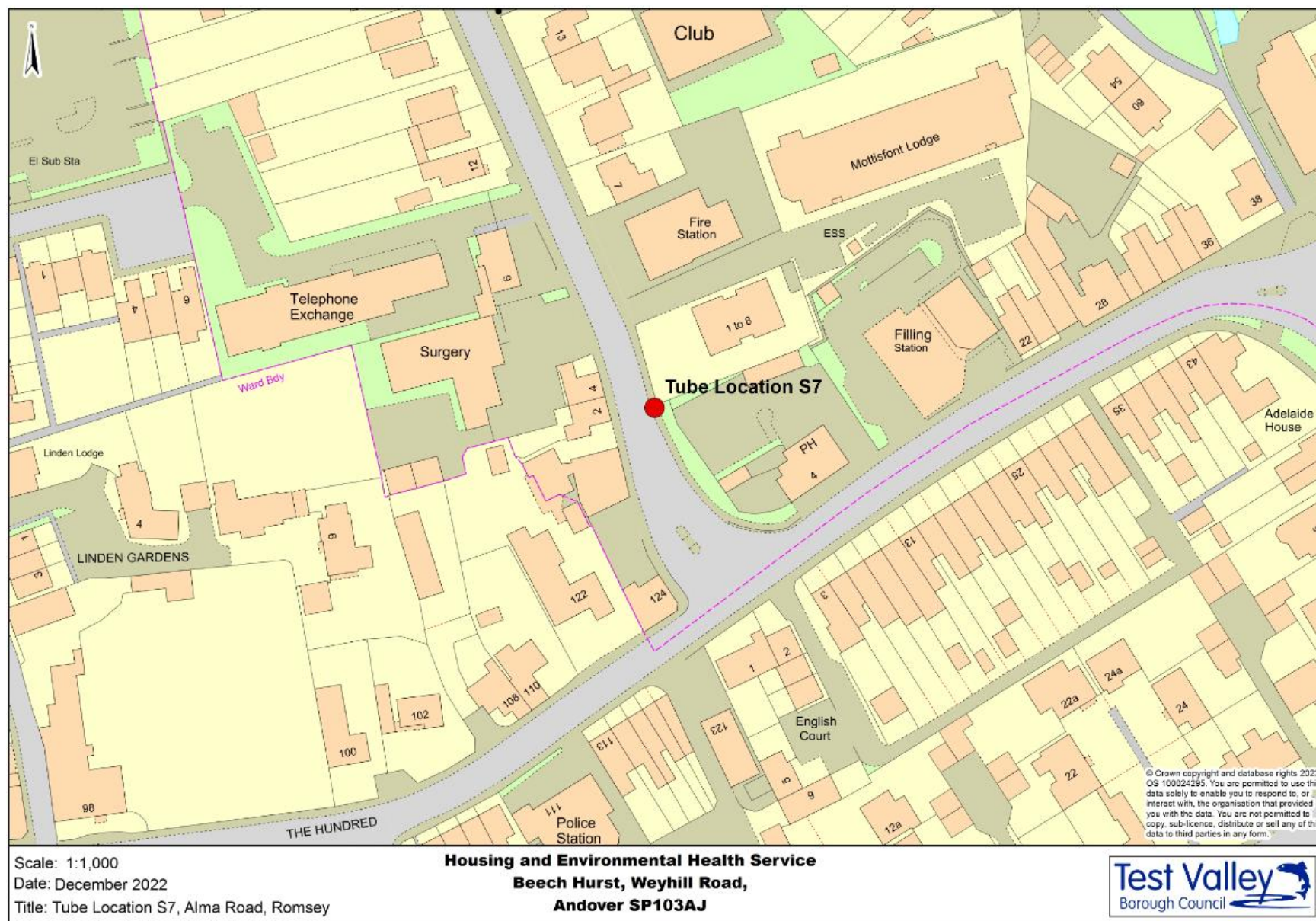
Non-Automatic Monitoring Sites: Number S2, Duttons Road, Romsey



Non-Automatic Monitoring Sites: Numbers S3 & S5, Palmerston Street, Romsey



Non-Automatic Monitoring Sites: Number S4, A27 Romsey By-pass



Non-Automatic Monitoring Sites: Number S7, Alma Road, Romsey



Non-Automatic Monitoring Sites: Number S8, Alma Road, Romsey



Non-Automatic Monitoring Sites: Number S9, Chilworth Road, Chilworth



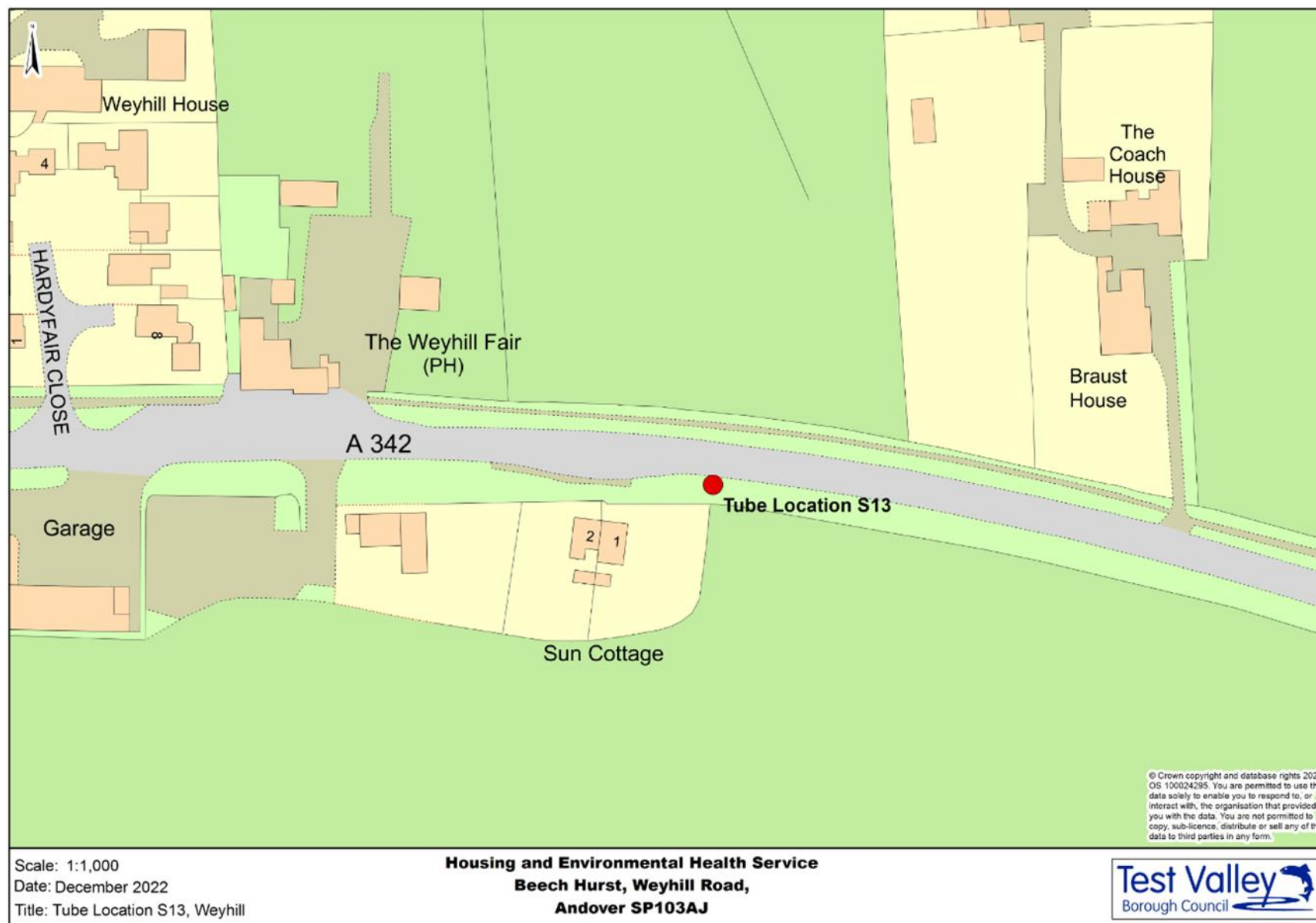
Non-Automatic Monitoring Sites: Number S10, Nursling Street, Nursling



Non-Automatic Monitoring Sites: Number S11, Botley Road, North Baddesley



Non-Automatic Monitoring Sites: Number S12, A3057, Kings Somborne



Non-Automatic Monitoring Sites: Number S13, A342, Weyhill



Non-Automatic Monitoring Sites: Number S14, Humberstone Road, Andover



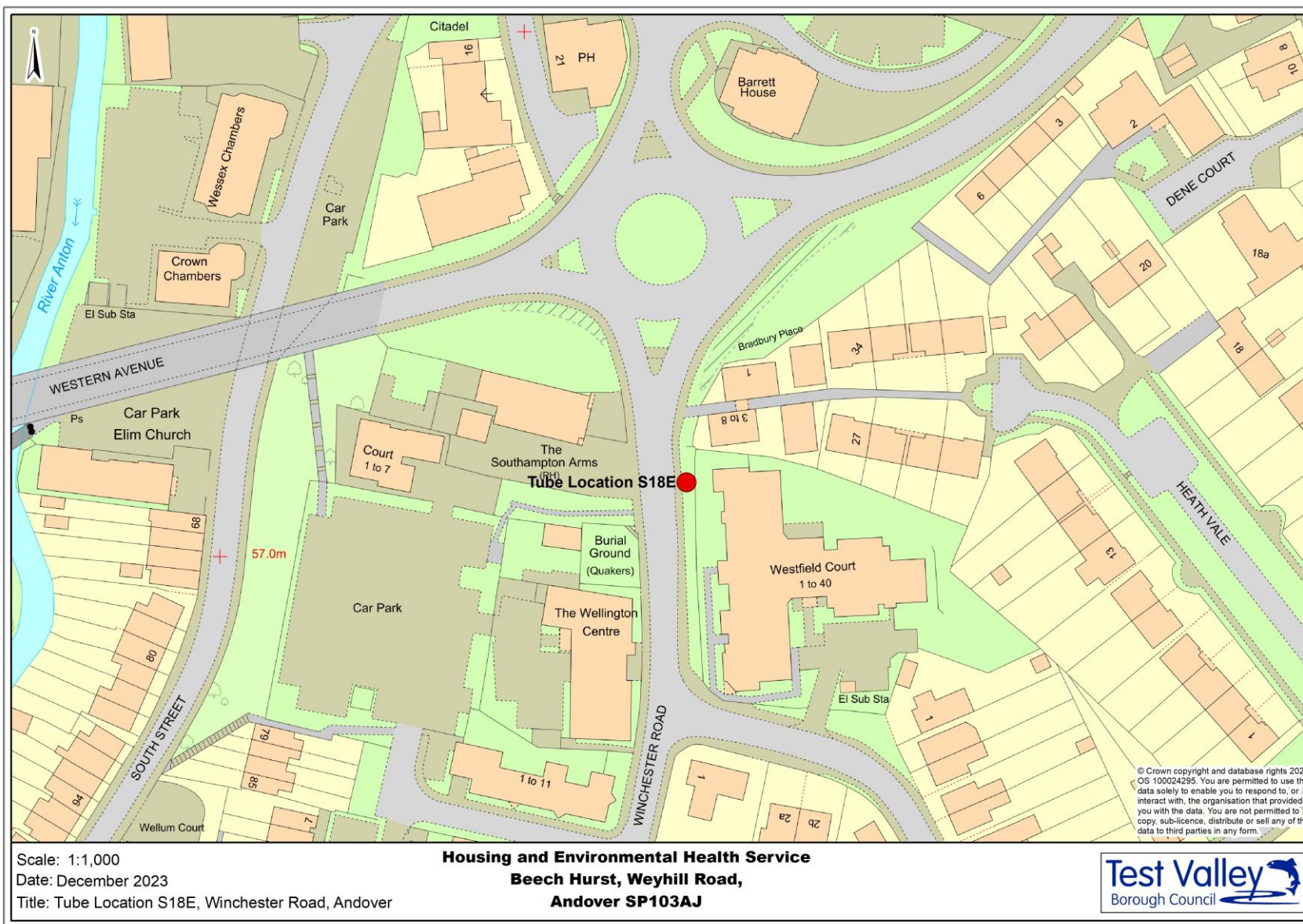
Non-Automatic Monitoring Sites: Number S15, A343, Little Ann



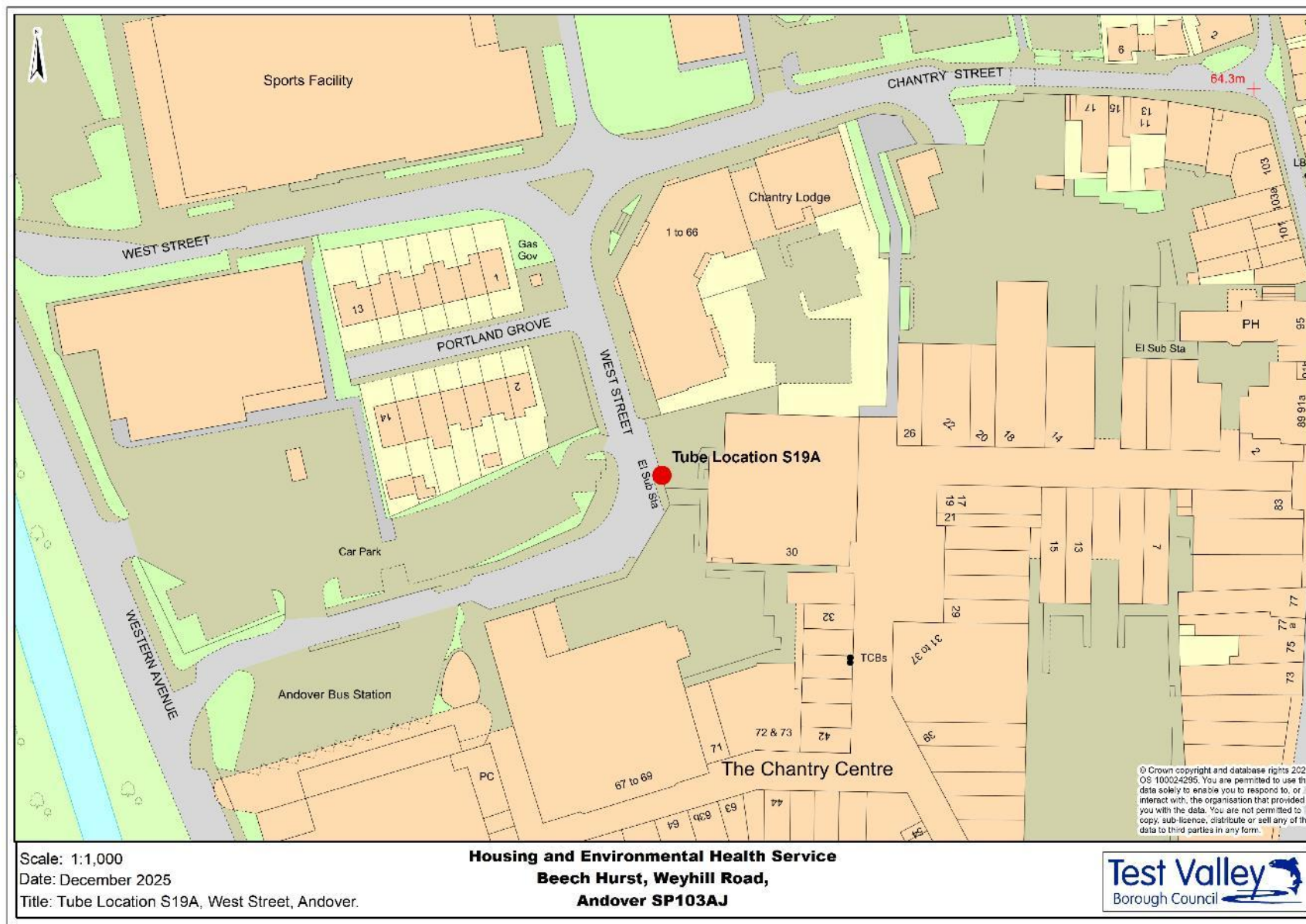
Non-Automatic Monitoring Sites: Number S16, Romsey Road, Nursling



Non-Automatic Monitoring Sites: Number S17, New Street, Andover



Non-Automatic Monitoring Sites: Number S18E, Winchester Road, Andover



Non-Automatic Monitoring Sites: Number S19A, Winchester Road, Andover

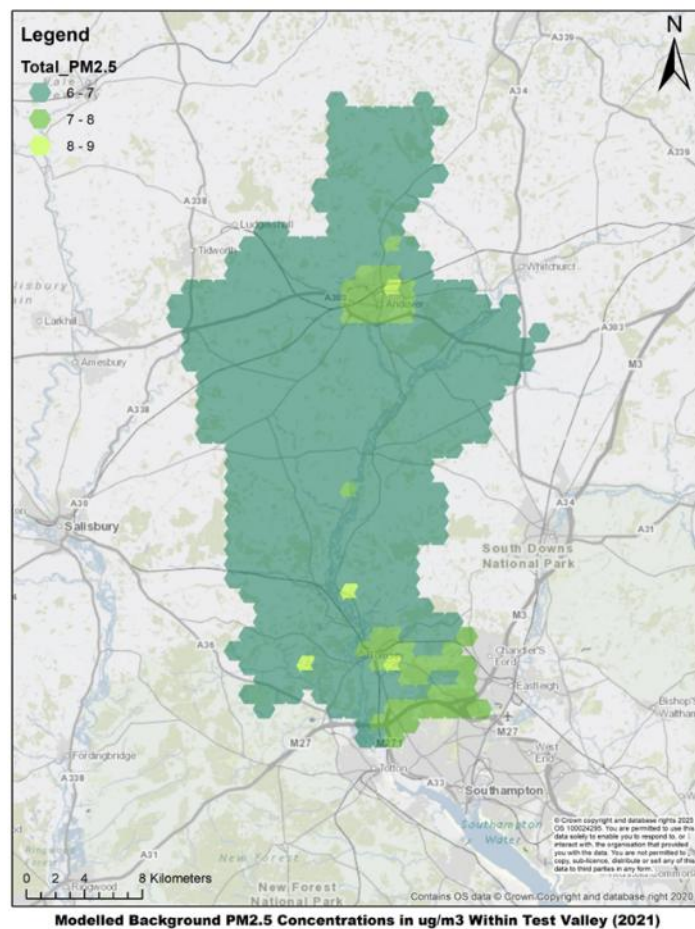
Appendix E: Summary of Air Quality Objectives in England

Table E.1 – Air Quality Objectives in England²

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

² The units are in microgrammes of pollutant per cubic metre of air (µg/m³).

Appendix F: Modelled Annual Average PM_{2.5} within Test Valley Borough

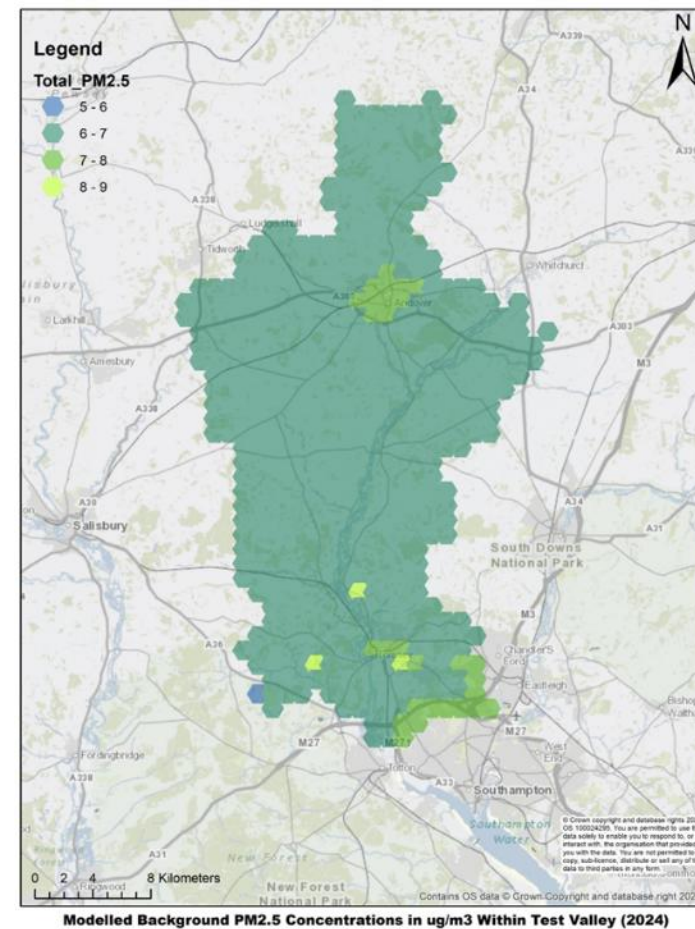


Housing and Environmental Health Service
Beech Hurst, Weyhill Road,
Andover SP10 3AJ

Date: June 2025



Figure F.1 – Background PM_{2.5} Modelled annual Average 2021



Housing and Environmental Health Service
Beech Hurst, Weyhill Road,
Andover SP10 3AJ

Date: June 2025



Figure F.2 – Background PM_{2.5} Modelled annual Average 2024

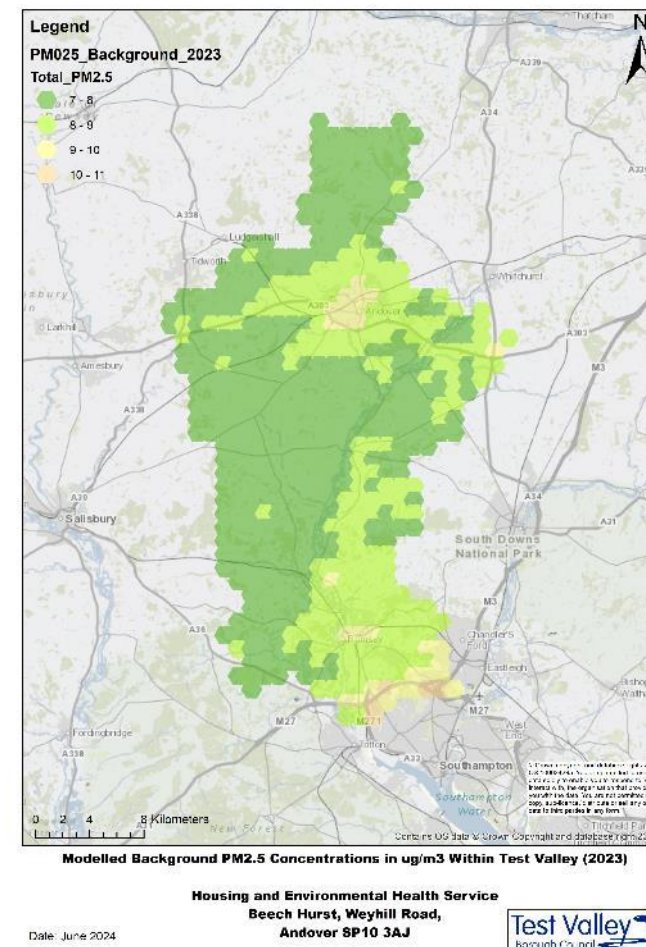
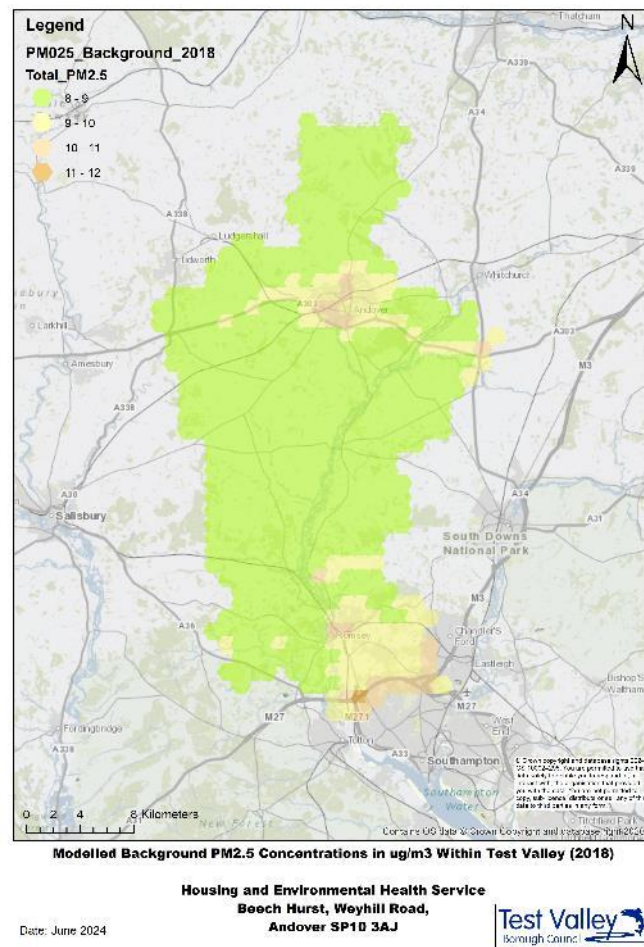


Figure F.3 – Background PM_{2.5} Modelled annual Average 2018

Figure F.4 – Background PM_{2.5} Modelled annual Average 2023

Glossary of Terms

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

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