

Wiltshire Council



2020 Air Quality Annual Status Report (ASR)

In fulfilment of Part IV of the
Environment Act 1995
Local Air Quality Management

July 2020

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Executive Summary: Air Quality in Our Area

Air Quality in Wiltshire

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

The annual health cost to society of the impacts of particulate matter alone in the UK is estimated to be around £16 billion³.

The air quality in Wiltshire is predominantly very good with most of the county having clean unpolluted air. However, there are a small number of locations where the combination of traffic volume, road layout and topography has resulted in pollutants being trapped allowing concentrations to increase to unacceptable levels.

There are two pollutants included within the Local Air Quality Management regime that are the cause of concern in Wiltshire; nitrogen dioxide (NO₂) and fine particulate matter (PM₁₀).

In recent times the trend has been toward improving air quality in the county of Wiltshire and this is borne out by the 2019 diffusion tube results with a reduction in levels at almost all our sites. The real time monitoring shows a similar trend with average mean levels down at 2 of the 4 sites, levels consistent at the other 2.

Average PM₁₀ levels also remained consistent and well below the annual mean objective but with some exceedances of the 24hour mean reported at all sites but well below the objective.

There are currently eight Air Quality Management Areas (AQMAs) in Wiltshire which have been declared in respect of the annual mean objective for nitrogen dioxide, located in the following towns;

- Westbury

¹ Environmental equity, air quality, socioeconomic status and respiratory health, 2010

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

³ Defra. Abatement cost guidance for valuing changes in air quality, May 2013

- Devizes
- Calne
- Marlborough
- Salisbury
- Bradford on Avon

There are three separate AQMAs declared for Salisbury: the city centre, the A30 London Road between St Mark's roundabout and the railway allotments and Wilton Road between St Paul's roundabout and Skew Bridge which is part of the A36 trunk road and falls within the control of the Highways England.

The AQMA in Bradford on Avon has also been declared in respect of the annual mean objectives for PM₁₀ and it is proposed to revoke this AQMA order because of continued compliance with the relevant objective. Local dialogue will be included to address any concerns raised.

Maps of the Wiltshire AQMAs are available via the Wiltshire Air Quality website (<http://www.wiltshireairquality.org.uk>).

The Council has established local air quality steering groups to spearhead local initiatives to improve air quality where AQMAs have been declared. These groups report directly to their Area Boards. The groups are composed of local councillors, interest groups and private individuals and they draw upon expertise of other services and experts as they deem necessary. They are tasked with reporting to their Area Board annually. Group activity varies across the county and we will revisit Marlborough and Westbury Area Boards to provide support and assistance.

Actions to Improve Air Quality

There is a considerable amount of activity being undertaken by Wiltshire Council that can influence air quality. Table 2.2 summarises the key measures contained in our action plan. We have adopted a high-level broad approach to ensure the document is accessible with links to relevant supporting information and other council initiatives and strategies.

A review of the Wiltshire Air Quality Action Plan (AQAP) identified within this document as a core action will result in a future AQAP having measures that are based on the principles of emissions source apportionment and high resolution

modelling. We are currently working with our key partners to determine the nature of future air quality measures, and we expect the AQAP to link and feed into strategic and local planning policy to ensure that there is a wider focus on achieving compliance with national objectives within each of our AQMAs. This will also include a greater focus on practical measures from developers and funding for ongoing measures that will make tangible contributions towards meeting air quality objectives. In recent months, the impact of Covid19 on air quality in each AQMA has been significant and our intention is to capitalise on transport related social distancing measures and ensure that where these schemes occur within our AQMAs they form part of the future AQAP.

An increase in the Council's evidence base on air quality is expected through additional monitoring made possible through Town Councils and s.106 money.

Further engagement with Area Boards will continue to raise the profile of air quality in Wiltshire during 2020 and 2021.

Conclusions and Priorities

The continuous air quality monitoring across Wiltshire has confirmed that no exceedances of the Particulate Matter air quality objectives (both for annual mean and 24-hour mean). The annual mean levels were similar to those recorded in 2019. Exceedances of the 24-hour mean were recorded at all 3 sites but individual site totals were well below the Air Quality objective.

In respect of the NO₂ monitoring; the continuous monitoring has shown improvements in the annual mean levels in both Salisbury and Devizes whilst remaining the same in Salisbury and Royal Wootton Bassett when compared to 2018. Only 1 exceedance of the 1 hour mean objective was recorded across the county, down from 5 in 2018 and 7 in 2017.

These results are backed up by the passive monitoring which has shown a significant decrease in the number of exceedances reported with 8 sites exceeding the annual mean objective at the façade of relevant exposure, down from 17 in 2018. A decrease in the annual mean level was noted at almost all our passive monitoring sites, clearly shown in the graphs presented in Appendix A.

None of the sites reporting an exceedance were outside of existing AQMA's and there was at least one exceedance within each of the existing Air Quality Management Areas.

One passive monitoring site (DT33: Masons Lane, Bradford On Avon) reported a level of >60 ug/m³ indicating a potential exceedance of the 1-hour mean objective for NO₂ although when corrected for distance to the receptor this fell to below 60.

We will continue to monitor in all Wiltshire towns including monitoring in areas of deprivation within all Wiltshire Council Area Boards. It should be noted that several new sites have been employed in 2019 to reflect this commitment.

Local Engagement and How to get Involved

Wiltshire Council has a dedicated website for air quality administered by both Public Health Wiltshire and Public Protection Services. The site is designed as a resource for consultants, students, and residents with an interest in air quality. Individuals can sign up to the "Know and Respond" text alerts system to receive alerts of episodes of poor air quality, download their own reports and find a range of other information on air quality. The site can be found at <http://www.wiltshireairquality.org.uk>

In the areas where AQMAs have been declared working groups have been established. These groups include members of the public. Further information about these groups is available here: <http://www.wiltshire.gov.uk/council-democracy-area-boards>

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Figure A.4 – Trends in Number of 24-Hour Mean PM₁₀ Results >50µg/m³**Error! Bookmark not defined.**

1 Local Air Quality Management

This report provides an overview of air quality in Wiltshire during 2019. 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 Wiltshire Council to improve air quality and any progress that has been made.

The statutory air quality objectives applicable to LAQM in England can be found in Table E.1 in Appendix E.

2 Actions to Improve Air Quality

2.1 Air Quality Management Areas

Air Quality Management Areas (AQMAs) are declared when there is an exceedance or likely exceedance of an air quality objective. After declaration, the authority must prepare an Air Quality Action Plan (AQAP) within 12-18 months setting out measures it intends to put in place in pursuit of compliance with the objectives.

A summary of AQMAs declared by Wiltshire Council can be found in Table 2.1.

Further information related to declared or revoked AQMAs, including maps of AQMA boundaries are available online at <http://www.wiltshireairquality.org.uk>

Table 2.1 – Declared Air Quality Management Areas

AQMA Name	Date of Declaration	Pollutants and Air Quality Objectives	City / Town	One Line Description	Is air quality in the AQMA influenced by roads controlled by Highways England?	Level of Exceedance (maximum monitored/modelled concentration at a location of relevant exposure)				Action Plan		
						At Declaration		Now		Name	Date of Publication	Link
AQMA 1 Salisbury City Centre	23/11/2007	NO ₂ Annual Mean	Salisbury	An area encompassing the city centre bounded by main ring roads to North, East and the River Avon to the East and South.	YES	n/a		43	µg/m ³	Air Quality Action Plan for Wiltshire June 2015	01/06/2015	http://www.wiltshireairquality.org.uk/reports
AQMA 2 Salisbury London Road	11/11/2007	NO ₂ Annual Mean	Salisbury	Residential properties in vicinity of St Mark's roundabout and following London Road as far as the railway tunnel.	YES	43	µg/m ³	35	µg/m ³	Air Quality Action Plan for Wiltshire June 2015	01/06/2015	http://www.wiltshireairquality.org.uk/reports
AQMA 3 Salisbury Wilton Road (extended)	03/03/2016	NO ₂ Annual Mean	Salisbury	Part of Devizes Road and Wilton Road as far as Skew Bridge	YES	58	µg/m ³	50	µg/m ³	Air Quality Action Plan for Wiltshire June 2015	01/06/2015	http://www.wiltshireairquality.org.uk/reports

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AQMA 4 Bradford on Avon	26/11/20 01	NO ₂ & PM ₁₀ Annual Mean	Bradford on Avon	Main roads in the centre of the town.	NO	65	µg/ m ³	53	µg/ m ³	Air Quality Action Plan for Wiltshire June 2015	01/06/2 015	http://www.wiltshireairquality.org.uk/reports
AQMA 5 - Westbury	26/11/20 01	NO ₂ Annual Mean	Westbury	Main A350 through centre of the town.	NO	52	µg/ m ³	41	µg/ m ³	Air Quality Action Plan for Wiltshire June 2015	01/06/2 015	http://www.wiltshireairquality.org.uk/reports
AQMA 6 Marlborou gh	12/05/20 11	NO ₂ Annual Mean	Marlborou gh	The whole town as described by town council boundary.	NO	59	µg/ m ³	46	µg/ m ³	Air Quality Action Plan for Wiltshire June 2015	01/06/2 015	http://www.wiltshireairquality.org.uk/reports
AQMA 7 Devizes	23/11/20 09	NO ₂ Annual Mean	Devizes	Main roads through the town.	NO	51	µg/ m ³	39	µg/ m ³	Air Quality Action Plan for Wiltshire June 2015	01/06/2 015	http://www.wiltshireairquality.org.uk/reports
AQMA 8 Calne	21/02/20 13	NO ₂ Annual Mean	Calne	Main roads through the town	NO	60	µg/ m ³	48	µg/ m ³	Air Quality Action Plan for Wiltshire June 2015	01/06/2 015	http://www.wiltshireairquality.org.uk/reports

Wiltshire Council confirm the information on UK-Air regarding their AQMA(s) is up to date

2.2 Progress and Impact of Measures to address Air Quality in Wiltshire

Defra's appraisal of last year's ASR concluded the following points and our comment follows each in italic font:

1. It would be useful if future report identified which monitoring sites are in which AQMA (using Table A.2, *in AQMA?* column).

Noted and adopted.

2. Labelling for diffusion tube data was confusing and label order differed between table A.2 to table A.3. It would be useful if a simpler tube labelling system is used (e.g. 1,2,3...), they are ordered the same in the tables and kept the same for the following year. This will make comparing tables and years significantly easier.

This has been changed, tube site labelling now runs sequentially from #1

3. Discussion and choice of the national bias factor, as being more conservative, is well considered.

A similar principle has been adopted for this report.

4. One site, P18/84, monitored concentrations in excess of $60\mu\text{g}/\text{m}^3$, which according to the empirical relationship stated in LAQM.TG(16) suggests likelihood of the 1-hour mean AQO being exceeded. Further investigation of this is required in the 2020 ASR, particularly if monitoring returns similar concentrations. The AQMA order should be amended to include the 1-hour mean objective, if this risk of exceedance persists in 2020. The point around the potential for localised effects and comparison with the nearby monitor is noted, but that should not exclude the consideration of this particular locality, which may benefit from further consideration, and more targeted measures.

This site (now #33) recorded a level well below $60\mu\text{g}/\text{m}^3$ and is located approximately 30 meters from the Bradford on Avon real time monitoring station which recorded no exceedances of the 1-hour mean objective. It is not considered to be a risk.

5. Table A.5 highlights the monitored PM_{10} concentrations in bold, indicating exceedance. However, the concentrations are all compliant. This is misleading to the reader.

Apologies, this was a formatting error.

6. Order of labels are also best to be in ascending order to make comparing of tables easier.

This has been adopted

7. Further to the above, maps could be improved by increasing text size or putting individual site IDs onto a white background, to make it easier to identify monitoring sites names.

Wiltshire Council are currently renewing our mapping system and therefore we are unable to amend the existing maps to indicate the new sites introduced and the revised numbering system introduced because of the comment above (#2). The option to provide a link to the maps of the tube sites was included in the template and we have adopted this for this report.

8. Last year's report noted that the Council plan to revoke AQMA 4 for the PM₁₀ declaration due to 3 years of compliance. This decision is still supported, and the Council should proceed to revocation. For future reference, if the AQMA has not been revoked at time of writing a report, please ensure the AQMA designation is highlighted in Table 2.1. #

The revocation process is underway, table 2.1 amended to reflect this work.

9. The AQAP is lacking comments in the reduction in pollutant from measure and occasionally implementation phase columns. The Council are encouraged to fill all sections of table 2.2 and if unknown to comment 'NA' or 'Unknown'. This will indicate that all columns will have been considered. For further guidance please refer to LAQM Technical Guidance 16 (TG16).

Noted and actioned.

10. The report provides limited discussion of PM_{2.5} issues relative to the Public Health Outcomes Framework. The Council should make measures clearer and identify specific details if possible. For further guidance please refer to TG16.

Noted.

11. Annualisation has not been applied for P18/110 which was in fact necessary as data capture was <75%. The check box in Table A.3 indicates that annualisation has been undertaken, but no other reference is made to this in the report, and calculations not provided, so this is unclear. Please ensure this is corrected, if required, before the report is publicly available. For further guidance please refer to TG16. The omission of annualisation was also a comment from last year's appraisal.

This has been noted. Two sites required annualisation this year and the calculations are provided in Appendix C.

Wiltshire Council has taken forward several direct measures during the current reporting year of 2019 in pursuit of improving local air quality. Details of all measures completed, in progress or planned are set out in Table 2.2 and are summarised below and relevant activity by the Public Protection Team in respect of Air Quality is presented under the appropriate subject headings:

- Passive monitoring regime reviewed and now includes sites in identified areas of deprivation within all Local Area Boards.
- We are working to increase the uptake of Electric Vehicle infrastructure at residential and commercial development via the planning process.
- Interaction with Bath & North East Somerset Council in relation to the Clean Air Zone to be launched in the City of Bath
- Continuing to push for funding for local community projects and increasing Air Quality Monitoring with low cost sensors via the CIL and s.106 funding streams.
- Air Quality Action Plan review is underway
- Continued engagement with the Area Boards to raise the profile of Air Quality in Wiltshire during 2020 and 2021.

EV Uptake - Prior to the incorporation of requirements for developments to be designed such that they are capable of plug-in and other ultra-low emission vehicles Public Protection have been asking developers to incorporate such infrastructure wherever possible.

This has resulted in a range of developments incorporating EV charging which includes:

- 58 charging points at the former Westbury Hospital Development
- 32 residential EV charge points installed at Damask Way, Westbury Development

With the advent of National Planning Policy Framework (NPPF) requirements this will be more commonplace and a feature of all Air Quality consultation on development with associated conditions and we are committed to continue to ensure this happens.

Continued development of ULEV infrastructure requirements for Development Control work - The latest version of the NPPF specifically identifies ultra-low emission vehicles and the need for the setting of local parking standards. This is something that has already been seen in other areas of the country and would strengthen the environmental outcomes for development control work where adopted at Wiltshire Council.

Clean Air Zones (CAZ) - BATHNES continue to develop a CAZ for the City; following concerns from a Community AQ group, we are consulting so that potential local effects are better understood where traffic is discouraged from existing routes into and around Bath and potentially additional monitoring undertaken by BATHNES in the Wiltshire Area. We are in contact with two authorities named in the Governments consultation regarding their experience with declaration of a CAZ following a request from one of our Community AQ groups.

CIL & s.106 Streams – Section 106 receipts continue to be generated and AQ groups are consulted on use of money. Westbury group have recently purchased a low-cost sensor and other groups are considering a similar action which will ultimately extend our coverage and evidence base.

AQ SPD Refresh - The Wiltshire Council AQ SPD is being refreshed so that it reflects the changing needs and aspirations of Wiltshire Council with more emphasis on ULEV infrastructure and the need for all development to contribute towards reducing emissions across Wiltshire; not just in AQMA declared towns. It is anticipated this will be completed in 2020/2021.

AQAP Refresh

A review of the Wiltshire Air Quality Action Plan (AQAP) identified within this document as a core action will result in a future AQAP having measures that are based on the principles of emissions source apportionment and high-resolution modelling. We are currently working with our key partners to determine the nature of future air quality measures, and we expect the AQAP to link and feed into strategic and local planning policy to ensure that there is a wider focus on achieving compliance with national objectives within each of our AQMAs. This will also include a greater focus on practical measures from developers and funding for ongoing measures that will make tangible contributions towards meeting air quality objectives. In recent months, the impact of

Covid19 on air quality in each AQMA has been significant and our intention is to capitalise on transport related social distancing measures and ensure that where these schemes occur within our AQMAs they form part of the future AQAP.

Neighbourhood Plans - Where towns and village area are producing their own neighbourhood plans, Public Protection continue to request ULEV and opportunities to reduce vehicle emissions to be included wherever possible within the text. The principal challenges and barriers to implementation that Wiltshire Council anticipates facing are

- Lack of policy or government standards requiring provision of EV infrastructure.
- Funding and agreeing inter authority evaluation/monitoring (in respect of CAZ development).

Additionally, the council see value in carrying out modelling. However, we are excluded from bidding for DEFRA funding under current DEFRA priorities. We would welcome the ability to bid for DEFRA funding being restored. LTP4 is currently being prepared and this represents an opportune time to conduct such modelling.

Whilst the measures stated above and in Table 2.2 will help to contribute towards compliance, Wiltshire Council anticipates that further additional measures not yet prescribed will be required in subsequent years to achieve compliance and enable the revocation of AQMA's in the County.

Table 2.2 – Progress on Measures to Improve Air Quality

Measure No.	Measure (in rank order as per instructions on s/s)	EU Category	EU Classification	Date Measure Introduced	Organisations involved	Funding Source	Key Performance Indicator	Reduction in Pollutant / Emission from Measure	Progress to Date	Estimated / Actual Completion Date	Comments / Barriers to implementation
WAQS1	Set up links with other LAs within the southwest.	Policy Guidance and Development Control	Other policy	Ongoing	BGSW group of Authorities	n/a	Group meetings/contact	n/a	BATHNES CAZ discussions may result in CAZ related monitoring in WC area	Ongoing	We are in contact with two authorities named in the Governments consultation regarding experience of declaration of a CAZ following requests from a Community AQ group
WAQS5	Investigate the feasibility of innovative solutions for school travel plans	Alternatives to private vehicle use	Other	Ongoing	Wiltshire Council	Highway Services	Home Run App metrics show up to 14% of school run cars kept off the road at some schools in scheme.	0.2 µg/m ³	Ongoing uptake of Home Run	Ongoing	Barriers- Willingness of schools to actively promote; they see it as "another thing on their list" Positives - useful data, and another tool we can offer schools to reduce cars on the school run.
CI01	Establish community AQAP groups under the Area Board	Promoting Travel Alternatives	Other	Ongoing	Wiltshire Council	Mix of CIL, s.106 and precept etc..	Establishment of groups	n/a	Variable ongoing activity across 6 groups	Ongoing	Several Groups are active some will need to be revisited
CI02	Area Boards to report to Public Protection Service annually on progress made with community action plans and priority actions	Public Information	via the Internet	Ongoing	Wiltshire Council	Area Board Budgets	Delivery of annual report	n/a	Ongoing	Ongoing	Westbury likely to re-establish AQ Group
CI03	Provide AQ data and information to Area Boards to assist with the production of community actions & plans.	Public Information	via the Internet	Ongoing	Wiltshire Council	n/a	provision of data annually	n/a	Ongoing	Ongoing	Public Access to Wiltshire Air Quality Data
CI04	Support Wiltshire Forum Community Area Partnerships in enabling the dissemination of good practice AQ projects	Public Information	via other mechanisms	Ongoing	Wiltshire Council	Area Boards	Annual meeting	n/a	On hold	Post AQAP refresh 2021	Review of AQAP will trigger revitalisation.
T01	Support the implementation of LTP3 & LTP4 and supporting strategies to secure improvements in AQ	Transport Planning and Infrastructure	Other	Ongoing	Wiltshire Council	Transport Planners/s. 106	See Wiltshire LTP3	n/a	Ongoing	2022	AQ modelling work with Transportation Planners to fit modelling to AQAP objectives

DSP01	Integrate AQ into wider policies and strategies within the council and the adoption of Core policy 55 on AQ in the Wiltshire Core Strategy	Policy Guidance and Development Control	Air Quality Planning and Policy Guidance	2015	Wiltshire Council	n/a	adoption	n/a	Ongoing	2021	Engagement with Spatial Planning re. updating CP55 to better reflect AQ Strategy
DSP02	Adoption of the Draft Supplementary Planning Guidance on Air Quality	Policy Guidance and Development Control	Air Quality Planning and Policy Guidance	2016	Wiltshire Council	n/a	adoption	n/a	Ongoing	2021	Updating SPD in tandem with AQAP review
DSP03	Integrate Green infrastructure considerations into Council Policy / Strategy and adopt the Green Infrastructure strategy to support core policy 52 of the Wiltshire Core Strategy	Policy Guidance and Development Control	Air Quality Planning and Policy Guidance	2018	Wiltshire Council	n/a	adoption	n/a	Subject to core policy update	2021	Green infrastructure strategy will be developed following competition and adoption of the draft open space strategy as SPD.
DSP05	Provision of funding for AQAP and related matters through s.106 agreements with developers and the CIL	Transport Planning and Infrastructure	Other	Ongoing	Wiltshire Council	s.106/CIL	Funding achieved	tbc from projects	Ongoing	Ongoing	Regulation 123 List Oct 2016. Wiltshire CIL
PH01	PH Wiltshire Standalone AQ website with access to real-time AQ data & Know and Respond service	Public Information	via the Internet	2015	Wiltshire Council	PH funded	Provision of service	n/a	Ongoing	Ongoing	Wiltshire Air Quality website incorporating real time data and Know and Respond service
PH02	Public Protection will contribute to the JSNA and State of Environment Reports on AQ within the County	Policy Guidance and Development Control	Other policy	2015	Wiltshire Council	n/a	Inclusion of Air Quality	n/a	Ongoing	Ongoing	None.
S01	Identify through partnership working with Highways England specific measures to reduce NO ₂ on Wilton Road	Traffic Management	Other	2018	Salisbury AQ group and Highways England supported by	Highways / Highways England	Reduction of annual mean to below objective	tbc	consultation	Ongoing	Currently integral to AQAP review

	(A36 Trunk road) Salisbury				Wiltshire Council							
S02	Implementation of Salisbury Transport Strategy (STS) measures that offer opportunity to improve local air quality.	Traffic Management	Other	2019	Wiltshire Council	Wiltshire Council	See strategy	tbc	Ongoing	Ongoing	None	
S03	Salisbury AQAP developed, group working on funding for measures	Transport Planning and Infrastructure	Other	2018	Wiltshire Council	Wiltshire Council	Adoption of plan	n/a	Ongoing	Ongoing	Area Board annual report 2016	
M01	Marlborough AQ working group to produce a community AQAP	Transport Planning and Infrastructure	Other	2018	Wiltshire Council	Wiltshire Council	Adoption of plan	n/a	Ongoing	2021	Area Board Activity Stalled due to COVID 19	
D01	Devizes AQ working group to produce a community AQAP	Transport Planning and Infrastructure	Other	2019	Wiltshire Council	Wiltshire Council	Adoption of plan	n/a	Ongoing	2021	Area Board Activity Stalled due to COVID 19	
D02	Implementation of the Devizes Transport Strategy measures that provide the opportunity to improve air quality within the town	Traffic Management	Strategic highway improvements, Re-prioritising road space away from cars, inc Access management, Selective vehicle priority, bus priority, high vehicle occupancy lane	2016	Wiltshire Council	Wiltshire Council	Annual Average NO ₂	Unknown	GTMA	Ongoing	The continued implementation of the Devizes Transport Strategy will address key pollution hotspots in the town.	
D03	Implement identified key junction improvements identified within the Devizes Transport strategy. The junction of A361 and London Road is being brought forward whilst land is being assembled to deliver the Shanes Castle junction	Traffic Management	Other	2017	Wiltshire Council	Wiltshire Council	Annual Average NO ₂	Unknown	Effects being monitored	2019	Community action plan, Devizes transport Strategy - Windsor Drive junction improvements now complete	

	improvement. Several new cycle facilities built including towpath improvements through the town and a contra flow cycle lane.										
C01	Calne AQ working group to produce a Community AQAP	Transport Planning and Infrastructure	Other	2018	Wiltshire Council	Wiltshire Council	Annual Average NO ₂	n/a	TBC	2021	AQ Group Activity Stalled due to COVID 19
5	Connecting Wiltshire	Promoting Travel Alternatives	Personalised Travel Planning	2018	Wiltshire Council	Unknown	Take up of alternative to Travel Plans	unknown	Ongoing	Ongoing	Connecting Wiltshire
6	Retro-fitting of bus emission control	Vehicle Fleet Efficiency	Vehicle Retrofitting programmes	2019	Wiltshire Council	Grant aided / Bus Co.	Implementation of project	tbc	New buses to be introduced in 2020	Ongoing	Funding for buses secured and buses ordered.
11	Community Tree planting project in areas poor AQ in Salisbury	Transport Planning and Infrastructure	Other	2016	Wiltshire Council/ Salisbury Area Group	Wiltshire Council	Tree planting	unknown	Ongoing	Ongoing	
DC 01	Provision of EV infrastructure to 52 house development in Calloway Gardens, Westbury	Promoting Low Emission Transport	Other	TBC	Private developer	Developer	Provision of standard charge EV points	unknown	Works in progress	2021	Lack of policy or government standards requiring provision of EV infrastructure
DC02	Provision of EV infrastructure to drive thru Costa	Promoting Low Emission Transport	Other	TBC	Private developer	Developer	Provision of rapid charge EV points	n/a	Planning permission granted	TBC	Lack of policy or government standards requiring provision of EV infrastructure
DC03	Provision of HGV spur road avoiding AQMA (Hills Waste, Calne)	Freight and Delivery Management	Other	Feb-19	Private developer	Hills Waste	Provision of spur road and HGV routing away from AQMA	Rerouting of HGVs away from AQMA	Assessment pending	2021	Transport data required from Planning to confirm rerouting and percentage reduction in traffic
DC06	Provision of EV infrastructure at Hilberton Development	Promoting Low Emission Transport	Other	2018	Private developer	Developer	Provision of standard charge EV points	unknown	Planning permission granted	TBC	Lack of policy or government standards requiring provision of EV infrastructure
DC07	s.106 monies for LAQM monitoring (£10000)	Other	Other	2018	Private developer	s.106	Implementation of project	n/a	Equipment sources being assessed	Ongoing	Confidence in low cost monitors when compared against reference equipment.
ST01	Working with BATHNES on development of CAZ	Transport Planning and Infrastructure	Other	2019	BATHNES & Wiltshire Council	DEFRA	Development of CAZ + Monitoring and evaluation	TBC	BATHNES CAZ works commenced	2021	Funding and agreeing inter authority evaluation/monitoring
C02	Calne AQ Group - EV provision at Town Council	Other	Other	n/a	Calne AQ Group/Town Council	Wiltshire Council	Modal change	unknown	Stalled	Unlikely	Not supported Council Fleet services

D04	Devizes AQ Group - Tree Planting	Other	Other		Area Board & s.106	Devizes AQ group	Tree Planting	unknown	Pending	ongoing	None
HE1	Highways England Designated Fund Project ideas - Salisbury x6 (see also S01)	Traffic Management	Strategic highway improvements, Re-prioritising road space away from cars, including access management, Selective vehicle priority, high vehicle occupancy lane	2019	Highways England	Highways England	Initiation of Projects	unknown	Ongoing	Ongoing	none
S04	Salisbury AQ Group - Develop Green Infrastructure Strategy	Policy Guidance and Development Control	Air Quality Planning and Policy Guidance	2019	Spatial Planning & AQ Group	TBC	Policy change	n/a	Ongoing	Ongoing	Completion of Core Strategy review determines when Green Inf can be progressed
PP1	Diffusion tube review to include areas of deprivation within all Area Boards	Other	Other	2018	Wiltshire Council	Wiltshire Council	observed levels	n/a	Ongoing	2021 review	Periodic review and redeployment of limited tubes + no real time data.
ST02	Salisbury Transport Strategy & Highways England review	Promoting Low Emission Transport	Public Vehicle Procurement - Prioritising uptake of low emission vehicles	2016	Wiltshire Council	Wiltshire Council	LEV Uptake	unknown	Ongoing	Ongoing	None
PP2	58 residential EV charge points facilitated at former Westbury Hospital Development 15/11604/OUT	Promoting Low Emission Transport	Procuring alternative Refuelling infrastructure to promote Low Emission Vehicles, EV recharging, Gas fuel recharging	2020	Wiltshire Council	Developer	EV uptake	Unknown	Construction in progress	2021	Sensitivity of monitoring techniques insufficient to identify actual pollution reduction from measure
PP3	Oxford Road Calne £750 s.106 monies allocated e.g. Home Run	Promoting Travel Alternatives	Other	2016	Wiltshire Council	Developer	Scheme uptake	Unknown	To be allocated	2020	None
PP4	32 residential EV charge points facilitated at Damask Way, Warminster Development	Promoting Low Emission Transport	Procuring alternative Refuelling infrastructure to promote Low Emission Vehicles, EV recharging, Gas fuel recharging	2020	Wiltshire Council	Developer	EV uptake	Unknown	Construction in progress	2021	Sensitivity of monitoring techniques insufficient to identify actual pollution reduction form measure

PP5	16 residential EV charge points facilitated at Hilperton Development	Promoting Low Emission Transport	Procuring alternative Refuelling infrastructure to promote Low Emission Vehicles, EV recharging, Gas fuel recharging	2018	Wiltshire Council	Developer	EV uptake	Unknown	Awaiting confirmation	tbc	Sensitivity of monitoring techniques insufficient to identify actual pollution reduction from measure
PP6	Marden Farm Calne £339 s.106 monies requested e.g. Home Run	Promoting Travel Alternatives	Other	2019	Wiltshire Council	Developer	Home Run App metrics	Unknown	ongoing	tbc	none
PP7	Calne £10k s.106 monies available to draw on for AQMA monitoring e.g. transport survey/ low cost sensor	Other	Other	2019	Wiltshire Council	Developer	Roll out of s.106 AQ spend	Unknown	Funds now available for draw down	tbc	Vetting and availability of reliable techniques for supplementing LAQM work.
PH03	Know & Respond Text Alert details included in NHS leaflet from CCG	Public Information	Via leaflets	2016	Wiltshire Council	Wiltshire Council	Awareness levels	Unknown	Ongoing use	Ongoing	Doctors surgeries now have TV graphics regarding K&R
PP8	Advanced Thermal Treatment Facility, Westbury - EV opportunities	Promoting Low Emission Transport	Other	Planning application	Environment Agency & Wiltshire Council	Developer	Availability and uptake of EV charging/vehicles	Unknown	Planning and Permitting to be finalised	tbc	Further planning negotiations provide opportunity to formalise community EV charge area at ATT
FM1	Facilities Management lead project on corporate EV project for AQMA town.	Promoting Low Emission Transport	Procuring alternative Refuelling infrastructure to promote Low Emission Vehicles, EV recharging, Gas fuel recharging	2019	Facilities Management Wiltshire Council	Wiltshire Council & External funding bids	Provision and uptake of EV charging opportunities in public areas	Unknown	Discussion ongoing	tbc	Current lead on corporate EV being sought and update requested.
PP9	Anti-Idling Work	Promoting Travel Alternatives	Via the Internet	2019	Wiltshire Council Public Protection & Schools	n/a	Reduced/no idling outside designated areas	Unknown	Information uploaded to Healthy Schools web-based resources for schools and parents/children	Ongoing	Document updated and further information and signposting to be provided.
PP10	Electric Bus Roll Out	Promoting Low Emission Transport	Company Vehicle Procurement - Prioritising uptake of low emission vehicles	2019	Red Bus & Wiltshire Council	Red Bus Wiltshire	Objective compliance	Unknown	Buses in active use.	Completed/ Ongoing	x4 electric buses introduced and further developments encouraged.

PP11	Area Board-Meetings re. AQAP refresh	Public Information	Other	2019	PP & Area Boards	n/a	Rollout to Area Boards	Unknown	Chippenham Area Board December 2019	2021	Post COVID public meeting arrangements to be agreed with Area Boards
PP12	Zero Chippenham AQ & Zero Carbon group	Promoting Low Emission Transport	Other	2019	Zero Chippenham & Wiltshire Council	tbc	Meetings and resulting initiatives	Unknown	Meetings in 2019	ongoing	Groups current direction to be confirmed
PP13	AQAP Refresh	Other	Other	2020	Wiltshire Council, Highways England	n/a	AQAP measures will be both viable evidence based and link into other objectives inc s.106, CIL and a strategic planning document on AQ. Reduction of NO ₂ levels in AQMA to below that of national objectives.	Unknown	Project plan and meetings commenced. Source apportionment completed. Review of possible transport measures now on-going. Review of good practice; eg York, Lancaster.	2021	Resources to commit to project in addition to core work. Reliance on key partners for elements of project who may have different priorities.
PP14	Electric Taxi Pilot Salisbury	Promoting Low Emission Transport	Taxi emission incentives	2019	Wiltshire Council, Highways England	Highways England	Roll out of project	Unknown	Initial discussions	tbc	Highways England to confirm viability of pilot in Salisbury
PP15	LTP4 measures to reduce car access/usage	Traffic Management	Other	2019	Wiltshire Council	tbc	Restricting use/access of ICE vehicles	Unknown	Initial discussions	tbc	Restrictions on car usage and increased charging for parking to be explored
PP16	Bus Ant-Idling Measures	Vehicle Fleet Efficiency	Driver training and ECO driving aids	2019	Red Bus & Wiltshire Council	Red Bus Wiltshire	Use of anti-idling measures	Unknown	Confirmation of current arrangements. Further work needed.	tbc	Currently 4 mins auto cut off on most buses. Could this be reduced?
PP17	Westbury TC scoping study on Traffic Management	Traffic Management	Other	2019	Westbury TC & Wiltshire Council	Westbury TC	Undertaking scoping study	Unknown	Undertaking scoping	tbc	Subject to cost being less than £1000 with consultants
PP18	Salisbury Central Area Framework (CAF) - Future Salisbury	Public Information	Via the Internet	2019	Wiltshire Council	Wiltshire Council	CAF publication	Unknown	Consultation done	Completed/Ongoing	PP input to matters of importance in CAF e.g. noise, AQ
PP19	Portable AQ Monitor Salisbury Town Council	Public Information	Via the Internet	2019	Wiltshire Council & Salisbury Town Council	Salisbury Town Council	Purchase and deployment of equipment to add to evidence base for Salisbury	Unknown	Initial contact from Salisbury TC	tbc	Scoping ongoing. Sensitivity of monitoring techniques insufficient to identify actual pollution reduction from measure
PP20	Calne AQ Group - AQ Monitor	Public Information	Via the Internet	2019	Calne TC & AQ Group + Wiltshire Council	s.106	Purchase and deployment of equipment to add to evidence base for Calne	Unknown	s.106 money identified.	2020	Scoping ongoing. Sensitivity of monitoring techniques insufficient to identify actual pollution reduction from measure
PP21	Bradford On Avon One Way System - Scoping	Traffic Management	Strategic highway improvements, Re-prioritising road space	2019	Bradford on Avon Town Council / Councillors/	tbc	AQ outcome of One-Way system considered	Unknown	expressions of interest	tbc	Covid 19 distancing works likely to impact on this proposal.

			away from cars, including access management, selective vehicle priority, bus priority, high vehicle occupancy lane		Wiltshire Council						
PP22	Devizes Canal Towpath Cycle route	Alternatives to private vehicle use	Other	2019	Devizes AQ Group & Wiltshire Council	CRT	Provision of cycle way along canal towpath	Unknown	Works in progress	tbc	Works ongoing

2.3 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.

Wiltshire Council is taking the following measures to address PM_{2.5}:

Only one of the 8 Wiltshire AQMAs has been declared with reference to an exceedance of the annual mean objective for PM₁₀ and the process to revoke this is underway. Wiltshire Council is currently working to reduce levels of PM_{2.5} through its action plan which embraces many of the measures detailed in Annex A of Technical Guidance LAQM.TG16. The local community working groups will be looking at the measures outlined in Annex A as part of the development of their action plans

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

3.1 Summary of Monitoring Undertaken

3.1.1 Automatic Monitoring Sites

This section sets out what monitoring has taken place and how it compares with objectives.

Wiltshire Council undertook automatic (continuous) monitoring using reference method equipment at 4 sites during 2019. Table A.1 in Appendix A shows the details of the sites. In addition, Wiltshire Council monitored for PM₁₀ using a non-reference, indicative method in Marlborough during 2019. Results from this monitoring are also available on the Wiltshire Council Air Quality website

(<http://www.wiltshireairquality.org.uk/>).

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

Wiltshire Council undertook non- automatic (passive) monitoring of NO₂ at 72 sites during 2019. A total of 22 of these sites were new for 2019 following a major review of site locations to include a wider spread of the county and more areas of identified deprivation within all of the Wiltshire Area Boards. Table A.2 in Appendix A shows the details of the sites.

Maps showing the location of the monitoring sites are provided on the Wiltshire Council Air Quality website using the following link:

<http://www.wiltshireairquality.org.uk/data/non-auto-data?type=active>

Further details on Quality Assurance/Quality Control (QA/QC) for the diffusion tubes, including bias adjustments and any other adjustments applied (e.g. “annualisation” and/or distance correction), are included in Appendix C.

3.2 Individual Pollutants

The air quality monitoring results presented in this section are, where relevant, adjusted for bias⁴, “annualisation” (where the data capture falls below 75%), and distance correction⁵. Further details on adjustments are provided in Appendix C.

Trend graphs for monitoring sites within the Wiltshire towns subject to an AQMA are presented in Appendix A. The graphs include the objective and trend lines.

Levels for 2019 show a clear downward trend at all sites in all towns; of the 51 passive monitoring sites retained by Wiltshire Council from 2018, only 1 showed a higher result in 2019 and this was an increase of 1µg/m³ at a background site which indicates 2019 was a very good year for air quality across the county of Wiltshire.

3.2.1 Nitrogen Dioxide (NO₂)

Real Time Monitoring

Table A.3 in Appendix A compares the ratified and adjusted monitored NO₂ annual mean concentrations for the past 5 years with the air quality objective of 40µg/m³. Note that the concentration data presented in Table A.3 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).

All 4 real time monitoring sites reported an annual mean level below the objective; 30µg/m³ in Salisbury (down from 35 µg/m³ in 2018), 31µg/m³ in Bradford on Avon (the same as 2018), 37µg/m³ in Devizes, (down from 41µg/m³ in 2018) and 30µg/m³ in Royal Wootton Bassett (no change from 2018).

Passive Monitoring

For diffusion tubes, the full 2019 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.4 in Appendix A compares the ratified continuous monitored NO₂ hourly mean concentrations for the past 5 years with the air quality objective of 200µg/m³, not to be exceeded more than 18 times per year.

⁴ <https://laqm.defra.gov.uk/bias-adjustment-factors/bias-adjustment.html>

⁵ Fall-off with distance correction criteria is provided in paragraph 7.77, LAQM.TG(16)

In 2019 a total of 8 diffusion tube monitoring sites report an exceedence of the annual mean objective at the façade of the nearest exposure. This is following the correction procedure specified in Paragraphs 7.77-7.79 of TG16 in order to estimate the concentration at the nearest receptor.

This is a decrease on the 17 sites reported in the 2018 ASR from 2017 monitoring.

All sites reporting an exceedence were inside declared AQMA's.

One site (DT33) reported an (annualised) annual mean greater than $60\mu\text{g}/\text{m}^3$, the point at which an exceedence of the 1-hour mean objective is indicated. However, when distance corrected to the nearest receptor this fell to $55\mu\text{g}/\text{m}^3$.

All but 2 of the 50 sites employed in both 2019 and 2018 recorded a reduction in the annual mean level recorded in 2019 compared to 2018.

3.2.2 Particulate Matter (PM₁₀)

Table A.5 in Appendix A compares the ratified and adjusted monitored PM₁₀ annual mean concentrations for the past 5 years with the air quality objective of $40\mu\text{g}/\text{m}^3$.

Table A.6 in Appendix A compares the ratified continuous monitored PM₁₀ daily mean concentrations for the past 5 years with the air quality objective of $50\mu\text{g}/\text{m}^3$, not to be exceeded more than 35 times per year.

No exceedences of the annual mean objective of $40\mu\text{g}/\text{m}^3$ were recorded at our 3 sites equipped to monitor for PM₁₀ using a reference method.

In respect of the 24hr objective of $50\mu\text{g}/\text{m}^3$ we recorded a total of 5 exceedences at the Salisbury monitor, 5 at the Bradford on Avon site and 8 at our Devizes monitor. This meets with the air quality objective which states that the $50\mu\text{g}/\text{m}^3$ level is not to be exceeded more than 35 times a year at any site.

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?	Monitoring Technique	Distance to Relevant Exposure (m) ⁽¹⁾	Distance to kerb of nearest road (m) ⁽²⁾	Inlet Height (m)
AM1	Exeter St Salisbury	Roadside	414547	129575	NO ₂ ; PM ₁₀	Y	Chemiluminescent; TEOM	8	2.5	2
AM2	Masons Lane, Bradford On Avon	Roadside	382533	161115	NO ₂ ; PM ₁₀	Y	Chemiluminescent; Beta attenuation	15	1.6	2
AM3	Sidmouth St Devizes	Roadside	400765	161458	NO ₂ ; PM ₁₀	Y	Chemiluminescent; TEOM	4	2.5	2
AM4	High Street, Royal Wootton Bassett	Roadside	406888	182711	NO ₂	N	Chemiluminescent	10	1.8	3

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

Site ID	Site Name	Site Type	X OS Grid Ref (Easting)	Y OS Grid Ref (Northing)	Pollutants Monitored	In AQMA?	Distance to Relevant Exposure (m) ⁽¹⁾	Distance to kerb of nearest road (m) ⁽²⁾	Tube collocated with a Continuous Analyser?	Height (m)
DT1	West View Crescent, Devizes	Urban Background	400000	161109	NO ₂	No	5	3	NO	2.5
DT2	The Nursery, Devizes	Roadside	399924	161729	NO ₂	Yes (Devizes)	1.5	2	NO	2.75
DT3	Shanes Castle, Devizes	Kerbside	399763	161717	NO ₂	Yes (Devizes)	0	1.1	NO	2
DT4	Opp Wadsworth, Northgate St, Devizes	Roadside	400210	161623	NO ₂	Yes (Devizes)	0	1.7	NO	2.5
DT5	Windsor Dr, Devizes	Roadside	401788	162402	NO ₂	No	10	1.5	NO	2.5
DT6	Southgate, Devizes	Roadside	400635	160982	NO ₂	Yes (Devizes)	0	1.8	NO	2.75
DT7	St James Place, Devizes	Roadside	400807	161389	NO ₂	Yes (Devizes)	0	2.3	NO	2.6
DT8	Pewsey Library	Urban Background	416230	160122	NO ₂	No	20	50	NO	2
DT9	Ashton Rd Trowbridge	Roadside	418723	169048	NO ₂	No	0	5	NO	2.5
DT10	Herd St, Marlborough	Roadside	418942	169384	NO ₂	Yes (Marlborough)	0	1.8	NO	2
DT11	Baylie Acre, Marlborough	Suburban	418944	169702	NO ₂	Yes (Marlborough)	20	30	NO	2.5
DT12	Barn St, Marlborough	Roadside	418053	169224	NO ₂	Yes (Marlborough)	1	1.6	NO	2.2

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DT13	Salisbury Rd, Marlborough	Roadside	419296	168760	NO ₂	Yes (Marlborough)	2.5	1.8	NO	2.4
DT14	Town Mill, Marlborough	Urban Background	419011	169012	NO ₂	Yes (Marlborough)	0	1.5	NO	2.5
DT15	London Rd, Marlborough	Roadside	419152	169083	NO ₂	Yes (Marlborough)	2.5	1.5	NO	2.25
DT16	Jones Lane, Tidworth	Roadside	423535	149822	NO ₂	No	2	2	NO	2.5
DT17	Short Street, Ludgershall	Roadside	426941	150795	NO ₂	No	5	2	NO	2.75
DT18	Horsebrook, Calne	Urban Background	400126	170745	NO ₂	No	10	2	NO	2.5
DT19	New Road, Calne (King George)	Roadside	399873	170737	NO ₂	Yes (Calne)	0	2	NO	2.5
DT20	London Road, Calne	Roadside	399988	170587	NO ₂	Yes (Calne)	1.5	2.1	NO	2.5
DT21	Curzon St, Calne	Roadside	399657	171164	NO ₂	Yes (Calne)	0.5	1.8	NO	2.5
DT22	Chippenham, Oaklands	Roadside	391647	174766	NO ₂	No	15	2	NO	2.2
DT23	Chippenham, Westcroft	Roadside	390446	172480	NO ₂	No	7	2	NO	2.2
DT24	Bourne House, Bath Rd, Chippenham	Roadside	391712	173286	NO ₂	No	0	8.9	NO	2.25
DT25	Chippenham Allington Way	Roadside	390454	174047	NO ₂	No	13	2	NO	2.2
DT26	Rowde Mead Chippenham	Urban Background	392468	172054	NO ₂	No	4	1.5	NO	2.2
DT27	Station Hill, Chippenham	Roadside	391925	173579	NO ₂	No	17.5	2	NO	2.2
DT28	Haynes Rd, Westbury	Roadside	387240	151163	NO ₂	Yes (Westbury)	0	1.3	NO	2.1
DT29	Warminster Rd, Westbury	Roadside	387166	150899	NO ₂	Yes (Westbury)	0	1.7	NO	2.5

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DT30	West End, Westbury	Roadside	387269	151507	NO ₂	No	1	1.5	NO	2.5
DT31	Oldfield Rd, Westbury	Roadside	386491	151580	NO ₂	No	0	5	NO	2
DT32	Leighton Pk, Westbury	Suburban	386739	150091	NO ₂	No	8	2	NO	2.5
DT33	Masons Lane, Bradford On Avon	Roadside	382716	161228	NO ₂	Yes (BOA)	1	1.35	NO	2.5
DT34	Co-location Masons lane BOA	Roadside	382538	161122	NO ₂	Yes (BOA)	15	1.6	YES	1.8
DT35	Co-location Masons Lane BOA	Roadside	382538	161122	NO ₂	Yes (BOA)	15	1.6	YES	1.8
DT36	Co-location Masons Lane BOA	Roadside	382538	161122	NO ₂	Yes (BOA)	15	1.6	YES	1.8
DT37	Market St, Bradford On Avon	Kerbside	382544	161085	NO ₂	Yes (BOA)	0	0.95	NO	2.4
DT38	Meadowfield Bradford (bg)	Urban Background	381878	160836	NO ₂	No	8	2	NO	2.5
DT39	Malmesbury, Snell Ave	Roadside	393354	188636	NO ₂	No	5.3	2.45	NO	2.2
DT40	Malmesbury, Corn Gaston	Roadside	392312	187507	NO ₂	No	2.6	0.1	NO	2.2
DT41	Royal Wootton Bassett N	Roadside	406944	182792	NO ₂	No	0.45	2	NO	2.5
DT42	Melksham N	Roadside	390118	164878	NO ₂	No	0	4	NO	2
DT43	Melksham Weavers Croft	Roadside	390136	164277	NO ₂	No	5	1.5	NO	2.5
DT44	Melksham Market Place	Roadside	390471	163657	NO ₂	No	10	2	NO	2.6
DT45	Rosset Gdns, Trowbridge	Urban Background	384343	157806	NO ₂	No	5	1.5	NO	2.25

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DT46	Newtown, Trowbridge	Kerbside	385244	157541	NO ₂	No	0	2	NO	2.6
DT47	Woodcock Rd, Warminster	Roadside	388678	144847	NO ₂	No	25	2	NO	2.75
DT48	Haytesbury Church	Rural	392498	142599	NO ₂	No	15	2	NO	2.5
DT49	Wynsome, Southwick	Roadside	383812	155257	NO ₂	No	0	4	NO	1.8
DT50	Box High Street	Roadside	382595	168543	NO ₂	No	5	2.1	NO	2.2
DT51	Charles St, Corsham	Urban Background	386577	170652	NO ₂	No	3	4	NO	2
DT52	74 London Road, Salisbury	Roadside	415105	130641	NO ₂	Yes (Salisbury)	0	8.4	NO	2.2
DT53	2 Minster Street, Salisbury	Kerbside	414373	129979	NO ₂	Yes (Salisbury)	0	1.5	NO	3
DT54	16 Greyfriars Close, Salisbury	Roadside	414682	129425	NO ₂	Yes (Salisbury)	0	13	NO	2.35
DT55	Endless St	Roadside	414500	130105	NO ₂	Yes (Salisbury)	0	2.9	NO	2.6
DT56	16 Winchester Street, Salisbury	Roadside	414602	130054	NO ₂	Yes (Salisbury)	1	1.5	NO	2.75
DT57	11 Canadian Ave, Salisbury	Roadside	412872	130679	NO ₂	Yes (Salisbury)	0	7.35	NO	2.3
DT58	35 The Avenue, Wilton	Roadside	410231	130679	NO ₂	No	0	13	NO	2.35
DT59	123 South Western Road, Salisbury	Roadside	413828	130142	NO ₂	Yes (Salisbury)	0	1.5	NO	2.5
DT60	12 Kickdom Close, Amesbury	Roadside	416641	140766	NO ₂	No	0	1.2	NO	2.4
DT61	88 Park Street, Salisbury	Urban Background	414760	130567	NO ₂	Yes (Salisbury)	2	0.3	NO	2.7
DT62	Exeter Street - colocation, Salisbury	Roadside	414547	129575	NO ₂	Yes (Salisbury)	8	2.5	YES	2

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DT63	Exeter Street - colocation, Salisbury	Roadside	414547	129575	NO ₂	Yes (Salisbury)	8	2.5	YES	2
DT64	Exeter Street - colocation, Salisbury	Roadside	414547	129575	NO ₂	Yes (Salisbury)	8	2.5	YES	2
DT65	17 Wilton Road, Salisbury	Roadside	413690	130362	NO ₂	Yes (Wilton Road)	0	1.5	NO	2.7
DT66	31 Devizes Road, Salisbury	Roadside	413669	130503	NO ₂	No	0	0.5	NO	2.6
DT67	91 Exeter Street, Salisbury	Roadside	414550	129523	NO ₂	Yes (Salisbury)	2	0.4	NO	3
DT68	Catherine Street, Salisbury	Roadside	414551	129815	NO ₂	Yes (Salisbury)	0	1.05	NO	2.4
DT69	3 Wheelwright Mews, Downton	Roadside	417055	121502	NO ₂	No	0	1.2	NO	2.4
DT70	161 Castle St, Salisbury	Roadside	414312	130651	NO ₂	Yes (Salisbury)	0	1.75	NO	2.7
DT71	225 Wilton Rd, Salisbury	Roadside	412572	130673	NO ₂	Yes (Wilton Road)	0	1.8	NO	2.7
DT72	107 Wilton Rd, Salisbury	Roadside	413038	130526	NO ₂	Yes (Wilton Road)	0	2.6	NO	2
DT73	99 Devizes Rd, Salisbury	Roadside	413517	130698	NO ₂	No	0	4.7	NO	2.65
DT74	37 Castle Road, Salisbury	Roadside	414320	130879	NO ₂	Yes (Salisbury)	0	7.95	NO	2.5
DT75	12 West Street, Wilton	Roadside	409600	131236	NO ₂	No	0	1.9	NO	2.5
DT76	3 Church Road Laverstock	Roadside	415987	130940	NO ₂	No	0	2.65	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 NO₂ Monitoring Results

Site ID	X OS Grid Ref (Easting)	Y OS Grid Ref (Northing)	Site Type	Monitoring Type	Valid Data Capture for Monitoring Period (%) ⁽¹⁾	Valid Data Capture 2019 (%) ⁽²⁾	NO ₂ Annual Mean Concentration (µg/m ³) ^{(3) (4)}				
							2015	2016	2017	2018	2019
AM1	414547	129575	Roadside	Automatic		98.4	36	35	35	35	30
AM2	382533	161115	Roadside	Automatic		99.8	38	37	35	31	31
AM3	400765	161458	Roadside	Automatic		99.6	35	31	42	41	37
AM4	406888	182711	Roadside	Automatic		97.6	n/a	n/a	n/a	30	30
DT1	400000	161109	Urban Background	Diffusion Tube		100	n/a	n/a	n/a	n/a	9
DT2	399924	161729	Roadside	Diffusion Tube		100	43	44	39	42	38
DT3	399763	161717	Kerbside	Diffusion Tube		100	43	45	39	44	38
DT4	400210	161623	Roadside	Diffusion Tube		83	39	43	40	42	40
DT5	401788	162402	Roadside	Diffusion Tube	100	75	n/a	n/a	n/a	n/a	18
DT6	400635	160982	Roadside	Diffusion Tube		92	38	38	35	39	35
DT7	400807	161389	Roadside	Diffusion Tube		100	40	41	35	38	35
DT8	416230	160122	Urban Background	Diffusion Tube		100	n/a	n/a	n/a	n/a	8
DT9	418723	169048	Roadside	Diffusion Tube	100	50	n/a	n/a	n/a	n/a	28
DT10	418942	169384	Roadside	Diffusion Tube		92	53	52	45	50	47
DT11	418944	169702	Suburban	Diffusion Tube		100	n/a	n/a	n/a	n/a	13

DT12	418053	169224	Roadside	Diffusion Tube		100	45	43	35	42	37
DT13	419296	168760	Roadside	Diffusion Tube		100	43	43	35	37	31
DT14	419011	169012	Urban Background	Diffusion Tube		100	n/a	n/a	n/a	11	12
DT15	419152	169083	Roadside	Diffusion Tube		100	40	41	35	36	34
DT16	423535	149822	Roadside	Diffusion Tube		100	n/a	n/a	n/a	n/a	11
DT17	426941	150795	Roadside	Diffusion Tube		100	n/a	n/a	n/a	n/a	10
DT18	400126	170745	Urban Background	Diffusion Tube		92	n/a	n/a	n/a	10	9
DT19	399873	170737	Roadside	Diffusion Tube		100	52	55	48	55	49
DT20	399988	170587	Roadside	Diffusion Tube		100	35	34	28	33	28
DT21	399657	171164	Roadside	Diffusion Tube		100	42	48	36	42	24
DT22	391647	174766	Roadside	Diffusion Tube		100	n/a	n/a	n/a	n/a	13
DT23	390446	172480	Roadside	Diffusion Tube		100	n/a	n/a	n/a	n/a	15
DT24	391712	173286	Roadside	Diffusion Tube		83	n/a	32	27	31	27
DT25	390454	174047	Roadside	Diffusion Tube		83	n/a	n/a	n/a	n/a	13
DT26	392467	122055	Urban Background	Diffusion Tube		100	n/a	n/a	n/a	12	10
DT27	391925	173579	Roadside	Diffusion Tube		100	n/a	n/a	31	37	32
DT28	387240	151163	Roadside	Diffusion Tube		83	40	45	33	41	35
DT29	387166	150899	Roadside	Diffusion Tube		92	n/a	n/a	40	49	42

DT30	387269	151507	Roadside	Diffusion Tube		100	35	36	29	33	28
DT31	386491	151580	Roadside	Diffusion Tube		100	n/a	n/a	n/a	17	16
DT32	386739	150091	Suburban	Diffusion Tube		100	n/a	n/a	n/a	11	10
DT33	382716	161228	Roadside	Diffusion Tube		66	64	65	55	64	61
DT34	382538	161122	Roadside	Diffusion Tube		100	n/a	n/a	26	31	28
DT35	382538	161122	Roadside	Diffusion Tube		100	n/a	n/a	26	31	28
DT36	382538	161122	Roadside	Diffusion Tube		100	n/a	n/a	25	31	28
DT37	382544	161085	Kerbside	Diffusion Tube		100	50	48	42	51	44
DT38	381878	160836	Urban Background	Diffusion Tube		100	n/a	n/a	n/a	8	10
DT39	393354	188636	Roadside	Diffusion Tube		100	n/a	n/a	n/a	n/a	11
DT40	392312	187507	Roadside	Diffusion Tube		100	n/a	n/a	n/a	n/a	10
DT41	406944	182792	Roadside	Diffusion Tube		100	n/a	33	35	40	34
DT42	390118	164878	Roadside	Diffusion Tube		100	n/a	n/a	34	37	33
DT43	390136	164277	Roadside	Diffusion Tube		100	n/a	n/a	n/a	n/a	16
DT44	390471	163657	Roadside	Diffusion Tube	75	78	n/a	n/a	n/a	n/a	20
DT45	384343	157806	Urban Background	Diffusion Tube		100	n/a	n/a	n/a	11	10
DT46	385244	157541	Kerbside	Diffusion Tube		100	35	37	33	31	29
DT47	388678	144847	Roadside	Diffusion Tube		75	n/a	n/a	n/a	n/a	11

DT48	392498	142599	Rural	Diffusion Tube		100	n/a	n/a	n/a	n/a	9
DT49	383812	155257	Roadside	Diffusion Tube		100	n/a	n/a	n/a	22	17
DT50	382595	168543	Roadside	Diffusion Tube		92	n/a	n/a	n/a	n/a	16
DT51	386577	170652	Urban Background	Diffusion Tube		75	n/a	n/a	n/a	12	10
DT52	415105	130641	Roadside	Diffusion Tube		100	41	43	34	40	36
DT53	414373	129979	Kerbside	Diffusion Tube		83	40	41	35	43	37
DT54	414682	129425	Roadside	Diffusion Tube		100	n/a	n/a	n/a	n/a	15
DT55	414500	130105	Roadside	Diffusion Tube		100	35	34	31	41	34
DT56	414602	130054	Roadside	Diffusion Tube		100	32	33	29	34	30
DT57	412872	130679	Roadside	Diffusion Tube		100	n/a	n/a	n/a	n/a	14
DT58	410231	130679	Roadside	Diffusion Tube		100	n/a	n/a	n/a	n/a	12
DT59	413828	130142	Roadside	Diffusion Tube		92	46	47	41	51	44
DT60	416641	140766	Roadside	Diffusion Tube		100	n/a	n/a	n/a	n/a	11
DT61	414760	130567	Urban Background	Diffusion Tube		100	17	22	18	19	16
DT62	414547	129575	Roadside	Diffusion Tube		100	37	37	30	35	30
DT63	414547	129575	Roadside	Diffusion Tube		100	37	38	30	35	30
DT64	414547	129575	Roadside	Diffusion Tube		100	37	37	31	35	30
DT65	413690	130362	Roadside	Diffusion Tube		100	58	58	46	58	51

DT66	413669	130503	Roadside	Diffusion Tube		100	40	41	37	41	37
DT67	414550	129523	Roadside	Diffusion Tube		100	41	44	34	43	35
DT68	414551	129815	Roadside	Diffusion Tube		100	n/a	39	31	41	35
DT69	417055	121502	Roadside	Diffusion Tube		100	n/a	n/a	n/a	n/a	12
DT70	414312	130651	Roadside	Diffusion Tube		100	39	41	33	41	36
DT71	412572	130673	Roadside	Diffusion Tube		100	43	44	37	46	39
DT72	413038	130526	Roadside	Diffusion Tube		100	34	37	31	38	32
DT73	413517	130698	Roadside	Diffusion Tube		100	31	32	28	32	29
DT74	414320	130879	Roadside	Diffusion Tube		100	n/a	30	28	35	28
DT75	409600	131236	Roadside	Diffusion Tube		100	29	33	25	34	27
DT76	415987	130940	Roadside	Diffusion Tube		100	n/a	n/a	20	22	20

Diffusion tube data has been bias corrected

Annualisation has been conducted where data capture is <75%

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 adjustment

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**.

(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%).

(3) Means for diffusion tubes have been corrected for bias. All means have been “annualised” as per Boxes 7.9 and 7.10 in LAQM.TG16 if valid data capture for the full calendar year is less than 75%. See Appendix C for details.

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

Figure A.1 – Trends in Annual Mean NO₂ Concentrations

Figure A.1.1 Bradford on Avon

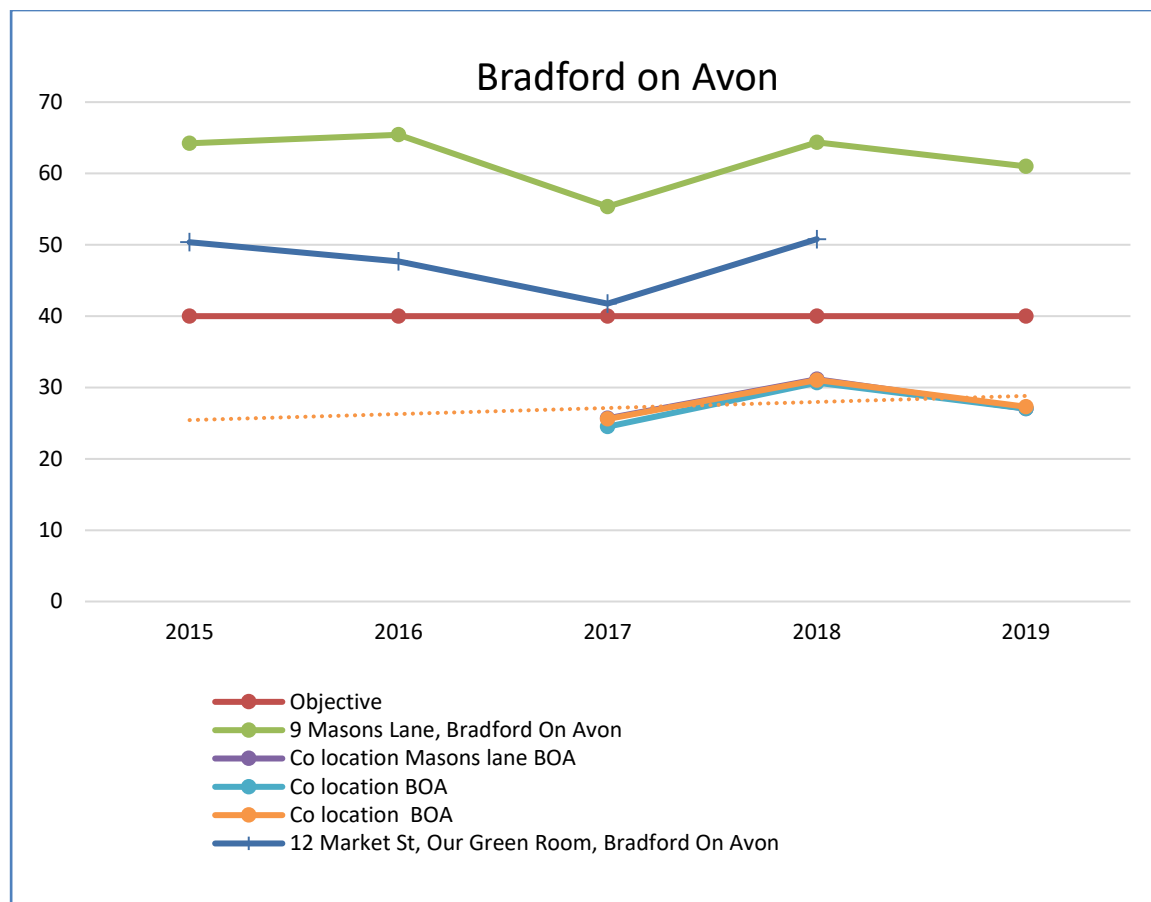


Figure A.1.2 – Calne

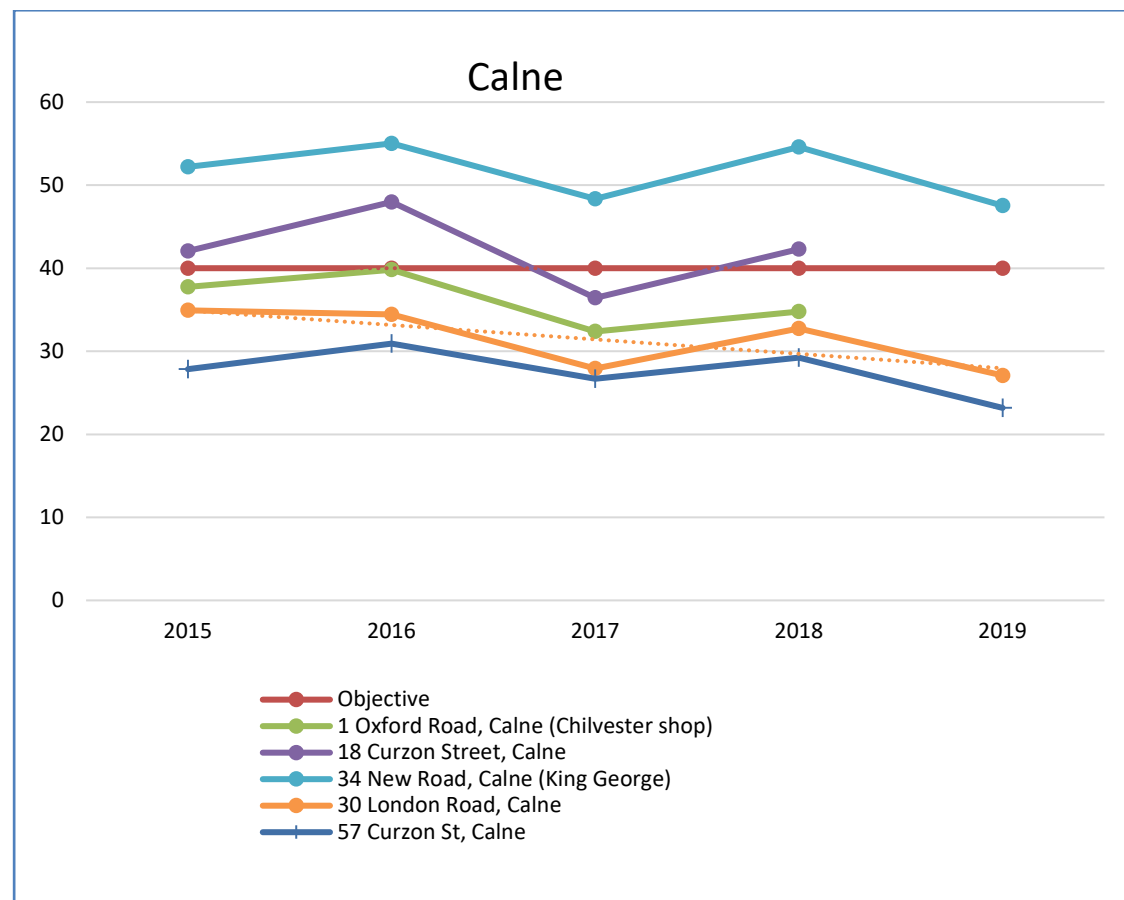


Figure A.1.3 – Devizes

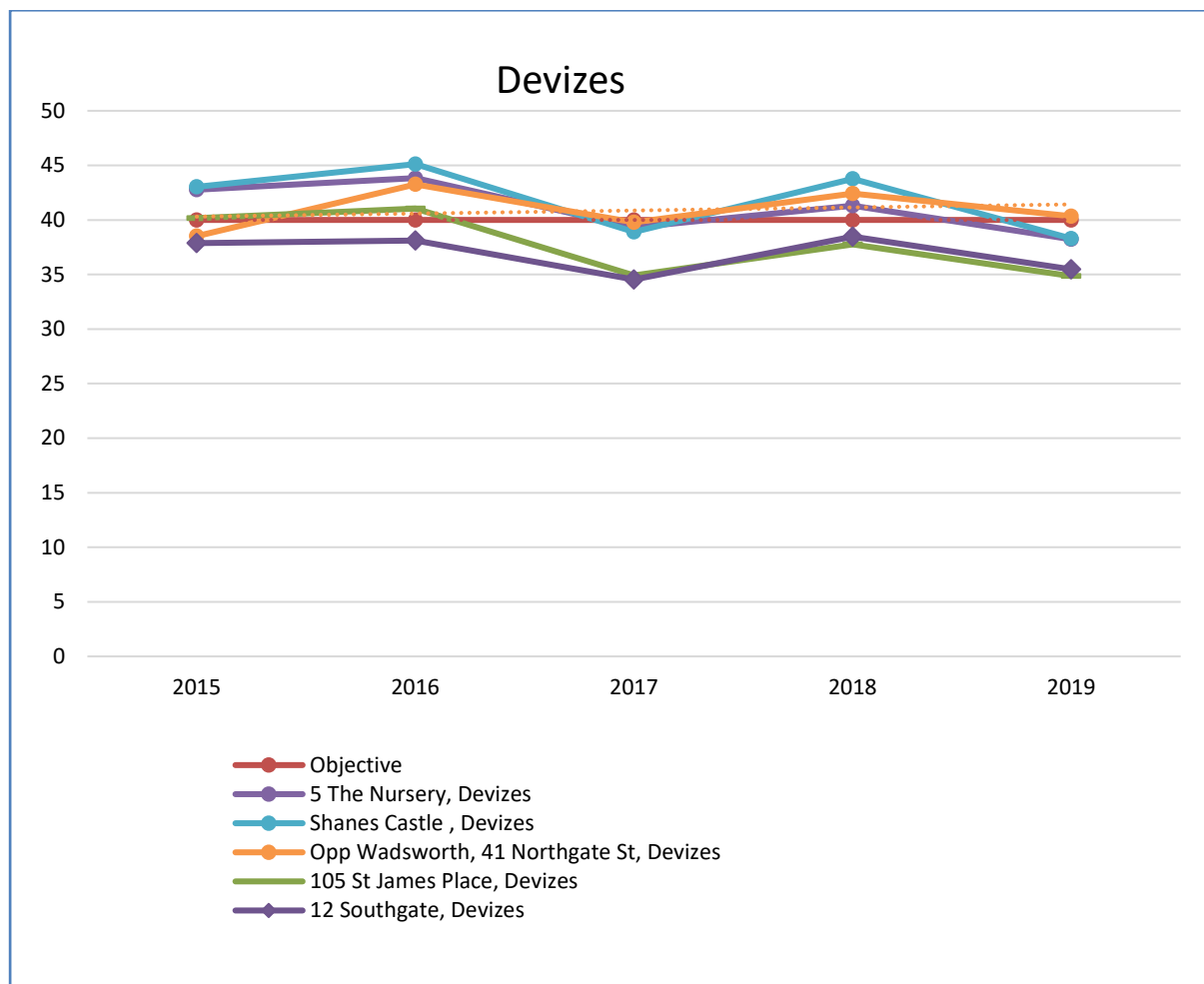


Figure A.1.4 – Marlborough

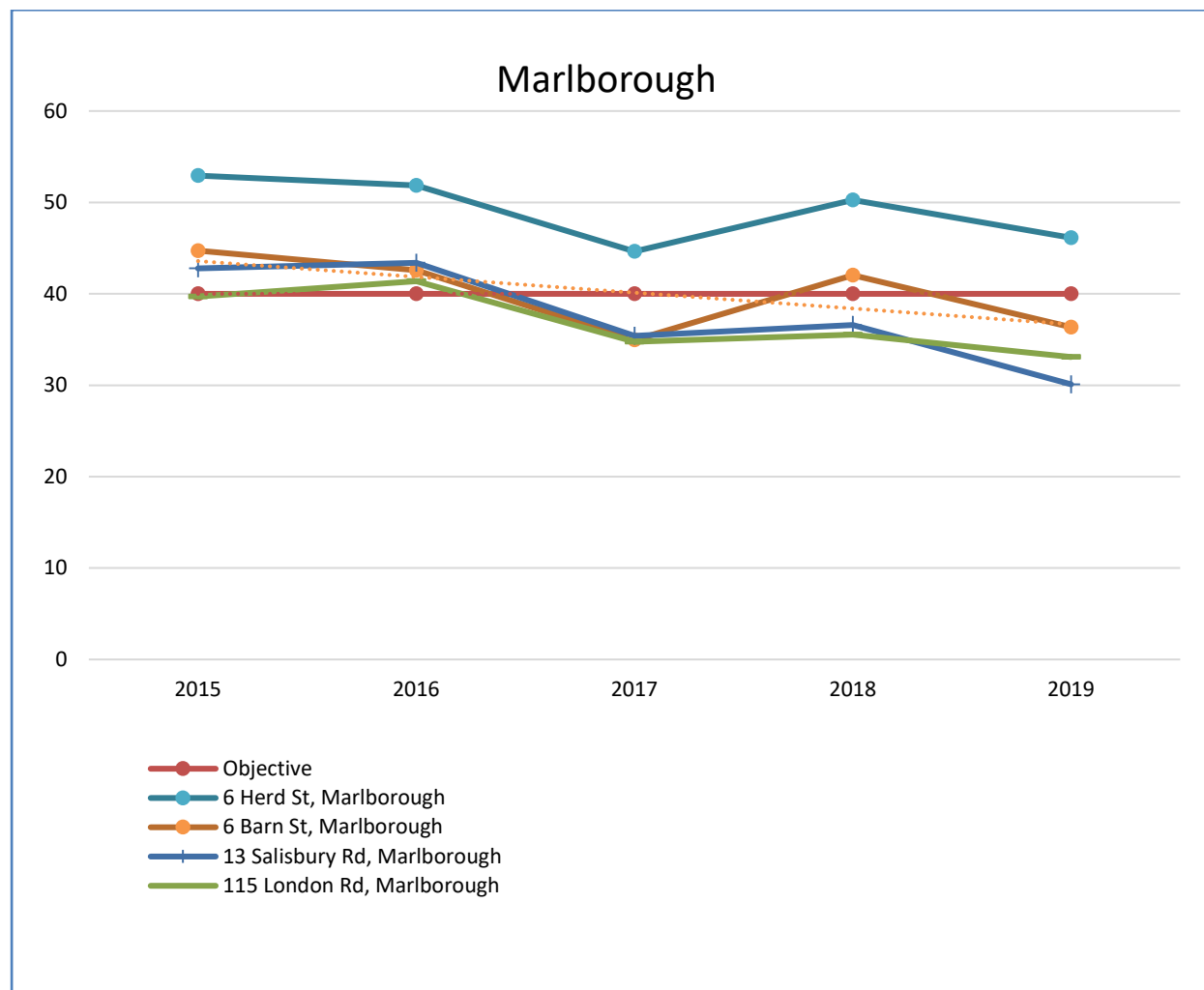


Figure A.1.5 – Salisbury selected

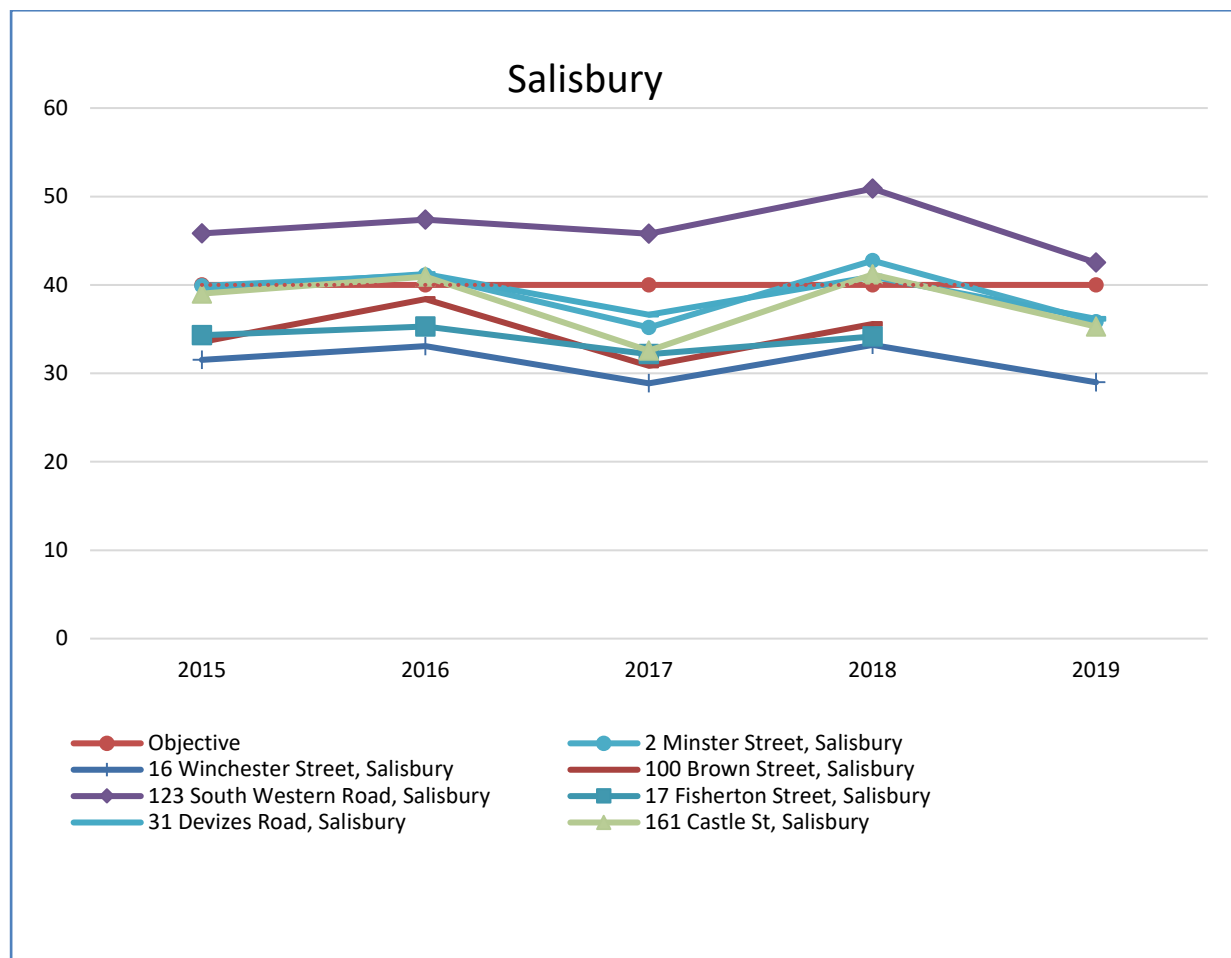


Figure A.1.6 – Salisbury selected 2

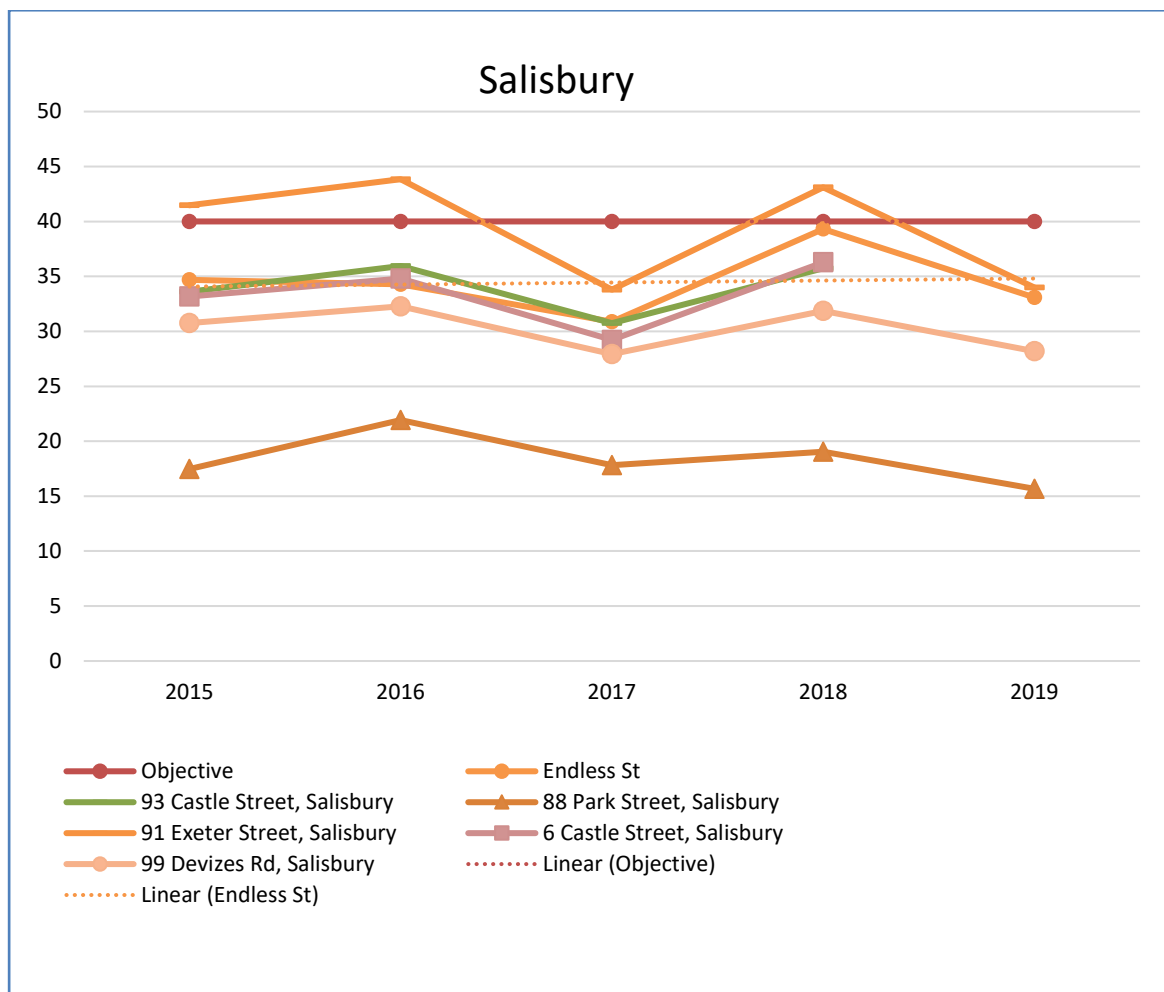


Figure A1.7 – Salisbury (Wilton Road) Sites

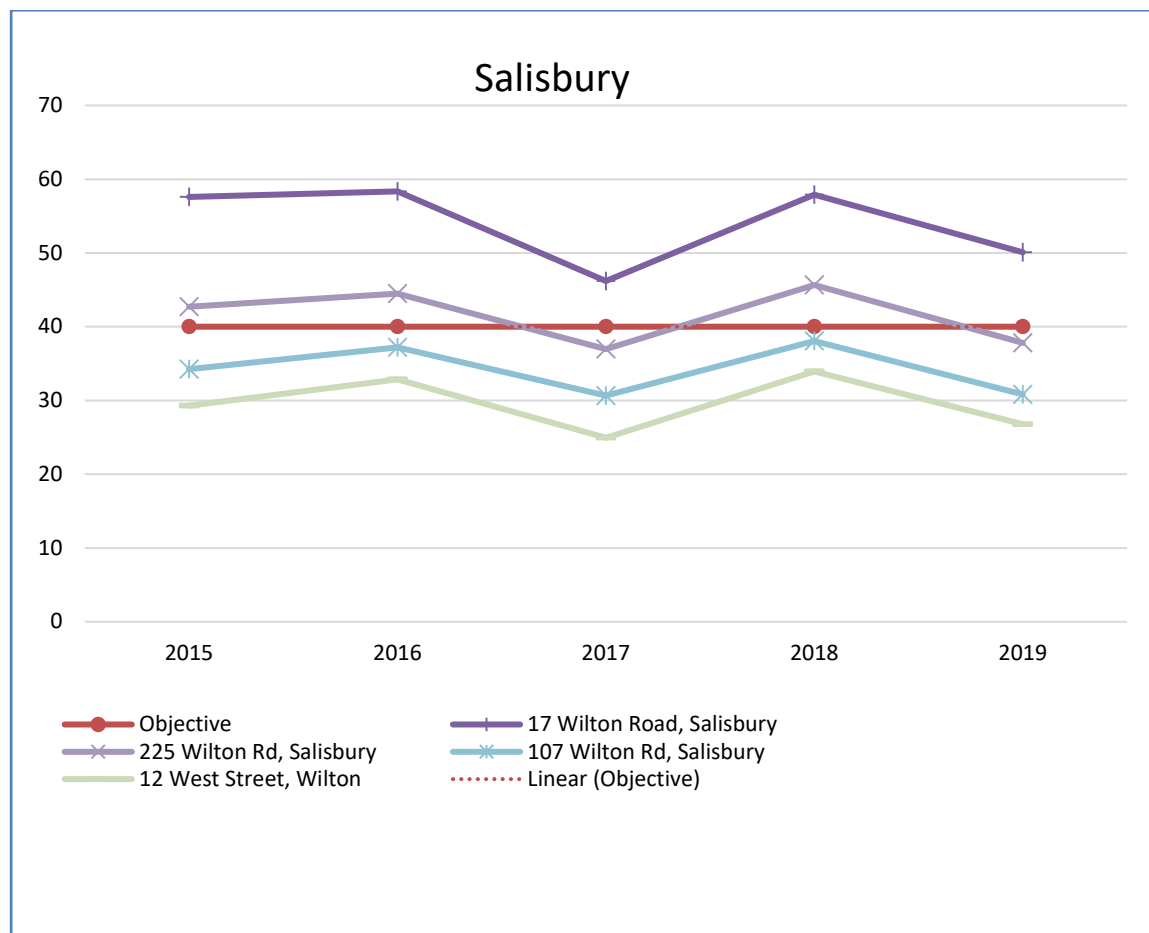


Figure A.1.8 – Westbury

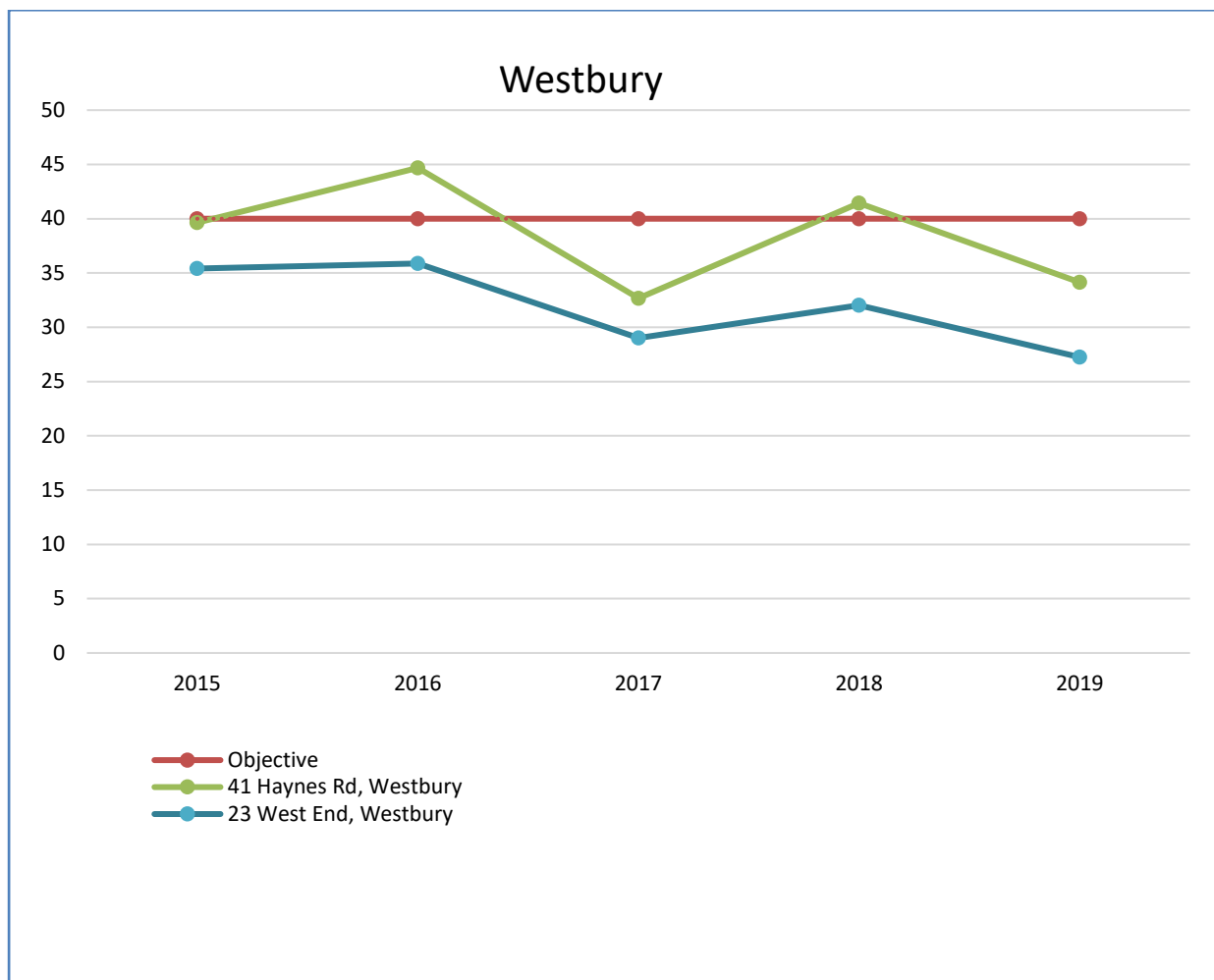


Figure A.1.9 – Chippenham

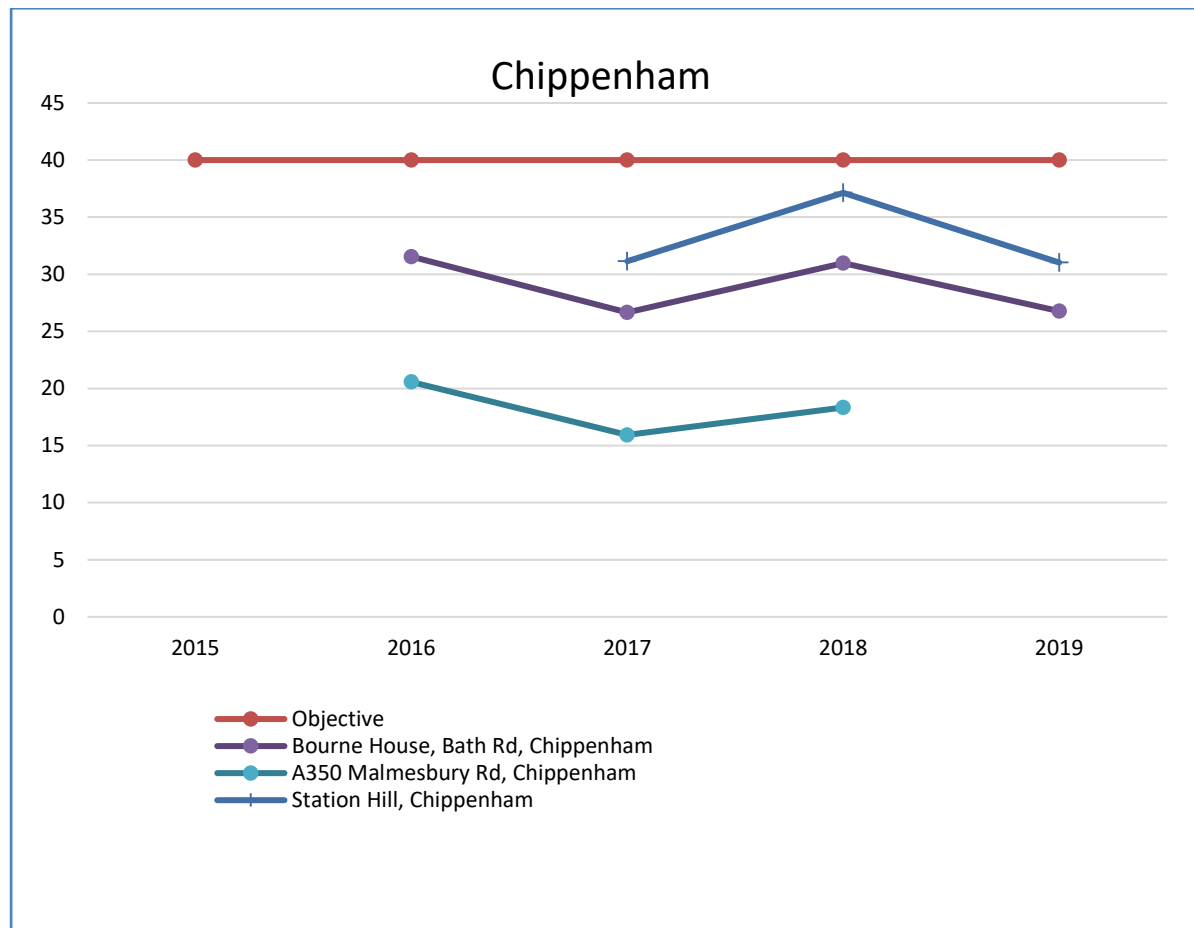


Table A.4 – 1-Hour Mean NO₂ Monitoring Results

Site ID	X OS Grid Ref (Easting)	Y OS Grid Ref (Northing)	Site Type	Monitoring Type	Valid Data Capture for Monitoring Period (%) ⁽¹⁾	Valid Data Capture 2019 (%) ⁽²⁾	NO ₂ 1-Hour Means > 200µg/m ³ ⁽³⁾				
							2015	2016	2017	2018	2019
AM1	414547	129575	Roadside	Automatic		98.4	0	0	0	0	0
AM2	382533	161115	Roadside	Automatic		99.8	0	0	0	3	0
AM3	400765	161458	Roadside	Automatic		99.6	1	1	7	2	1
AM4	406888	182711	Roadside	Automatic		97.6	n/a	n/a	n/a	0	0

Notes:

Exceedances of the NO₂ 1-hour mean objective (200µg/m³ not to be exceeded more than 18 times/year) are shown in **bold**.

(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%).

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

Table A.5 – Annual Mean PM₁₀ Monitoring Results

Site ID	X OS Grid Ref (Easting)	Y OS Grid Ref (Northing)	Site Type	Valid Data Capture for Monitoring Period (%) ⁽¹⁾	Valid Data Capture 2019 (%) ⁽²⁾	PM ₁₀ Annual Mean Concentration (µg/m ³) ⁽³⁾				
						2015	2016	2017	2018	2019
AM1	414547	129575	Roadside		99.5	14	14	20	22	22
AM2	382533	161115	Roadside		92.5	29	27	24	24	23
AM3	400765	161458	Roadside		98.8	11	20	20	20	21

Notes:

Exceedances of the PM₁₀ annual mean objective of 40µg/m³ are shown in **bold**.

(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%).

(3) All means have been “annualised” as per Boxes 7.9 and 7.10 in LAQM.TG16, valid data capture for the full calendar year is less than 75%. See Appendix C for details.

Table A.6 – 24-Hour Mean PM₁₀ Monitoring Results

Site ID	X OS Grid Ref (Easting)	Y OS Grid Ref (Northing)	Site Type	Valid Data Capture for Monitoring Period (%) ⁽¹⁾	Valid Data Capture 2019 (%) ⁽²⁾	PM ₁₀ 24-Hour Means > 50µg/m ³ ⁽³⁾				
						2015	2016	2017	2018	2019
AM1	414547	129575	Roadside		99.5	1	1	1	0	5
AM2	382533	161115	Roadside		92.5	12	8	15	0	5
AM3	400765	161458	Roadside		98.8	0	1	1	0	8

Notes:

Exceedances of the PM₁₀ 24-hour mean objective (50µg/m³ not to be exceeded more than 35 times/year) are shown in **bold**.

(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%).

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

Appendix B: Full Monthly Diffusion Tube Results for 2019

Table B.1 - NO₂ Monthly Diffusion Tube Results – 2019

Site ID	X OS Grid Ref (Easting)	Y OS Grid Ref (Northing)	NO ₂ Mean Concentrations (µg/m ³)														
			Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual Mean		
															Raw Data	Bias Adjusted (0.83) and Annualised ⁽¹⁾	Distance Corrected to Nearest Exposure ⁽²⁾
DT1	400000	161109	15	13	7	14	6	6	6	6	8	12	21	8	10	9	-
DT2	399924	161729	56	55	49	54	39	40	39	41	34	45	58	44	46	38	-
DT3	399763	161717	56	47	47	58	45	42	41	39	41	44	54	40	46	38	-
DT4	400210	161623	58	-	51	53	43	44	44	48	42	46	57	-	49	40	-
DT5	401788	162402	-	-	-	26	20	18	21	18	18	23	31	19	22	18	-
DT6	400635	160982	48	45	46	45	-	38	40	36	40	42	51	39	43	35	-
DT7	400807	161389	52	50	42	48	38	34	34	34	38	41	55	37	42	35	-
DT8	416230	160122	15	12	8	12	7	7	7	6	8	10	16	9	10	8	-
DT9	418723	169048	-	-	-	-	-	-	20	15	23	29	36	25	25	28	-
DT10	418942	169384	61	-	62	58	62	53	61	63	52	55	52	47	57	47	-
DT11	418944	169702	48	17	12	15	10	10	7	10	12	15	19	16	16	13	-
DT12	418053	169224	49	42	42	69	47	45	40	29	40	42	54	38	45	37	-
DT13	419296	168760	20	44	41	36	32	36	41	44	36	34	38	43	37	31	-
DT14	419011	169012	39	15	11	17	9	9	7	8	11	14	19	13	14	12	-
DT15	419152	169083	50	47	44	37	35	34	39	44	36	41	40	43	41	34	-

DT16	423535	149822	17	17	12	14	9	10	8	7	10	15	20	14	13	11	-
DT17	426941	150795	16	16	8	21	8	8	7	7	10	13	19	14	12	10	-
DT18	400126	170745	17	14	10	13	7	-	5	8	9	11	18	12	11	9	-
DT19	399873	170737	66	60	58	65	60	56	57	57	51	51	67	57	59	49	-
DT20	399988	170587	46	30	29	43	34	30	31	21	32	33	42	28	33	28	-
DT21	399657	171164	41	27	30	42	29	25	22	17	25	25	38	23	29	24	-
DT22	391647	174766	24	22	14	14	11	10	9	8	11	17	23	17	15	13	-
DT23	390446	172480	27	26	16	17	13	13	12	14	16	21	27	22	19	15	-
DT24	391712	173286	37	36	31	33	37	32	28	28	-	-	36	32	33	27	-
DT25	390454	174047	-	23	14	17	14	12	11	10	14	-	26	20	16	13	-
DT26	392467	122055	4	18	12	12	8	8	8	8	11	15	22	14	12	10	-
DT27	391925	173579	47	38	41	38	40	33	35	26	35	36	53	37	38	32	-
DT28	387240	151163	49	-	43	56	45	41	39	25	-	37	55	30	42	35	-
DT29	387166	150899	57	61	51	59	53	54	47	-	32	44	55	45	51	42	-
DT30	387269	151507	45	44	32	38	34	26	32	26	24	32	37	33	34	28	-
DT31	386491	151580	28	22	21	20	17	14	16	12	20	21	27	17	20	16	-
DT32	386739	150091	17	13	13	15	9	9	8	6	11	13	17	12	12	10	-
DT33	382716	161228	73	79	75	-	-	-	-	44	60	63	73	60	66	61	55
DT34	382538	161122	39	35	35	39	32	30	31	25	32	33	37	34	33	28	-
DT35	382538	161122	39	35	34	41	33	30	30	26	32	30	37	34	33	28	-
DT36	382538	161122	42	36	33	39	34	30	31	27	32	32	36	32	34	28	-
DT37	382544	161085	59	63	53	61	55	46	52	40	49	52	56	57	53	44	-
DT38	381878	160836	18	13	10	15	8	7	7	6	9	13	19	12	11	10	-
DT39	393354	188636	19	18	13	12	10	9	9	9	12	14	22	15	14	11	-
DT40	392312	187507	18	16	11	14	9	9	9	7	10	13	19	13	12	10	-
DT41	406944	182792	54	42	45	39	43	34	42	33	43	39	42	37	41	34	-

DT42	390118	164878	46	48	39	39	35	32	37	35	37	43	44	42	40	33	-
DT43	390136	164277	28	26	21	19	15	13	15	14	15	19	26	23	19	16	-
DT44	390471	163657	-	-	-	32	22	20	21	-	20	26	-	25	24	20	-
DT45	384343	157806	17	14	12	13	14	11	8	6	10	12	19	13	12	10	-
DT46	385244	157541	46	43	40	27	31	28	29	24	36	36	42	35	35	29	-
DT47	388678	144847	-	17	14	18	12	-	10	7	11	11	-	15	13	11	-
DT48	392498	142599	18	11	9	13	9	7	7	7	9	12	17	11	11	9	-
DT49	383812	155257	27	23	21	23	18	16	17	15	21	20	29	19	21	17	-
DT50	382595	168543	25	24	21	19	19	17	16	16	19	20	-	22	20	16	-
DT51	386577	170652	-	-	11	14	11	7	-	8	12	15	22	11	12	10	-
DT52	415105	130641	48	51	45	38	41	39	41	45	39	41	43	45	43	36	-
DT53	414373	129979	49	43	48	51	-	43	-	37	38	43	50	42	44	37	-
DT54	414682	129425	26	23	15	21	14	14	13	13	16	19	25	19	18	15	-
DT55	414500	130105	53	78	52	33	31	31	35	36	33	33	37	38	41	34	-
DT56	414602	130054	41	47	34	36	26	29	32	33	30	36	39	46	36	30	-
DT57	412872	130679	22	24	14	19	13	12	13	13	14	19	25	19	17	14	-
DT58	410231	130679	18	18	12	17	11	11	12	12	13	15	19	16	14	12	-
DT59	413828	130142	61	58	47	55	45	45	43	41	52	45	-	86	52	44	-
DT60	416641	140766	22	16	13	14	11	11	8	9	11	15	21	12	14	11	-
DT61	414760	130567	26	23	17	23	13	15	15	14	18	17	31	21	19	16	-
DT62	414547	129575	43	37	33	42	34	33	35	29	37	37	40	35	36	30	-
DT63	414547	129575	38	37	33	42	33	36	34	28	34	37	44	33	36	30	-
DT64	414547	129575	43	38	34	42	31	28	35	30	37	35	42	35	36	30	-
DT65	413690	130362	65	79	55	63	44	56	58	60	55	68	70	68	62	51	-
DT66	413669	130503	53	53	43	41	33	40	42	44	40	49	51	47	45	37	-
DT67	414550	129523	48	43	36	51	35	42	38	31	41	43	52	42	42	35	-

DT68	414551	129815	48	50	35	51	34	40	37	33	38	47	52	47	43	35	-
DT69	417055	121502	18	18	11	16	11	12	12	10	12	14	20	15	14	12	-
DT70	414312	130651	53	49	42	44	39	41	36	43	41	46	46	43	44	36	-
DT71	412572	130673	54	60	44	41	40	43	45	52	43	49	37	51	47	39	-
DT72	413038	130526	43	45	35	41	35	34	32	33	36	34	47	41	38	32	-
DT73	413517	130698	39	43	35	31	31	30	31	33	32	36	38	38	35	29	-
DT74	414320	130879	40	39	31	36	30	34	26	28	31	37	40	38	34	28	-
DT75	409600	131236	39	35	30	43	28	33	26	22	32	33	46	32	33	27	-
DT76	415987	130940	29	30	28	13	17	21	19	21	22	26	31	27	24	20	-

National bias adjustment factor used

Annualisation has been conducted where data capture is <75%

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

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**.

(1) See Appendix C for details on bias adjustment and annualisation.

(2) Distance corrected to nearest relevant public exposure.

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

Diffusion Tube Bias Adjustment Factors

The National Bias Correction Factor calculated by the LAQM helpdesk for diffusion tubes analysed by Somerset County Council, 20% TEA in water was obtained when the data for this report was compiled in July 2019 (Version 06/20) and a figure of **0.83** has been used to correct Wiltshire Council diffusion tube data for 2019.

This figure is an average of several co-location studies and includes correction factors submitted for the Wiltshire Council co-located diffusion tubes in Salisbury and Bradford on Avon.

PM₁₀ monitoring adjustment

Data from Wiltshire Council automatic analysers is handled directly by Ricardo AEA which has confirmed the following:

Bradford on Avon has a factor of 0.8333 applied to it as it has unheated inlet.

Devizes and Salisbury have a factor of 1.3 applied to their data as the inlet is heated.

QA/QC of automatic monitoring (NO_x analysers)

Automatic calibration

To ensure that the information obtained from the analysers is as accurate as possible and to quantify any instrument drifts a stringent QA/QC protocol is followed.

The API M200A analyser is subjected to daily automatic calibration. This provides a daily check on the performance of the instrument. It should be noted that these results are not used for instrument scaling.

The zero air is generated by passing ambient air through purafil charcoal scrubbers before it is passed into the reaction cell. The span gas is generated by an NO₂ permeation tube containing pure liquid NO₂. The permeation tube is enclosed in an oven, which is maintained at a constant temperature. The zero air is passed across the permeation tube at a constant flow rate. Provided the flow rate and temperature are kept constant, the amount of NO₂ permeating from the tube into the air stream

will be constant. The gas then produced then passes into the reaction cell and a span calibration response is determined.

The data is collected as 1-hour averages. The data is uploaded from the analyser via modem to the AQA-Ricardo team who check scale and publish the data on the website; <http://www.wiltshireairquality.org.uk/>

Manual calibration

Every three weeks manual calibration checks are carried out on the API M2000 analysers. This allows the instrument drifts to be fully qualified and documented using traceable calibration gas standards and the results are used to scale data.

At the time of the instrument calibration checks, instrument pre-calibration checks are made to ensure that the condition of the analyser, before the calibration check, is assessed and any faults attended to.

The calibration procedure requires a zero check on the analyser. This is achieved by a source of zero air being provided by passing ambient air through the charcoal scrubber before it enters the reaction cell. Once stability has been achieved (this is defined as a variation of less than 0.1ppb over a one-minute period for the analyser) three readings are recorded from the instrument display after three ten second intervals. Next the calibration gas bottle is opened at a pressure of 30 psi. The analyser is allowed to stabilise for a minimum of ten minutes. Three consecutive readings are taken from the instrument display, allowing ten seconds between readings. The calibration gas is then isolated.

By considering the previous calibration results and the results obtained from the calibration just performed, the success of the calibration procedure is determined. The zero value should not differ by more than ± 2 ppb from the previous calibration. The span calibration should not differ by more than 5% from that obtained during the previous calibration. Additionally, the analyser sample inlet filter is changed when necessary.

Six monthly checks

These checks are carried out by our current contractor, Matts Monitors Limited, at the same time as they service the equipment. They ensure that the measurements from the analyser are representative and inter-comparable. The calibrations act as an independent audit of the system performance. Additionally, any site-specific problems that may have remained undetected will be fully quantified.

QA/QC of diffusion tube monitoring - Laboratory and preparation information

Wiltshire Council utilises diffusion tubes prepared and analysed by Somerset County Council. The laboratory participates in the Workplace Analysis Scheme for Proficiency (WASP) for nitrogen dioxide tubes. They analyse a solution supplied by Netcen as part of the QA/QC scheme that they run. The laboratory also participates in a field inter-comparison scheme which is controlled by Netcen and organised by the Health and Safety Laboratory.

Three tubes are co-located with a continuous analyser which provides a reference value. The tubes are prepared by pipetting 30µl of solution of 20% triethanolamine in water onto the metal grids in the end of the cap, then assembling the tube components. A fresh batch of tubes is prepared each month ready to dispatch in time for the required exposure date. Laboratory blanks are retained so that at least one is run alongside each batch of samples. Travel blanks are supplied monthly as required by the UK survey procedure.

Laboratory QA/QC

The WASP Scheme is an independent proficiency testing scheme operated by the Health and Safety Laboratory (HSL). Each month a diffusion tube doped with nitrite is distributed to each participating laboratory; participants then analyse the tube and report the results to HSL. The nominal mass of nitrite on the doped tubes is different each month and is intended to reflect the range encountered in actual monitoring. For diffusion tube QA/QC in the context of Local air Quality Management, AEA Energy &

Environment carry out an assessment of laboratory performance for each full calendar year. This was based on the following criteria, which were agreed with Defra and HSL:

- Participating laboratories must complete at least 10 of the 12 monthly WASP rounds.
- The year's single worst result is ignored: this makes some limited allowance for one-off problems with analytical equipment etc.
- Each laboratory's monthly standardised results are then combined to give a standard uncertainty for the full year, expressed as a relative standard deviation (%RSD).
- The RSD must be within 15%.

Mean Standardised result (actual result / nominal value): 0.98. Mean percentage under/over-estimation of analysis: -1.5%. Comparison with AEA performance criteria for Local Authority Support: RSD of Standardised Results, ignoring worst value: 4.0 % - this is within the performance target of 15%.


It is noted that the Somerset Scientific Service laboratory's WASP results met AEA Energy & Environment's performance criteria in 2019.

Distance Correction

Where diffusion tube monitoring sites have failed to meet the annual objective for annual mean levels of NO₂ and are not located at the façade of relevant exposure, the data has been corrected in accordance with the guidance set out in Paragraphs 7.77-7.79 of LAQM.TG16 and using the NO₂ fall off with distance calculator available on the LAQM website.

Local background monitoring has been introduced in all AQMA's in Wiltshire and this data has been used in any fall off with distance calculation. We have also slightly relocated a significant number of tubes in order that they are at the façade of relevant exposure in order to eliminate the need for this calculation.

Fall off with distance calculation – DT33



Enter data into the pink cells

Step 1	How far from the KERB was your measurement made (in metres)?	1.35	metres
Step 2	How far from the KERB is your receptor (in metres)?	2.35	metres
Step 3	What is the local annual mean background NO ₂ concentration (in µg/m ³)?	9.51	µg/m ³
Step 4	What is your measured annual mean NO ₂ concentration (in µg/m ³)?	60.83	µg/m ³
Result	The predicted annual mean NO ₂ concentration (in µg/m ³) at your receptor	54.7	µg/m ³

Annualisation of data

Annualisation of two sites (DT9 and DT33) was necessary as valid data capture for the year was below 75%. This was carried out in accordance with the guidance in Boxes 7.9 and 7.10 of LAQM.TG16 and using reference AURN data from Swindon and Southampton. The results are presented below.

Annualisation of DT9 (Ashton Road, Trowbridge)

Ashton Road Trowbridge - DT9					Masons Lane BOA				
		Mthly av	Mthly av				Mthly av	Mthly av	
		B1 (Am)	D1	B1 when D1 available (Pm)			B1 (Am)	D1	B1 when D1 available (Pm)
Start Date	End Date	Swindon AURN	Ashton Road		Start Date	End Date	Southampton AURN	Ashton Road	
05/12/2018	09/01/2019	19.45			05/12/2018	09/01/2019	37.54		
09/01/2019	06/02/2019	23.23			09/01/2019	06/02/2019	41.38		
06/02/2019	06/03/2019	16.38			06/02/2019	06/03/2019	47.72		
06/03/2019	03/04/2019	13.81			06/03/2019	03/04/2019	34.9		
03/04/2019	01/05/2019	16.38			03/04/2019	01/05/2019	40.69		
01/05/2019	05/06/2019	9.48			01/05/2019	05/06/2019	30.53		
05/06/2019	03/07/2019	7.83			05/06/2019	03/07/2019	22.62		
03/07/2019	07/08/2019	7.11	20	7.11	03/07/2019	07/08/2019	25.07	20	25.07
07/08/2019	04/09/2019	6.26	15	6.26	07/08/2019	04/09/2019	26.46	15	26.46
04/09/2019	02/10/2019	10.32	23	10.32	04/09/2019	02/10/2019	22.77	23	22.77
02/10/2019	06/11/2019	13.36	29	13.36	02/10/2019	06/11/2019	28.15	29	28.15
06/11/2019	04/12/2019	23.22	36	23.22	06/11/2019	04/12/2019	35.69	36	35.69
04/12/2019	08/01/2020	12.89	25	12.89	04/12/2019	08/01/2020	35.11	25	35.11
Average		13.82	24.66	12.19	Average		32.97	24.66	28.88
Am=13.82	Am=annual mean B1				Am=32.97				
Pm=12.19	Pm=period mean of B1				Pm=28.88				
R=Am/Pm= 1.13	Ra=average ratio of Am/Pm				Am/Pm= 1.14				
<p>Narrative: AURN hourly averages selected for each monitoring period to give monitoring period average B1 above. Monthly figures available for Masons tube used in D1. Where provisional AURN data used this is indicated. Ratio average Ra = 1.14 + 2.7/2 = 1.92</p>									
<p>Annualised average of D1 = 24.66 x 1.135 = 27.99ug/m3 nitrogen dioxide</p>									

Annualisation of DT33 (Masons Lane, Bradford on Avon)

Masons Lane BOA - DT33		Mthly av	Mthly av			Masons Lane BOA	Mthly av	Mthly av		
Start Date	End Date	B1 (Am)	D1	B1 when D1 available (Pm)		Start Date	End Date	B1 (Am)	D1	B1 when D1 available (Pm)
05/12/2018	09/01/2019	19.45	65	19.45		05/12/2018	09/01/2019	37.54	65	37.54
09/01/2019	06/02/2019	23.23	73	23.23		09/01/2019	06/02/2019	41.38	73	41.38
06/02/2019	06/03/2019	16.38	79	16.38		06/02/2019	06/03/2019	47.72	79	47.72
06/03/2019	03/04/2019	13.81	75	13.81		06/03/2019	03/04/2019	34.9	75	34.9
03/04/2019	01/05/2019	16.38				03/04/2019	01/05/2019	40.69		
01/05/2019	05/06/2019	9.48				01/05/2019	05/06/2019	30.53		
05/06/2019	03/07/2019	7.83				05/06/2019	03/07/2019	22.62		
03/07/2019	07/08/2019	7.11				03/07/2019	07/08/2019	25.07		
07/08/2019	04/09/2019	6.26	44	6.26		07/08/2019	04/09/2019	26.46	44	26.46
04/09/2019	02/10/2019	10.32	60	10.32	provisional	04/09/2019	02/10/2019	22.77	60	22.77
02/10/2019	06/11/2019	13.36	63	13.36	provisional	02/10/2019	06/11/2019	28.15	63	28.15
06/11/2019	04/12/2019	23.22	73	23.22	provisional	06/11/2019	04/12/2019	35.69	73	35.69
04/12/2019	08/01/2020	12.89	60	12.89	provisional	04/12/2019	08/01/2020	35.11	60	35.11
Average		15.43	65.77	15.43		Average		32.97	65.77	34.41
Am=13.82	Am=annual mean B1					Am=32.97				
Pm=15.43	Pm=period mean of B1					Pm=34.41				
R=Am/Pm=0.89	Ra=average ratio of Am/Pm					Am/Pm=0.96				
<p>Narrative: AURN hourly averages selected for each monitoring period to give monitoring period average B1 above. Monthly figures available for Masons tube used in D1. Where provisional AURN data used this is indicated. Ratio average Ra = 0.96 + 0.89/2 = 0.925</p>										
<p>Annualised average of D1 = 65.77 x 0.925 = 60.83ug/m3 nitrogen dioxide</p>										

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

All mapping of our active passive monitoring sites is now held on-line at our dedicated Air Quality website via the following link:

<http://www.wiltshireairquality.org.uk/data/non-auto-data?type=active>

Appendix E: Summary of Air Quality Objectives in England

Table E.1 – Relevant Air Quality Objectives in England

Pollutant	Air Quality Objective ⁶	
	Concentration	Measured as
Nitrogen Dioxide (NO ₂)	200 µg/m ³ not to be exceeded more than 18 times a year	1-hour mean
	40 µg/m ³	Annual mean
Particulate Matter (PM ₁₀)	50 µg/m ³ , not to be exceeded more than 35 times a year	24-hour mean
	40 µg/m ³	Annual mean
	125 µg/m ³ , not to be exceeded more than 3 times a year	24-hour mean
	266 µg/m ³ , not to be exceeded more than 35 times a year	15-minute mean

⁶ The units are in microgrammes of pollutant per cubic metre of air (µg/m³).

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	Air quality Annual Status Report
Defra	Department for Environment, Food and Rural Affairs
DMRB	Design Manual for Roads and Bridges – Air quality screening tool produced by Highways England
EU	European Union
FDMS	Filter Dynamics Measurement System
LAQM	Local Air Quality Management
NO ₂	Nitrogen Dioxide
NO _x	Nitrogen Oxides
PM ₁₀	Airborne particulate matter with an aerodynamic diameter of 10µm (micrometres or microns) 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